

**Mitigated Determination of Non-Significance
File Number ENV-08-0397-YL**

Proponent: City of Yelm, Washington

Description of Proposal: Allocation of 3,233.73 acre-feet (af) of water per year and the transfer of 952.27 acre-feet of water per year for municipal purposes in 4 Phases between 2010 and 2037. Phase 1 would allocate 554 af of water in the SW Yelm area between 2010 and 2012. Phase 2 would allocate an additional 388.34 af of water in the same area, and transfer 719.66 af to the SW Yelm area from the existing downtown wells. Phase 3 would allocate an additional 875.39 af of water in the SW Yelm wellfield and transfer 232.61 to SW Yelm from the Golf Course well currently under development. Phase 4 would allocate an additional 1,416 af of water in the SW Yelm wellfield for a total water portfolio for Yelm (both existing and new water rights) of 4,186 acre feet.

Location of the Proposal: The SW Yelm wellfield would be located in the Southwest quadrant of the City of Yelm in the area of the Thurston Highlands Master Planned Community.

Section/Township/Range: The property is approximately 1,240 acres and is located in the South ½ of Section 23, the East ½ of Section 26, and Section 27, Township 17 North, Range 1 East, W.M.

Threshold Determination: The City of Yelm as lead agency for this action has determined that this proposal does not have a probable significant adverse impact on the environment. Therefore, an Environmental Impact Statement (EIS) will not be required under Section 43.21C.030 (2)(c) RCW. This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

Conditions/Mitigating Measures: See Attachment A

Lead agency: City of Yelm

Responsible Official: Grant Beck, Community Development Director

Date of Issue: May 1, 2009

Comment Deadline: May 15, 2009

Appeal Deadline: May 22, 2009



Grant Beck, Community Development Director

This Mitigated Determination of Non-Significance (MDNS) is issued pursuant to Section 197-11-340 WAC. Comments must be submitted to Grant Beck, Community Development Department, at City of Yelm, 105 Yelm Avenue West, Yelm, WA 98597, by May 15, 2009, at 5:00 P.M. The City of Yelm will not act on this proposal prior to May 22, 2009, at 5:00 P.M.

You may appeal this determination to the Yelm Hearing Examiner, at above address, by submitting a written appeal no later than May 22, 2009, at 5:00 P.M. You should be prepared to make specific factual objections. Contact Grant Beck, Community Development Director, to learn more about the procedures for SEPA appeals. This MDNS is not a permit and does not by itself constitute project approval. The applicant must comply with all applicable requirements of the City of Yelm prior to receiving construction permits which may include but are not limited to the City of Yelm Comprehensive Plan, Zoning Code (Title 17 YMC), Critical Areas Code (Chapter 14.08 YMC), Stormwater Drainage Design and Erosion Control Manual, International Building Code, Critical Areas Regulations (Title 14 YMC), Road Design Standards, Platting and Subdivision Code (Title 16 YMC), and the Shoreline Master Program.

DO NOT PUBLISH BELOW THIS LINE

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Copies to: All agencies/citizens on SEPA mailing list and adjacent property owners
Dept. of Ecology w/checklist
Dept. of Ecology Southwest Region, Water Resources Section

Attachment A
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Findings of Fact

1. This Mitigated Determination of Non Significance is based on the project as proposed and the impacts and potential mitigation measures reflected in the following environmental documents:
 - ✓ Environmental Checklist (December 2008, City of Yelm)
 - ✓ Yelm Water Rights Mitigation Plan (October 2008, City of Yelm)
 - ✓ Future Demand/Supply Forecast and Groundwater Modeling for Mitigation Planning (October, 2008, Golder Associates, Inc.)
 - ✓ Groundwater Modeling of New Water Right and Transfer Applications (January, 2008, Golder Associates, Inc.)
 - ✓ McAllister Wellfield Model: Comprehensive Pumping Scenario for Cities of Olympia, Lacey, and Yelm (July 2008, S.S. Papadapolus & Associates, Inc.)
2. The City of Yelm submitted three water right applications (G2-29084, G2-29085, and G2-29086) to the Washington State Department of Ecology (Ecology) with a priority date of January 10, 1994. These applications consist of two 3,000 gallons per minute (gpm) municipal use rights and one 1,500 gpm right, for a total instantaneous limit of 7,500 gpm. Together, the applications request 10,000 acre-feet of water per year for municipal supply. This annual quantity represented the City's projected long-range potable water demand at the time, based on the City's then current Comprehensive Plan and Water System Plan.
3. Due to the City of Yelm's exceptional conservation and reclaimed water programs, the current long-term demand projection for potable water supply is estimated to be 4,186 acre-feet per year, occurring approximately in the year 2037.
4. The City's existing water rights, after completion of the pending McMonigle transfer, authorize total annual pumping of 952 acre-feet per year, leaving 3,234 acre feet per year of new water rights needed to serve long-range demands through 2037.
5. Water demand occurs over time, and Yelm has proposed a phased approach to developing both the infrastructure and implementing mitigation measures at the time new water is actually needed by the City.

Phase 1 would allocate 554 acre-feet per year of water in the SW Yelm area between 2010 and 2012. The existing downtown and Tahoma Valley Golf and Country Club wellfields would remain in use.

Phase 2 would allocate an additional 388.34 acre-feet per year of water in the SW Yelm area and is anticipated between 2013 and 2017. Additionally, all water rights associated with the downtown wellfield (719.66 acre-feet) would be transferred to the SW Yelm wellfield from the existing downtown wells.

Phase 3 would allocate an additional 875.39 acre-feet per year of water in the SW Yelm wellfield and is expected between 2018 and 2024. In addition, all water rights associated with the Tahoma Valley Golf and Country Club wellfield (232.61 acre-feet) would be transferred to the SW Yelm wellfield.

Phase 4 would allocate an additional 1,416 acre-feet per year of water in the SW Yelm wellfield for a total water portfolio for Yelm (both existing and new water rights) of 4,186 acre-feet per year, all pumped from the SW Yelm wellfield. Phase 4 is expected between 2025 and 2037.

The following table identifies the amount of water pumped from each wellfield during each phase.

	Downtown	Golf Course	SW Yelm	Total Water Rights
Phase 1	719.66	232.61	554	1,506.27
Phase 2	0	232.61	1,662	1,894.61
Phase 3	0	0	2,770	2,770
Phase 4	0	0	4,186	4,186

6. Impacts to both the Nisqually River (WRIA 11) and Deschutes River (WRIA 13) watersheds from additional groundwater withdrawals were investigated using a numerical groundwater model designed to simulate the response of the surface water and groundwater system to new pumping at the SW Yelm Wellfield and changes in pumping at the downtown wellfield and golf course well. The complex and sophisticated computer model simulates the hydrologic cycle in the study area and is the most up-to-date and scientifically sound method of predicting impacts that could result from groundwater withdrawals. The scientists who built, managed, and run the model orient towards a 'conservative' approach to modeling, meaning model results tend to over-predict surface water depletions.
7. The City of Yelm has worked alongside its partners in the McAllister-Yelm Sub-basin (the Nisqually Indian Tribe and the Cities of Olympia and Lacey) to address water-related issues and water right applications throughout the entire watershed planning process. Hydrologic impacts resulting from the cumulative pumping by all of the Cities have been modeled, and opportunities for joint mitigation are being discussed and implemented.
8. Predicted impacts to the Nisqually Valley hydrologic area includes changes in groundwater discharge to Yelm Creek (at the point of discharge to the Nisqually River). Under Phase 1, the highest annual discharge decreases by up to 0.04 cubic feet per second (cfs), with the maximum depletion occurring in the spring.

Under Phases 2, 3 and 4, the discharge to the Creek increases compared to the baseline case by up to 0.27, 0.32 and 0.24 cfs, respectively; in these three phases; the maximum increases will all occur in late winter and spring. The maximum summertime increase in Phases 2, 3 and 4 will be 0.23, 0.28 and 0.23 cfs, respectively. These increases result from the net effect of pumping 4,186 ac-ft/yr from the deep Undifferentiated Tertiary Aquifer (TQu) at the new Wellfield, which involves transferring 952 acre-feet per year pumping from the shallow Advance Vashon Outwash (Qga) aquifer (downtown-area wells). Yelm Creek is in relatively closer hydraulic connection to the Qga aquifer.

Including Yelm Creek impacts, there will also be cumulative monthly changes in groundwater discharge to the Nisqually River at River Mile 4.3 for the four phases. Under Phase 1, the model predicted that the groundwater discharge will be up to 0.21 cfs lower than under baseline condition, with the maximum depletion occurring in August. Under Phases 2 and 3, the total discharge to the river will increase year-round compared to the baseline; the maximum increases will be 0.29 and 0.25 cfs, respectively, both occurring in spring. The summertime increases will be up to 0.25 and 0.20 cfs. Under Phase 4, the model predicts that a decrease in groundwater discharge will occur year-round compared to the baseline, with a maximum depletion of 0.28 cfs occurring in September. However, the cumulative predicted depletions represent less than one percent of the baseline discharge to the river in all months for Phases 1 and 4.

9. Predicted impacts to the Deschutes Valley hydrologic area includes changes in groundwater discharge to the entire Deschutes River above Tumwater Falls for the four phases. Under Phase 1, the groundwater discharge to the river will decrease by up to 0.14 cfs. Under Phase 2, the depletion will increase to up to 0.38 cfs, then under Phase 3 to 0.71 cfs and under Phase 4 to 1.16 cfs. All maximum depletions will occur in spring months. Only under Phase 1 will the depletions not exceed one percent of the baseline discharge in any months; conversely, this threshold will be exceeded in all months under Phase 4.
10. Predicted impacts to the McAllister Valley hydrologic area includes changes in groundwater discharge to the Upper McAllister Valley hydrology for the four phases. Under Phase 1, the groundwater discharge to the springs will decrease by up to 0.13 cfs. Under Phase 2, the depletion will increase to up to 0.37 cfs, then under Phase 3 to 0.61 cfs and under Phase 4 to 0.92 cfs. All maximum depletions will occur in summer months (either August or September). Only under Phase 4 will the depletions exceed one percent of the baseline discharge, and will do so between June and November (inclusive).
11. Predicted impacts to the Woodland Creek Basin includes changes in groundwater discharge to the entire Woodland Creek hydrology. This analysis assumes that the total impact to flow in the creek at Henderson Inlet is the sum of the individual impacts to all reaches. Under Phase 1, the groundwater

discharge to the creek will decrease by 0.01 cfs in all months. Under Phase 2, the depletion will increase to up to 0.04 cfs, then under Phase 3 to 0.07 cfs and under Phase 4 to 0.1 cfs. The maximum depletions will occur in the spring for all phases, though the differences between these flow depletions in any month are small. The cumulative depletions will exceed one percent of the baseline discharge during summer months only in Phases 2, 3, and 4.

12. Increasing production capacity by adding new SW Yelm Wellfield wells and reducing downtown-area pumping will cause both increases and decreases in groundwater levels, depending on the location and timing (phase). Three separate hydrogeologic units were analyzed for these changes:

Under Phase 4, the new pumping is predicted to cause water levels in the Advance Vashon Outwash (Qga) aquifer in the downtown area to rise by up to 5 feet. This increase will result mostly due to the transfer of the shallow downtown-area pumping from the City's Wells 1 and 2, and the Nisqually Golf Course to the deeper aquifer to the southwest of the downtown area. The water level in the City's two downtown wells typically ranges from 25 to 35 feet bgs. Therefore, the new water level is unlikely to cause flooding problems in the area. Silver Spring is believed to discharge from the Qga aquifer and feed the headwaters of the Silver Creek. The model predicts that the groundwater level near the Spring will be drawn down by up to 0.25 feet (3 inches) under Phase 4. The City will continue to evaluate potential impacts to Silver Springs in consultation with the Squaxin Island Tribe.

The predicted change in groundwater level in the Pre-Vashon Gravel Aquifer (Qpg) will be generally small, reaching a maximum drawdown of no more than 3 feet within the wellfield area. A long-term drawdown of one foot will occur at a radial distance of up to four miles from the Wellfield. The Nisqually Tribe operates a hatchery near the Nisqually River at the Kalama Creek Spring Complex. Although it is difficult to accurately predict the drawdown impacts of the new Wellfield pumping, the predicted maximum drawdown is less than 0.25 feet.

The predicted depletion of the groundwater discharge to the Nisqually Tribe's Kalama Creek Spring complex will be up to 0.02 cfs during Phase 1, 0.04 cfs during Phase 2, 0.06 cfs during Phase 3 and 0.09 cfs during Phase 4. In all phases, the highest seasonal depletion will occur in August. Only during the summer months of Phase 3 and all months of Phase 4 will the predicted depletions exceed one percent of the baseline discharge. The model predicts that the groundwater level near the Springs will be drawn down by less than one foot under Phase 4. The City will continue to evaluate potential impacts to Kalama Creek Springs Complex in consultation with the Nisqually Indian Tribe.

By phase 4, the new wellfield will cause water levels in the Undifferentiated Tertiary Aquifer (Tqu) to decline by up to 10 feet (near the wellfield). Drawdowns

of up to one foot will occur at distances of up to five miles from the wellfield under Phase 4. The model does not have the capability of predicting the actual drawdown in each well due to the effects of well inefficiency, and the model averages the drawdown over the dimension of the model cell (250-ft by 250-ft). Also, each well will likely behave differently due to local hydrogeologic differences.

13. To mitigate temporary impacts to the Nisqually River that fall below the accuracy limits of the model, the City is working on an agreement with the Nisqually Tribe wherein, as part of the mitigation for the Nisqually River, the Tribe has committed to require the discharge of an additional 10 cfs as a condition for its approval of any petition by Tacoma Power to the Nisqually River Coordinating Committee (NRCC) for a reduction in the minimum flow requirement. The 10 cfs quantity is double the estimated impact of winter pumping on the Nisqually River by the City of Olympia's McAllister Wellfield and will also mitigate the relatively small impacts by the City of Yelm. The additional release of 10 cfs during periods when Tacoma Power is operating under an adjusted minimum flow regime) serves as mitigation for impacts of pumping both the SW Yelm and McAllister Wellfields under full build-out. It is likely that Ecology minimum flows will not be violated during these times; however, in the rare instance that they could be, the addition of 10 cfs in the controlled river system will ensure that there is no adverse effect due to Yelm pumping.
14. To mitigate impacts to McAllister Springs and McAllister Valley, the City of Yelm will likely transition into Phase 1 pumping at approximately the same time that Olympia will be transitioning from the Springs to the McAllister Wellfield. A portion of the benefits to McAllister Valley hydrology that are realized by the City of Olympia's transition will be used to offset depletions caused by City of Yelm pumping. The City of Yelm is agreeable to apportion part of its Yelm Creek benefits to offset the City of Olympia's Yelm Creek impacts, in exchange for McAllister Springs offsets, subject to an interlocal agreement. In the long-term (Phases 2 through 4 of Yelm's water system development), the water savings associated with the transition of Olympia's source provide an opportunity to offset Yelm's predicted depletion in the McAllister Complex.

If Yelm's first SW well is developed and utilized prior to Olympia's transfer to the McAllister Wellfield, a maximum depletion associated with the first SW well is predicted to be less than one quarter of 1% of the baseline (significantly below the model accuracy). If this situation occurs, it is temporary until Olympia transfers some water use to the McAllister Wellfield.

15. Mitigation of Yelm Creek impacts will be required only during Phase 1 as the first SW Wellfield well is brought online. As following phases transfer shallow downtown pumping to the SW Yelm Wellfield, the impacts to Yelm Creek convert to benefits.

To offset impacts during Phase 1, the City plans to increase the recharge rate of reclaimed water at Cochrane Memorial Park. The City currently recharges 56 ac-ft/yr at the facility, with a uniform year-round rate (equivalent to 0.08 cfs or 35 gpm). Between 2003 and 2008, the City had excess reclaimed water in all months, ranging from 0.07 to 0.49 cfs. This excess was primarily delivered to the Centralia Power Canal, and on occasion, to the Nisqually River.

The City plans to increase reclaimed water recharge at the Cochrane Park facility in a quantity sufficient to offset Phase 1 impacts to Yelm Creek.

Additionally, the City of Yelm has entered into discussions with the Nisqually Indian Tribe regarding out-of-kind mitigation of Yelm Creek. This mitigation plan provides the working agreement between the City of Yelm and the Nisqually Indian Tribe. The City of Yelm is committed to working with the Tribe on the following restoration opportunities, including creek channel restoration, creating a continuous vegetated buffer, installing a stream gage, and removing riprap weirs at a pipeline crossing.

16. The City proposes to jointly mitigate predicted impacts of pumping on Woodland Creek and the Tri-lakes Complex by entering into a cooperative cost sharing agreement with the Cities of Olympia and Lacey to directly mitigate through groundwater flow replacement using reclaimed water at a ratio of 1.5:1 and to indirectly mitigate through acquisition of protective properties that serve as buffers.

The City of Yelm is currently negotiating a cooperative, cost-sharing agreement with the Cities of Olympia and Lacey to participate in the construction of a regional reclaimed water infiltration facility that will mitigate impacts from the Cities' water rights applications. Mitigation will be provided by infiltrating reclaimed water in the upper reach of Woodland Creek to replace captured groundwater that provides base flow to the creek.

The infiltration facility is planned to be constructed and operational by 2012. The model does not predict Phase 1 impacts to Woodland Creek hydrology above one percent of baseflow. At Phase 2, the impacts are 0.04 cfs and the City will participate in the regional project.

17. As part of a regional mitigation effort, the Cities of Yelm, Olympia and Lacey have entered into an agreement to purchase water rights from within the Deschutes Basin and to use these water rights for mitigation purposes. Acquired water rights will likely be transferred into state trust. Preliminary data from Ecology and Westwater Research indicate that there are a number of existing water rights meeting appropriate criteria (including location, volume, type of use, and evidence of recent use). The three Cities plan to purchase and share mitigation credits for water rights acquired under this agreement.

As part of the agreement, the City of Yelm plans to acquire sufficient water rights and/or retire domestic wells in the Deschutes Basin to offset the potential depletions in the upper, middle and lower reaches of the Deschutes River and Silver Creek and Spring. Yelm proposes to mitigate predicted impacts during closure periods at a mitigation ratio of 1:1 or 100 percent through the joint acquisition of water rights with the Cities of Olympia and Lacey. To date, the three Cities have signed two Interlocal Agreements to formalize this coordinated effort.

As an additional measure, the City of Yelm is consulting with the Squaxin Island Indian Tribe to address fisheries habitat concerns in the Deschutes Watershed. They are currently considering cooperative funding ventures for habitat related improvements including placement of woody debris, removal of invasive vegetation, and possible acquisition of riparian conservation easements or land as buffers to further enhance riparian habitat on the Deschutes River. Much of this work would be conducted in the upper reaches of the Deschutes and near Silver Springs and Creek.

18. Pursuant to the provisions of Section 90.03.290 RCW and Chapter 90.44 RCW, the Washington Department of Ecology issues a water right when water is available for appropriation for a beneficial use, that the appropriation will not impair existing rights, and will not be detrimental to the public welfare.
19. The State Environmental Policy Act Rules at Section 197-11-330 (1)(c) allows the responsible official to consider mitigation measures an agency will implement as part of the proposal, including any mitigation measures required by development regulations, comprehensive plans, or other existing environmental rules or laws.
20. The mitigation measures of this threshold determination are those proposed by the City of Yelm to mitigate identified potential adverse impacts. These measures may be modified or extended by the Washington Department of Ecology through the placement of additional conditions attached to the issuance of a new water right in order to ensure that impacts to existing water rights or the public welfare are mitigated.

Mitigation Measures

1. Mitigate all impacts to the Nisqually Valley, Deschutes Valley, and McAllister Valley hydrologic areas as identified by the report *Groundwater Modeling of New Water Right and Transfer Applications* (January, 2008, Golder Associates, Inc.) that do not fall below the accuracy limits of the model with a one-to-one mitigation ratio (100 percent mitigation) through the phased, adaptive management approach outlined in the *Final Water Rights Mitigation Plan* (October 2008, City of Yelm).
2. Mitigate all impacts to the Woodland Creek hydrologic area as identified by the report *Groundwater Modeling of New Water Right and Transfer Applications* (January, 2008, Golder Associates, Inc.) that do not fall below the accuracy limits of the model with a one and one-half-to-one mitigation ratio (150 percent mitigation) through the phased, adaptive management approach outlined in the *Final Water Rights Mitigation Plan* (October 2008, City of Yelm).