

Yacolt Conference Call
August 18, 2011

Participants: Pete Roberts, Chuck McDonald, Tim Caire, John Peterson, Doug Quinn, Steve Prather, Jeff Niten, Dave Knight, John Stormon, Greg Zentner, Cathi Read

Infiltration trench planning – update

We reviewed the *DRAFT Yacolt Hoag Street Discharge Memo* dated 16 August 2011, from Kennedy Jenks to Yacolt.

- Tim Caire pointed out that the main change in this document since the previous version was how the correction factor was calculated, which determines the required infiltration area.
- KJ used the two references that John Stormon had suggested (Ecology Stormwater reference and U.S. EPA reference) to determine the correction factor.
- Tim explained that KJ has determined they will use a correction factor of 6.
 - “Application of a CF of 6 to the measured infiltration rate of 126 gpd/ft² results in a design loading of 21 gpd/ft² (this equates to 2.8 ft/d or 85 cm/d). Kennedy/Jenks recommends that the facility be sized for the maximum month wet weather flowrate (MMF), which is projected to be 0.301 million gallons per day (MGD). An RI area of 14,300 ft² would be required to handle the MMF, at a dose rate of 21 gpd/ft².” (from the 16 August 2011 memo).
 - John Stormon thanked KJ for addressing his earlier comments; John said he can now recommend this approach. Dave Knight also thought that the correction factor of 6 was appropriate.
 - Tim said in the future, once the infiltration trench is in place, if it turns out a lower correction factor was needed, it just means that Yacolt could continue to use the trenches longer, and in the future when additional trenches are needed, they could be sized smaller (or fewer in number) in order to provide capacity to the end of the planning period (2029).
- Question from Tim: Can sidewall depth area be counted toward infiltration area? Initially Dave and John said they would look into the rules governing this, but later in the meeting Ecology said that KJ should not use sidewall depth area in its infiltration area calculations. **Follow-up: Ecology’s policy, similar to the Department of Health, is to only count the footprint of the bottom of the trench in estimating the infiltration area.**
- Question from Tim: Will sand filtration be necessary in order to reduce phosphorus concentration ([P]) by at least 50%, to between 0.1 and 1.0 mg/l, or can this reduction be achieved via land application? (The proposed Biolac WWTP with alum will reduce [P] to 2 mg/l.) The EPA reference discusses P removal via rapid infiltration. Dave said that he needs to do more research before answering this question. **Follow-up: Ecology does not have a groundwater criteria for phosphorus, and absent any evidence there is hydraulic continuity between this discharge and a receiving water that is being impacted by**

phosphorus, Ecology accepts the treatment system proposed as representing AKART for phosphorus at this site.

- Tim briefly discussed phasing. The group agreed that in the future when trenches are nearing capacity, Town should evaluate the need for more required trenches in a manner which incorporates operational performance of initial trenches.

Monitoring well locations, property acquisition

Chuck McDonald reviewed *Figure 2 - Proposed Subsurface Discharge and Monitoring Well Locations* from the 16 August 2011 memo.

- The Town has discussed buying 10 acres of a 20 acre parcel where the infiltration trenches and three monitoring wells would be located. (Actual wastewater treatment plant would be located in the central south area of town.)
- What is the width of the trenches? Chuck said they are currently planning a trench width of 6 – 8 ft with two individual feed pipes per trench, with 4-5 foot separation between pipes; however the actual design still will need to be designed.
- The property owner has given permission to install the monitoring wells, and appears to be a willing seller.
- Dave confirmed that what Ecology wants to see is the trenches located on a parcel owned by the Town, with three monitoring wells also on the parcel. Dave will review the layout further, but at this time he doesn't see any red flags. (But please note the later discussion regarding whether parcel should be acquired by Town before installing monitoring wells.) -- Follow-up: A bit later in the conversation – see next pg – it was mentioned that the upgradient monitoring well would be right next to the trench. This could be problematic since Ecology's overriding priority for an upgradient monitoring well is its utility in monitoring "background" conditions. If the well is too close to the infiltration trench, it will be mixed with the effluent since the wastewater spreads out laterally as it descends to the water table. This effect, called "mounding" requires the upgradient well to be placed outside of the anticipated mounding area. This may require the upgradient monitoring well to be placed on lands not owned by the City. This is acceptable if legal access is assured (e.g. legal easement or covenant attached to title). The ownership requirements for the infiltration gallery and downgradient "compliance" monitoring wells do not extend to the upgradient "background" monitoring well(s).
- John Stormon suggested that while the monitoring wells are being drilled, have someone present who can assess the results and change the location of the monitoring wells, if what is encountered on the ground does not fit KJ's model of what they expect to see. Chuck said that KJ's hydrogeologist will be there during drilling, and KJ will also check general groundwater information with Clark Public Utilities.
- Steve Prather asked the separation distance between the trenches and the nearest monitoring well. Chuck stated that the northernmost monitoring well is planned for only a couple of feet from the trench, and five feet from the apparent property line. The two southern monitoring wells are further from the trench(es) located near the south property line. Follow-up: Upgradient wells may be located on

property adjacent to the infiltration trenches, with proper legal agreements ensuring access. Locating the upgradient well(s) too close to the infiltration trench runs a risk of the wastewater mound effecting the background well water quality and thus value in collecting long term background water quality data. Down gradient wells on the other hand must be located at the point of compliance, which must be on the property.

- Steve asked about the upper screened interval. Chuck said he didn't know the specific design for the screens. John Stormon said Ecology is asking for screened interval at the top of the groundwater level. MW 4 screened level is from 39'-49' but the infiltration area is approximately 10' higher in elevation than MW 4.
- Steve asked if the well heights will be surveyed in. Dave said Ecology will require a survey.
- Steve asked about seals. John Stormon said the surface seal allowed in monitoring wells is more shallow than what is required for drinking water/resource protection wells. Follow-up: The well construction standards (Ch 173-160 WAC) for resource protection wells require an effective surface seal but do not set a minimum depth for the surface seal.
- Dave asked if KJ will provide Ecology with a site map of the parcel with topo data. Chuck said yes.
- John Peterson asked about the status of parcel ownership. Pete said the Town will be getting a letter of intent (to sell) from the property owner, and that the property owner has given permission to drill the monitoring wells. The Town Council will be presented with the recommendation for starting the appraisal process to determine the value of the land.
- John Peterson asked if it would be better to secure the land before drilling the monitoring wells, and when the Town anticipates actually owning the parcel. Pete said they are applying for Community Development Block Grant (CDBG) funding through Clark County and if received, the Town would get the funding after July 2012. If CDBG funding is not received the Town is looking into other sources of revenue that might result from charges received as a result of annexing the MCI property that is now in the Town's UGA. There was discussion related to development of necessary town codes; Jeff said he will work with the Town to provide code support.
- Greg clarified that Ecology is not requiring that the monitoring wells be drilled now (before securing property); we know it percs, so it is acceptable from Ecology's point of view to proceed with the Facilities Planning. Dave will double check to make sure that the proviso funding can pay for the monitoring wells on land not yet owned by the Town. (Later in the meeting Ecology stated that it is desirable to get the monitoring wells in as soon as possible, but also prudent to purchase the property first. John Peterson agreed from a risk management standpoint, and encouraged the Town to determine their comfort level with drilling monitoring wells before owning the parcel.) Followup: Ecology can fund monitoring wells that are necessary to determine background conditions regardless of their intended later use in assessing compliance. Such resource monitoring wells are not considered improvements to private property, which would make them ineligible for reimbursement under Ecology administered

funding programs. Such wells are considered part of necessary studies of background and baseline conditions. Gathering monitoring well data prior to purchase of a property is prudent as it confirms the viability of purchase of a particular site, which is a far greater expense. While many funding rules apply to all expenses, were Ecology to unilaterally prohibit funding monitoring wells used to evaluate potential sites, municipalities would be forced to purchase prospective sites which they later find unsuitable. Such a policy would not serve the public interest, and accordingly is not Ecology's policy.

- John Peterson said that the proviso funding deadline has been extended to December 2013 (the contract has also been extended, but not that long). In other words, Yacolt and Kennedy/Jenks don't have to complete the Facilities Plan by December 2011, but the Town plans to complete it soon thereafter. John Peterson said that ~\$250,000 has been spent; ~\$150,000 is remaining.

Collection system

We reviewed the *Preliminary Vacuum Collection System Layout* map (provided by vendor Airvac) and the *Yacolt General Topography and Zoning Map*.

- Zoning map - The Town is exploring the possibility of allowing new developments to build community drainfields (prior to installation of the vacuum collection and treatment system), and having the Town create a sewer utility to run such systems. After some discussion, the group agreed that this is a decision to be made by the Town, and Ecology would not be the approval authority (if it is a LOSS system, Health would be the approval authority).
- Collection system – Tim gave an overview of the Airvac proposal. Tim will send a more detailed collection system technical memo, including cost estimates, to Ecology soon following review of the updated technical information received.

Followup: Ecology relies on the accuracy of General Sewer Plans. Regardless of whether a LOSS is permitted by the Health Departments, Ecology expects municipalities to describe their plans for construction and integration (over the planning horizon) of ALL SEWER FACILITIES in their General Sewer Plan. Cities must update their General Sewer Plan if conditions change and facilities which the City did not describe in that plan (such as a LOSS) are later desired.

Project schedule

We reviewed the *Town of Yacolt: Updated Project Schedule for Facility Plan (8/12/11)*.

- Task 1.6 - Yacolt/KJ expect to submit the draft Facilities Plan to Ecology in November 2011. Final Facilities Plan development expected in Spring 2012. Greg stated it would be a 60-90 day review period.
- Task 4.3 – Land acquisition support – KJ's role only included looking at sites and developing a legal description.
- Task 4.4 – A sub-consultant will be completing the financial evaluation in the FP. Cathi Read offered to review the language regarding state and federal funding programs.

Next conference call - Thursday, September 22, 1:30 – 3:30 pm. Cathi will send a meeting invitation and call-in instructions.