

Ecology Expected to Address Costly Process of Nutrient Removal from Wastewater in Western Washington in 5-10 Years

The question of what impacts Puget Sound water quality the most was revisited again recently when Burien City Council members held a final discussion before adopting their updated Shoreline Master Program.

All Washington cities and counties have been required by the Legislature to update their local Shoreline Master Programs under the state Shoreline Management Act.

Burien's marine shoreline homeowners had lobbied successfully to retain an existing 20-foot setback from the ordinary high water mark along the Puget Sound waterfront. A new 65-foot buffer and setback had been proposed for this long-developed residential area.

Council members who supported this action reiterated that the real threat to the Sound from within the city comes from surface water runoff – something the shoreline regulations don't address.

Councilwoman and WASWD Board member Kathy Keene noted, however, that surface water is the responsibility not of the city, but of Southwest Suburban Sewer District.

The City Council's concern had nothing to do with the quality of Southwest Suburban's secondary treatment process. They were focused on the fact that heavy metals are not removed from wastewater during secondary treatment.

But, Southwest Suburban Sewer District General Manager Ron Hall emphasized later, heavy metals in wastewater "have very little impact on Burien or Southwest Suburban Sewer District. That's industrial" – and the city has very little industrial base. Furthermore, that surface water is not the responsibility of the District. Southwest Suburban Sewer District does not treat surface water. The District treats residential and commercial wastewater only.

The Department of Ecology requires large industrial production companies to treat their own wastewater for heavy metals prior to discharging it into a sewer system, Hall said, although secondary treatment plants in King and Pierce County do get some metals from industrial wastes.

Treatment plants like Southwest Suburban's that serve smaller communities like Burien don't get wastewater with heavy metals in wastewater. "Mostly it's residential neighborhood waste and some commercial like restaurants, laundromats, and grocery stores," he said.

Nutrient Removal

Having addressed local political concerns about secondary treatment in small, non-industrial communities, Hall turned to "the big thing" in wastewater treatment "that Ecology will be addressing within the next 5 to 10 years – nutrient removal."

Although nutrient removal is currently required in Washington for secondary treatment plants that discharge into fresh water, Ecology only recently started looking at nutrient discharge into salt water as well, he said.

The agency "is now requiring plants from Olympia to Edmonds to start reporting nutrient levels – phosphorus and nitrogen – in their effluents. Ecology has not set discharge standards yet, but is gathering information for future regulations."

Treatment plant operators don't know yet how much Ecology – and the EPA – may eventually require them to reduce nutrient levels in discharged water.

"But all of us in the wastewater business are nervous because it's going to be really expensive," Hall said. "My nearest guess is that for the two plants our size it will cost between \$1 million and \$20 million per plant" to upgrade the existing treatment facility – "depending on the requirements imposed by Ecology."

To date, only Budd Inlet, south Hood Canal and Penn Cove "have been identified as water bodies that receive excess nutrients (nitrogen and phosphorous) that stimulate excessive plant growth (algae and submerged aquatic vegetation)."

This "leaves adjacent waters with "extremely low" dissolved oxygen levels "that can stress or kill fish," especially in deeper water, Hall continued.

Ecology's discharge permit requirements for the three treatment plants at these locations "are much more stringent than elsewhere in Puget Sound" due to the low dissolved oxygen level. "Nutrient-rich inputs into Puget Sound include stormwater runoff, industrial waste discharges, failing septic systems, tributary inflows and treated wastewater effluent."

"It's important to remember that stormwater runoff is not treated through the majority of the Puget Sound

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region," he noted. "Anything that ends up on a roadway, parking lot, driveway, etc., will eventually get washed down into a stormwater catch basin and then straight into Puget Sound."

According to Ecology, the agency is developing a scale model for the entire Puget Sound estuary system to better understand the processes that affect dissolved oxygen and to help determine what level of nutrient reductions may be necessary to reduce or eliminate dissolved oxygen in sensitive areas.

Puget Sound studies currently underway could affect future discharge permits for treatment plants. An economic and technology study will evaluate the costs and benefits of available technologies that can reduce nitrogen and phosphorus in treated wastewater.

For more information on water quality protection in Puget Sound, including plans to reduce discharge nutrient levels, go to http://www.ecy.wa.gov/puget_sound/index.html.

Board replacement

The Washington Association of Sewer & Water Districts extends sincere thanks to Ray Witten, a Commissioner with Douglas County Sewer District No. 1, for his time and effort for almost two terms on the WASWD Board of Directors. Ray resigned from the board last month. Ray will be missed on the Board.



Ray Witten

The Association now welcomes to the board his replacement. Norm was elected to the Board at the Annual Meeting in September. He was asked to fill in the remaining term of Ray Witten for the balance of the



Norm Harker

calendar year.

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