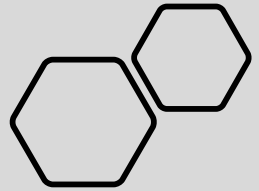
WTD Nutrient Management Strategy

Near term approach for long term results



King County

Department of Natural Resources and Parks

Wastewater Treatment Division

Nutrient Refresher

- Northwest Environmental Advocates filed a petition for rulemaking that would require nutrient limits and tertiary treatment by wastewater treatment plants

- Ecology denied petition proposed by Northwest Environmental Advocates, but committed to the following:
  - Set nutrient loading limits at current levels for all permitted dischargers
  - Require facilities to begin planning efforts to evaluate treatment implications of different nitrogen targets
  - For facilities capable of nitrogen removal, amend NPDES permit to include limits commensurate with their treatment capability

- To deliver on the commitments, Ecology began development of a Puget Sound Nutrient General Permit
  - Ecology formed the PSNGP Advisory Committee
  - 7 meetings beginning in April 2020

Issues

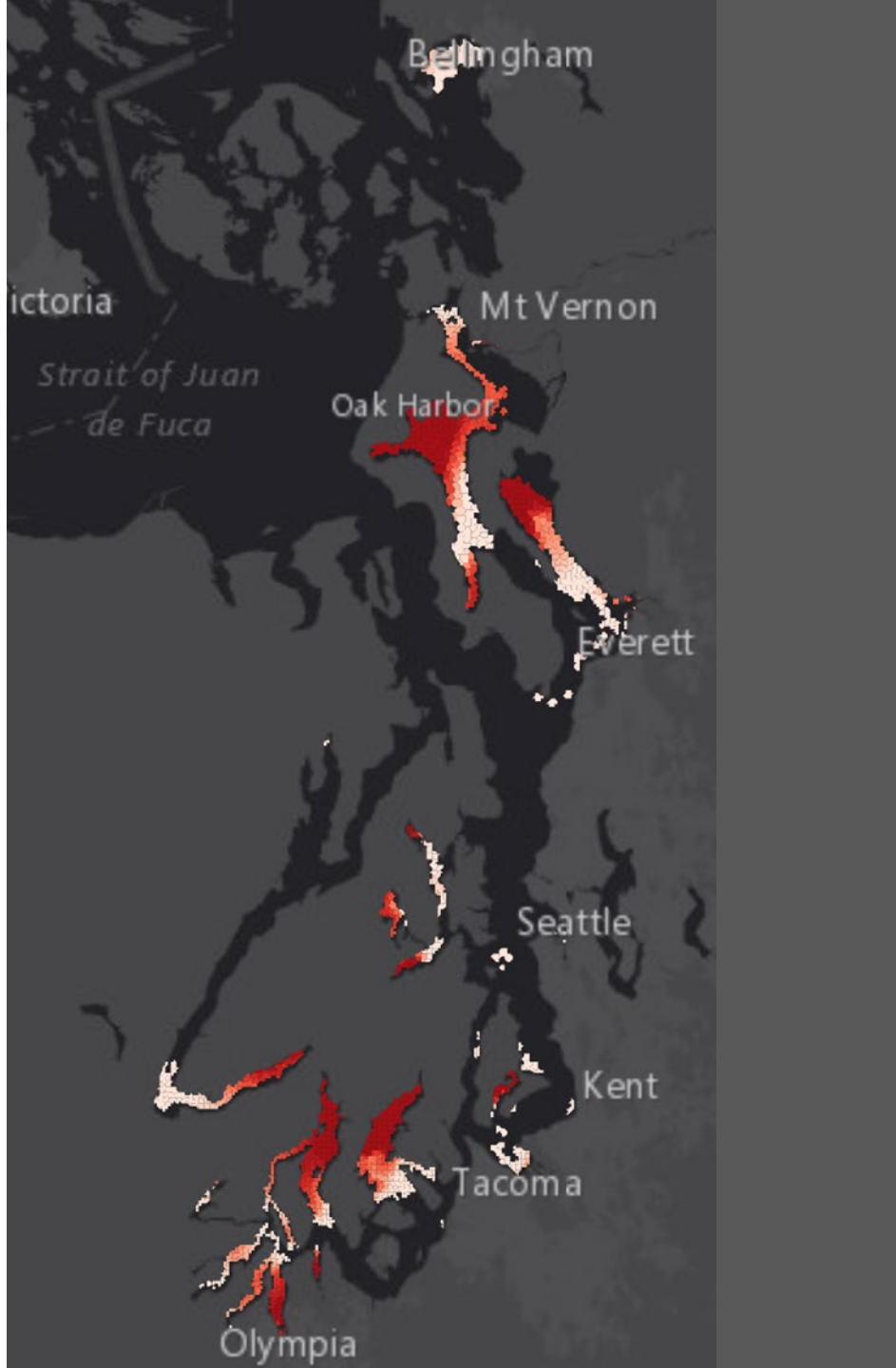
Modeling/Data: Not complete and there is disagreement between scientists and regulated entities and Ecology regarding accuracy. Will improvements be seen?

Timing: Ecology caps on nutrients by 2021. Total TIN limits established by 2022. Upcoming South Plant and West Point NPDES permits to include caps fall-2021

Stakeholder/Public Involvement: There has been limited interaction with key stakeholders during this process. Ecology is moving quickly. Public does not yet understand cost estimates

Cost: Removing nitrogen is costly. How are the environmental, equity and economic costs balanced? Anticipate billions over the next two decades

Implementation: Most facilities were not built to remove nitrogen and interim caps could limit growth.



Status of Nitrogen Removal

Ecology

1. Puget Sound Nutrient General Permit
2. Puget Sound Nutrient Management Plan

King County

1. Nutrient Removal Study (presented 9/20)
2. Participation in the Advisory Committee
3. Review of Science
4. Water Quality Trading

Puget Sound Nutrients General Permit – Advisory Committee

Membership

5 Caucuses

- Federal (1)
- State (2)
- Tribal (1)
- Environmental (2)
- Utility (7)

Timeline

April 15, 2020 – General Permit-Advisory Committee kick-off

- Monthly meetings there after
- Each meeting focused on a topic
  - Cap calculation - May
  - Optimization – June
  - Planning - July
  - Monitoring - Aug

September 30, 2020 – finalized draft recommendation

October 21, 2020 – reviewed and adopted final recommendations

Advisory Committee Recommendations

Key Content

- Conduct a regional study to support optimization and long-term planning
- Collect the high-quality data needed for multiple purposes
- A target load for each plant will trigger additional actions if exceeded
- Require optimization at all plants
- Require additional actions if the trigger is reached
- Pursue these actions in parallel with Puget Sound Nutrient General Permit issuance and implementation

Overall Takeaways

Agreements

1. This effort will require federal or state funding
2. Ecology needs to be sufficiently staffed to implement a new permit
3. Permit requirements should work in coordination with Comprehensive land use planning
4. Each facility should develop a set of solutions to reduce nitrogen loads that would work for their processes

Disagreement

1. Timeline – this process has been rushed and facilities need time to plan/cost-out/implement
2. Science/monitoring – more data needs collected, and the science completed
3. Loading limits – need sufficient time for planning, timing, corrective actions
4. Prioritization – implementing loading limits on larger plants first does not necessarily address those areas of Puget Sound with the lowest dissolved oxygen

Department of Ecology Nutrient Management Plan

Intent: to describe how to reduce the different human sources of nutrients in Puget Sound.

Goal: restore marine water quality to meet dissolved oxygen standards

Timeline: draft open for public comment in 2022

Development and Vote on Recommendations

The recommendations document was developed by Ecology and presented to the committee at the third meeting. It was a collection of meeting summaries, comment, and opinions.

Part of the Advisory Committee responsibility, was to vote on the recommendations made by the group. Ecology stated that we did not need to agree on the individual recommendations but did need to agree on the overall document.

The Advisory Committee members were asked to vote on the acceptance of the recommendations document at the final meeting.

King County WTD voted Nay

- The document did not reflect recommendations but rather a collected summary of the meetings
- The document did not accurately reflect perspectives or alternate proposals made by caucus members

State of the Science

- The basic theory is that increases in nitrogen will increase algal blooms and when those algal blooms die off it will deplete dissolved oxygen in the water and harm wildlife.
- Shallow embayments with less circulation are impacted more than the main channel
- Other impacts include temperature, sunlight, climate change
- 88% of nitrogen in Puget Sound comes from the ocean
- Ecology is relying on a model because it is hard to measure small changes in such a complex system

Further Engagement with Science

1

Engaging Puget Sound Institute, Salish Sea Modeling Center and UW

2

Target uncertainties such as historic conditions, climate change, temperatures and natural influxes

3

Develop agreement between King County and Puget Sound Institute to further fund necessary science

Working with The Freshwater Trust

- Develop and propose core permit language to Ecology to authorize trading as a compliance option
- Analysis of regulatory requirements and basis for point source and stormwater trading
- Evaluation of scientific and technical trading alternatives
- Establish crediting methodology and credit supply analysis
- Outreach to engage stakeholders
- Pathway for trading with unregulated nonpoint sources
- Trading Framework for Puget Sound

The completion of the Trading Framework is due in 2021 with work continuing through each permit cycle until a trading program is fully established.

Next steps..

Further exploration:

- Optimization planning
- Water Quality Trading - develop a regional approach to water quality improvement
- Expand the science – target gaps and uncertainties

Continue:

- Working with the universities and regional partners to enhance our scientific understanding
- Coordination with Clean Water Healthy Habitat and Clean Water Plan to build framework for Water Quality Trading in partnership with The Freshwater Trust