



# PSNGP: A Development Review and Early Implementation



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Water Quality Program - SWRO

ACWA Nutrients Workshop  
May 1, 2023

# Today's topics

- 1 The nutrient problem
- 2 Ecology's strategy to address nutrient pollution
- 3 Puget Sound Nutrient General Permit
- 4 Q&A

# The Nutrient Problem



# The nutrient problem in Puget Sound

## Unhealthy Puget Sound

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Low dissolved oxygen

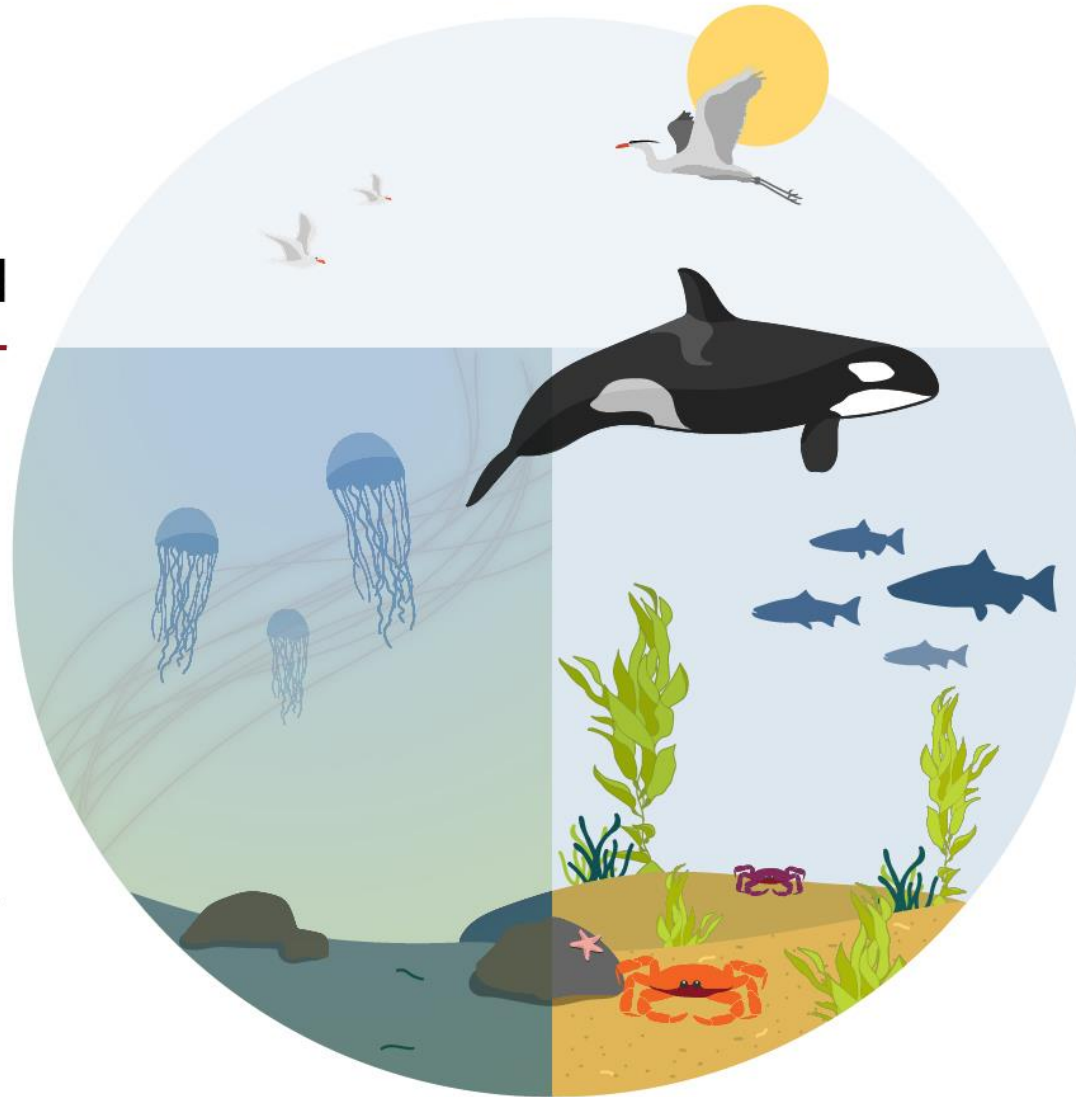
Acidified water

Low biodiversity

Non-nutritious food web

Nuisance algae

Less healthy food for salmon and orcas



## Healthy Puget Sound

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Natural dissolved oxygen levels

High Biodiversity

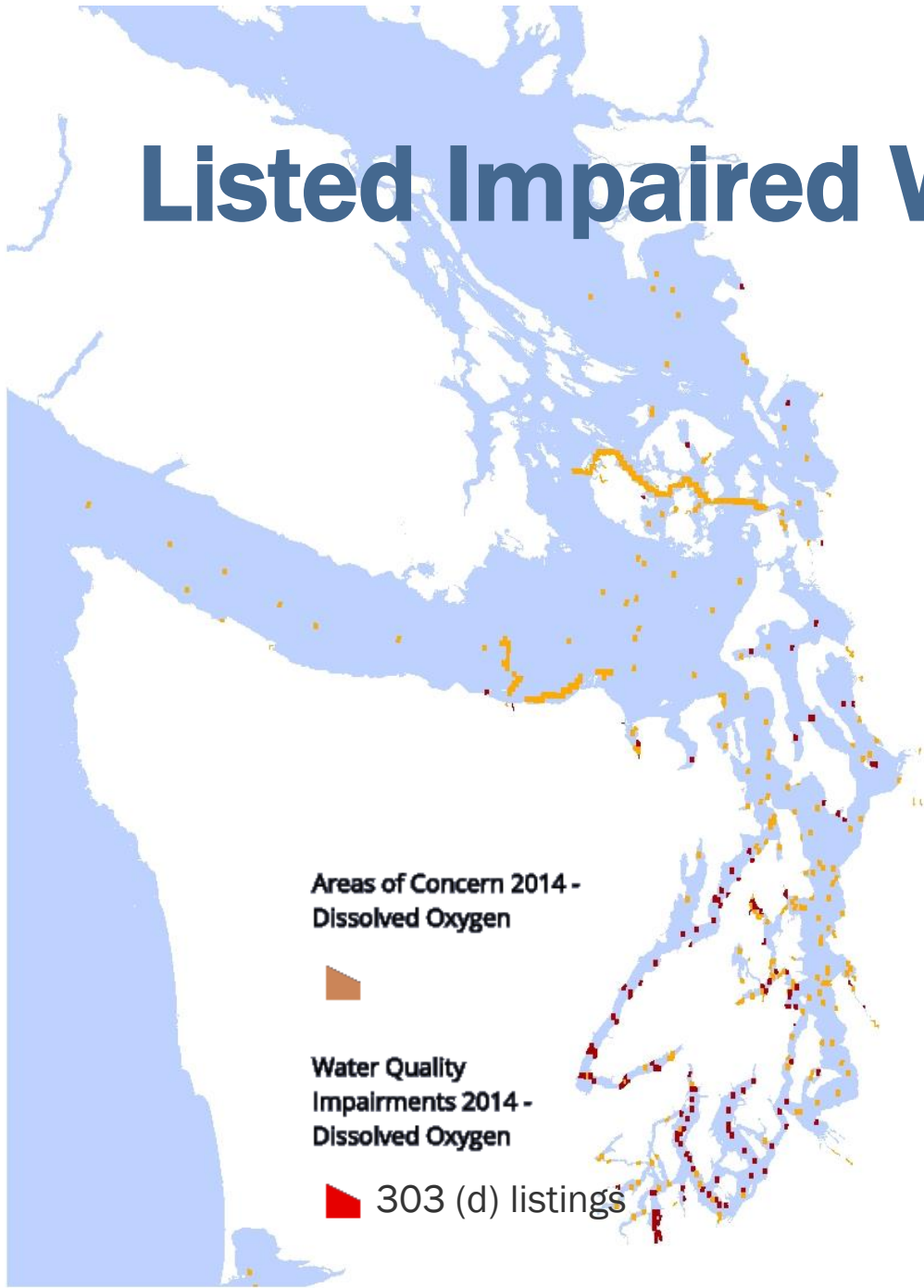
Nutrient balance

Nutritious food web

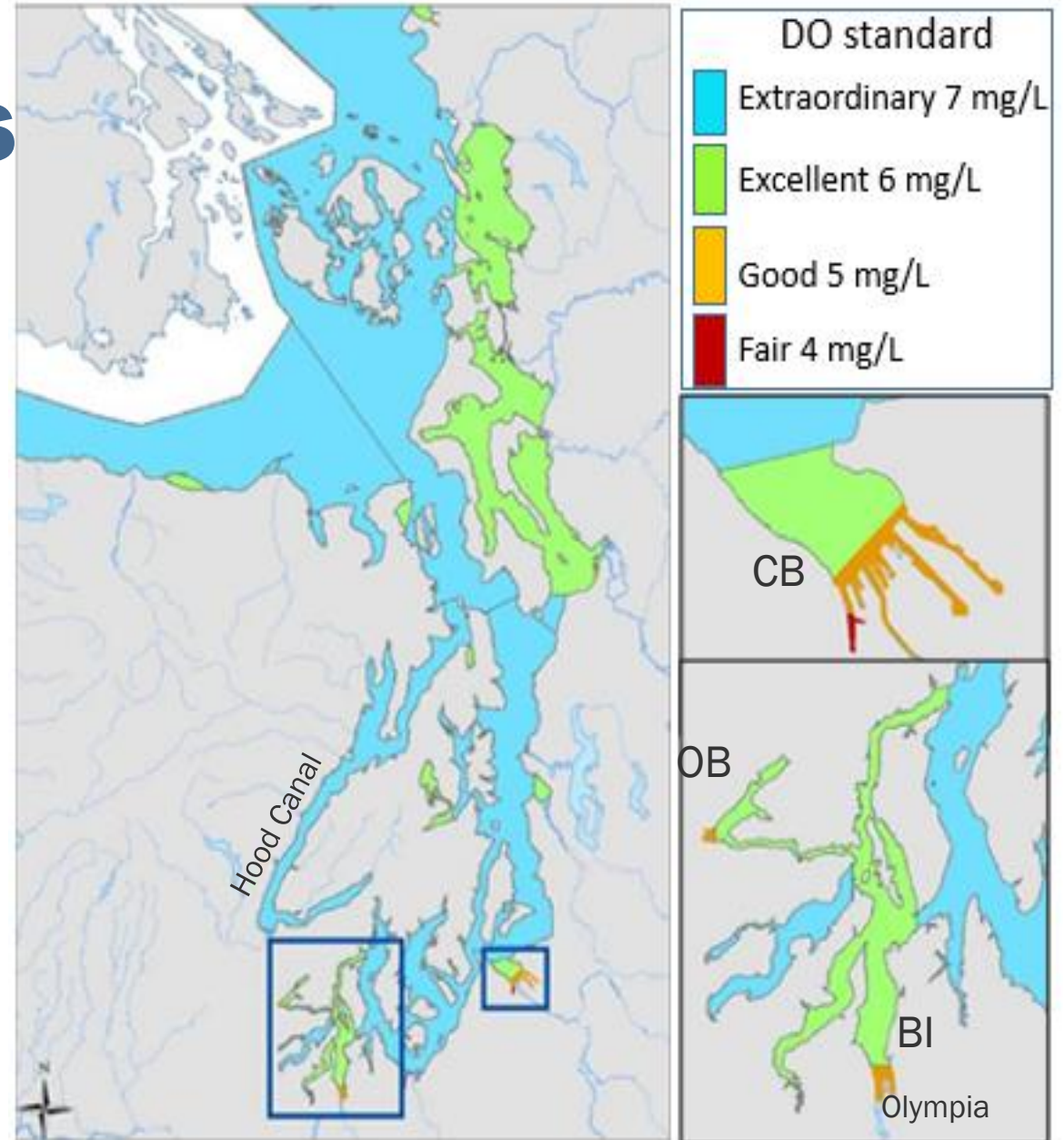
Healthy nearshore habitats

Thriving fisheries

# Listed Impaired Waters



## Numeric Criteria for DO: WAC 173-201A



# Our strategy to reduce nutrient pollution

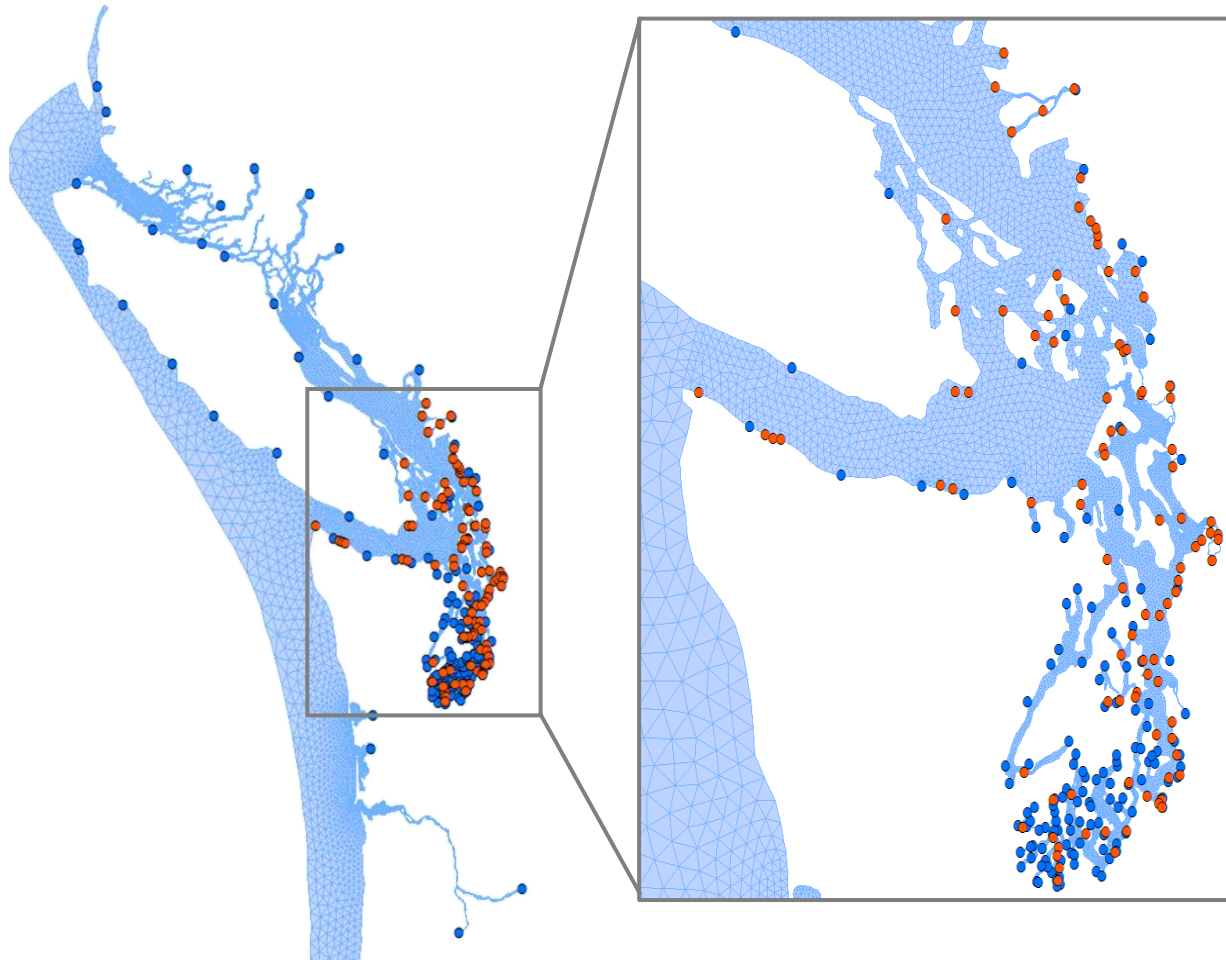
- Prioritize where we can make the largest, fastest, and most efficient reductions
- Identify other areas where we need answers and evaluate with the model
- Define the levels of reductions needed to achieve compliance with water quality standards



# Puget Sound Nutrient General Permit

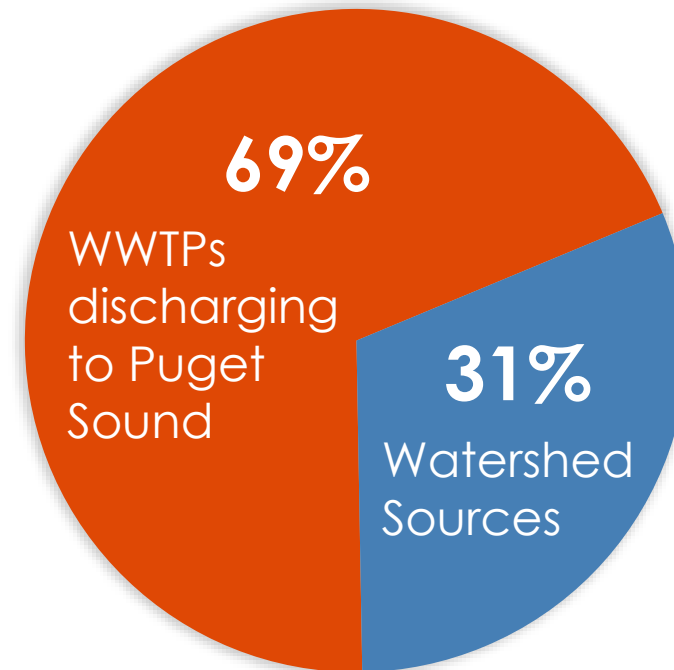


# Documenting Reasonable Potential



● **Point-Sources  
(incl. WWTPs)**

● **Rivers  
(Watersheds)**

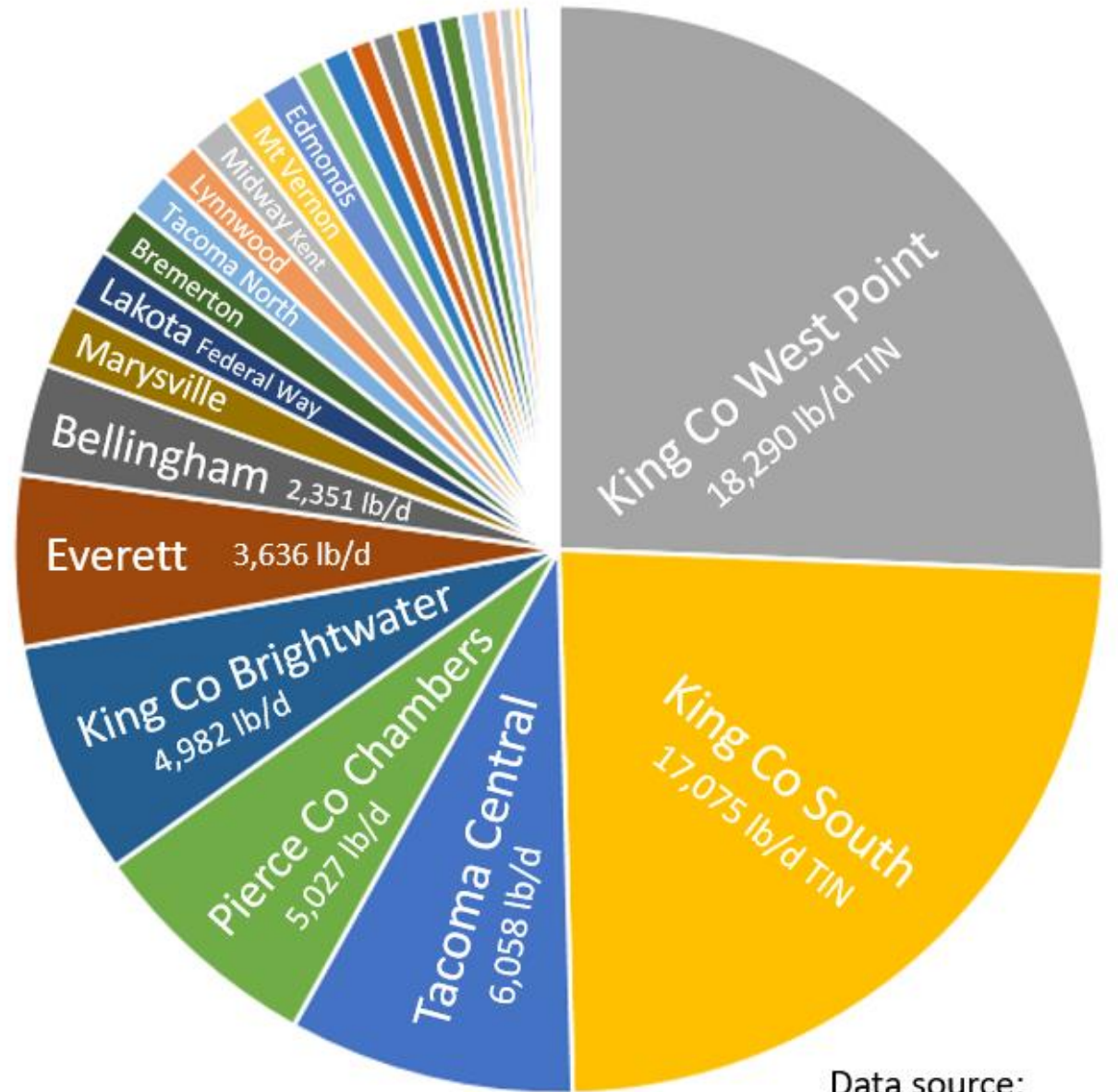


January 2019 Bounding Scenarios Report  
(Publication No. 19-03-001)



# Nitrogen coming from wastewater treatment plants to Puget Sound

WWTPs serving the most populated areas are generally the biggest source of excess nitrogen.



Data source:  
WWTPs' 2019 discharge  
monitoring reports

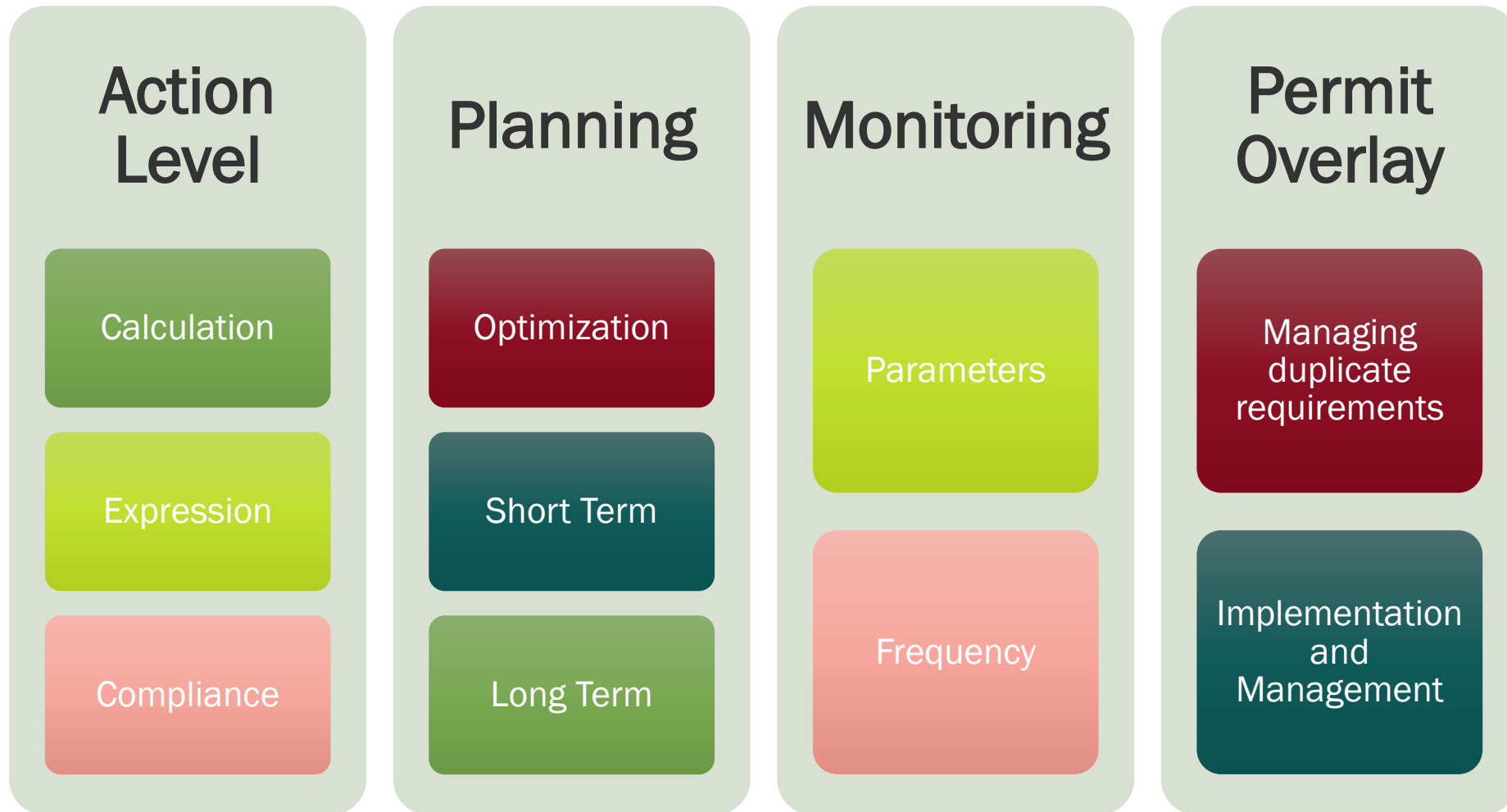
# Why a General Permit

- Single, coordinated public engagement process
- Shared foundation for WWTP communities to work together to achieve nutrient reduction
- Opportunity to collect consistent WWTP data
- Common 5-year cycle for public process and reissuance

# General Permit Development Process



# Advisory Committee Input



# PSNGP AC Summary

## Agreements

- All plants must optimize
- Consistent data collection
- Conduct a regional nutrient reduction study

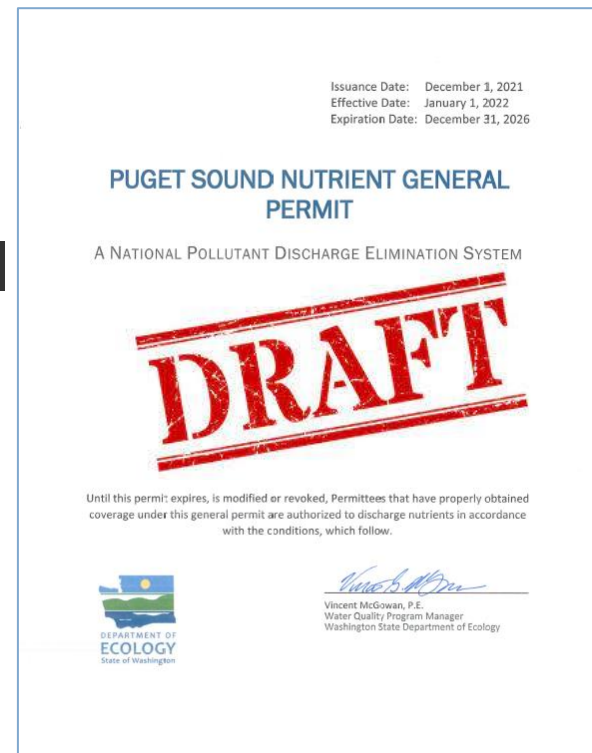
## Disagreements

- Setting a target load to trigger additional actions
- How to accommodate growth
- Early planning using “bookends”



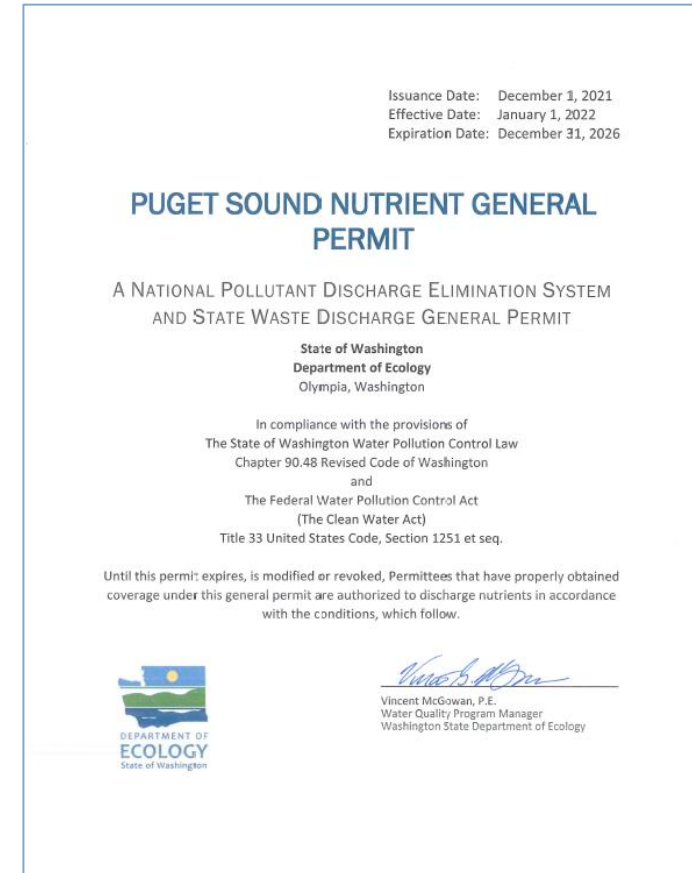
# Comments from the draft permit (June 2021)

- Over 2,100 individual comments on the draft permit
- Mixed support for the general permit as proposed
- Concern for our pace – both too fast and too slow
- Trying to do too much vs. not going far enough
- Focus only on the dominant plants vs. reductions for all
  - Need for a 3<sup>rd</sup> plant category
- Concerns over the science

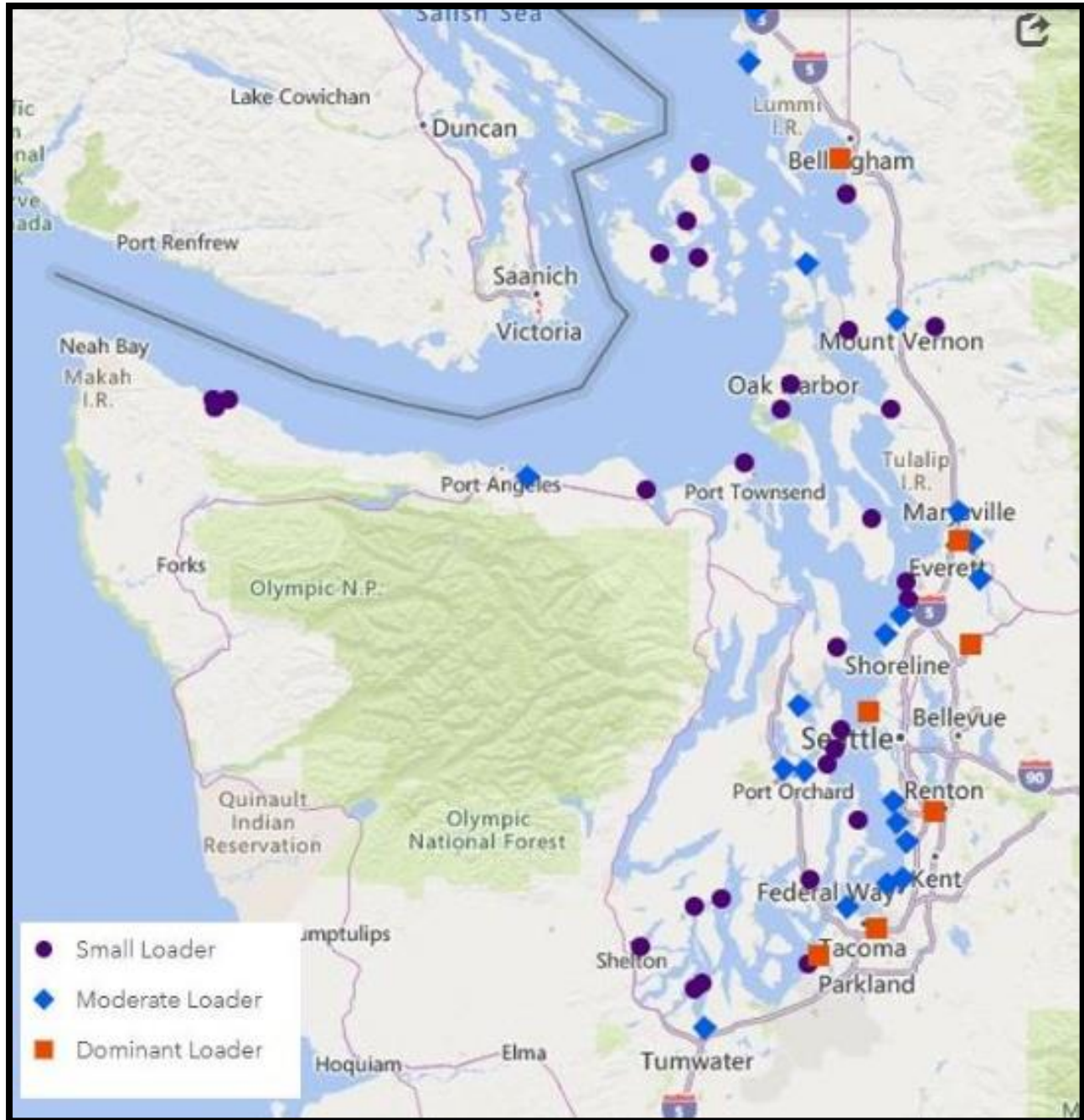


# The Puget Sound Nutrient General Permit

- Issued December 1, 2021 and became effective January 1, 2022
- Direct discharges from WWTPs to the Puget Sound
- Splits dischargers into 3 categories
  - Small
  - Moderate
  - Dominant
- Permit has been Appealed



# PSNGP Coverage Locations



# Puget Sound Nutrient General Permit: Requirements for the first five years



**Optimize** current treatment processes to enhance nutrient reductions



**Monitor** raw wastewater and the plant's discharge to evaluate nutrient reductions and optimization progress



**Planning** begins or continues for future plant upgrades to control nutrients



**Grant funding** from Ecology will be available for optimization and planning.



# Narrative WQ Based Effluent Limits

40 CFR 122.44(k)

	DOMINANT LOADERS (7)	MODERATE LOADERS (20)	SMALL LOADERS (31)
MONITORING	Monitor Nitrogen 2/week	Monitor Nitrogen 1/week	Monitor Nitrogen 2/month
OPTIMIZATION	Annual Report to document adaptive management.  + Action Level (lbs/year)	Annual Report to document adaptive management  + Action Level (lbs/year)	Single report (year 4) documenting adaptive management
PLANNING	AKART Analysis 10 mg/L TIN, annually 3 mg/L TIN, seasonally	AKART Analysis 10 mg/L TIN, annually 3 mg/L TIN, seasonally	AKART Analysis 10 mg/L TIN, annually No increase in loading

# Environmental Justice Requirements

Demographic Analysis

Income Assessment

Affordability Assessment

Consideration of Alternative Rate Structures

Improvements for Communities Identified in the Demographic Analysis

# There are options for WWTPs to control nutrients

The permit encourages communities to look at proven approaches and innovative opportunities to reduce nutrient loading and improve operating efficiency:

- Side stream treatment
- Water conservation
- Reduced inflow and infiltration
- Reclaimed water production
- Pre-treatment and decentralization
- Septage handling practices



# Permit Appeals

- Appeals received from both sides
  - Group of dischargers (8)
  - Tribe + WA Conservation Action
- Agreed to a stipulated stay
- Concurrent APA Appeal in Superior Court



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**BEFORE THE POLLUTION CONTROL HEARINGS BOARD  
IN AND FOR THE STATE OF WASHINGTON**

PUGET SOUNDKEEPER ALLIANCE, KING COUNTY, CITY OF TACOMA, WASHINGTON ENVIRONMENTAL COUNCIL, SUQUAMISH TRIBE, CITY OF EVERETT, CITY OF BREMERTON, BIRCH BAY WATER AND SEWER DISTRICT, ALDERWOOD WATER & WASTEWATER DISTRICT, PIERCE COUNTY, and CITY OF EDMONDS,	PCHB NO. 21-082c <b>AMENDED STIPULATION FOR PARTIAL STAY OF PUGET SOUND NUTRIENT GENERAL PERMIT</b>
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Appellants,

v.

STATE OF WASHINGTON,  
DEPARTMENT OF ECOLOGY,

Respondent.

In this consolidated matter King County and City of Tacoma (Tacoma) filed appeals of the Puget Sound Nutrient General Permit (PSNGP) issued by the Department of Ecology (Ecology) on December 1, 2021. King County and Tacoma additionally filed separate motions to stay the PSNGP under RCW 43.21B.320. The cities of Bremerton, Edmonds, Everett, the Birch Bay Water and Sewer District, and Alderwood Water & Wastewater District separately filed notices of appeal that included requests to stay the PSNGP. Pierce County by participating in this stipulation also requests a partial stay of the permit as set forth in this stipulation. King

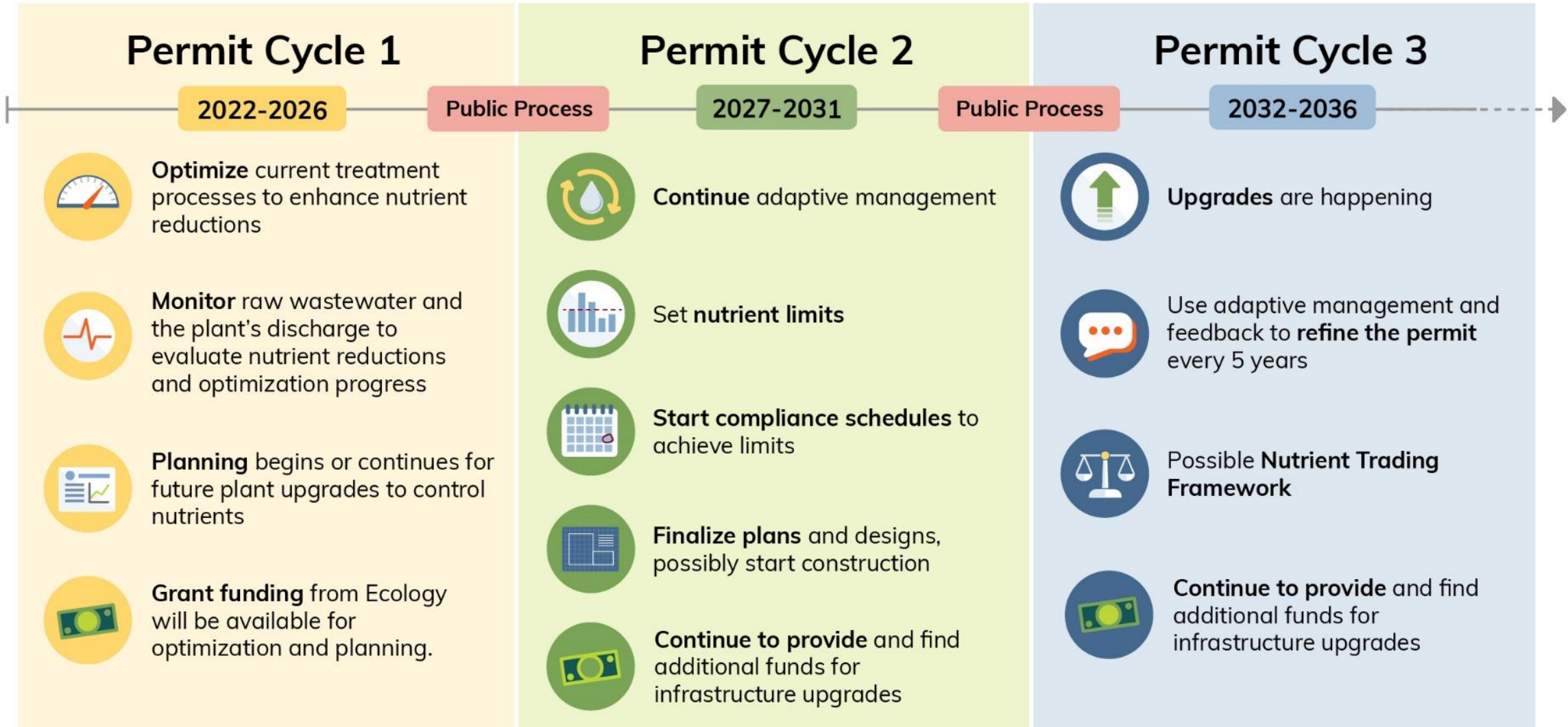
STIPULATION FOR PARTIAL STAY OF PSNGP 1

**Tupper Mack Wells PLLC**  
2025 First Avenue, Suite 1100  
Seattle, Washington 98121  
TEL 206.493.2300 FAX 206.493.2310

# Permit Implementation - Year 1

- Partnered with Association of WA Cities
  - Assist with annual report (M)
  - Assist in review/selection of optimization strategies (S)
- No reported action level exceedances
- 3 WWTPs achieved < 10mg/L TIN
- ~\$8.3m dollars provided to support permit implementation
- Most plants were able to identify an optimization strategy

# Puget Sound Nutrient General Permit Cycles



**Questions?**



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