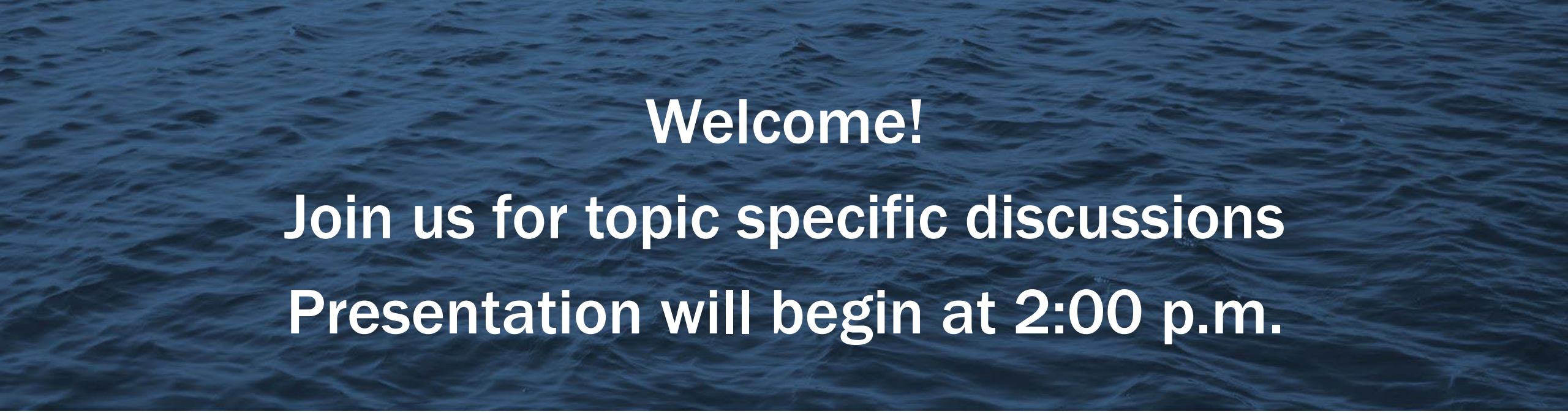


Welcome!

Join us for topic specific discussions

Presentation will begin at 2:00 p.m.

Table Topics

- Nutrient Reduction Plan
- Marine Point Sources
- Watersheds
- Salish Sea Model & other technical tools
- Other Information

DEPARTMENT OF ECOLOGY
State of Washington

Puget Sound Nutrient Reduction Plan

Jeremy Reiman

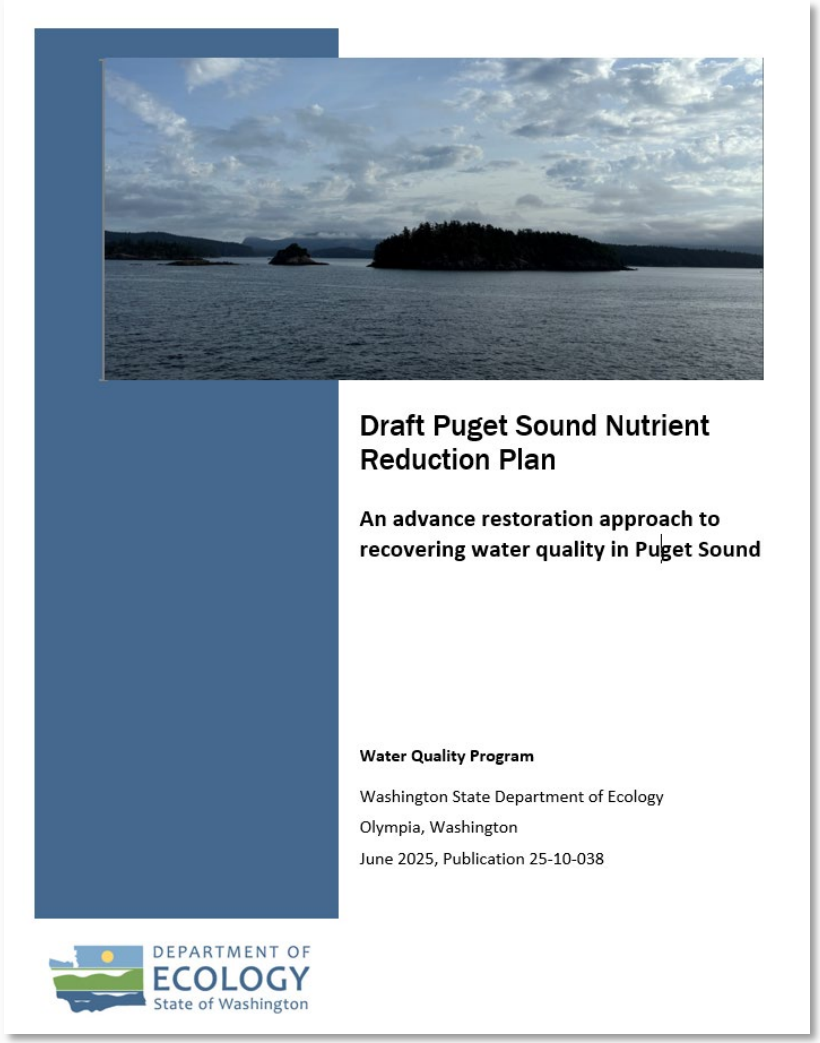
Table of contents

Puget Sound Nutrient Reduction Plan

- Our approach to reduce nutrient pollution → meet DO water quality standards by 2050

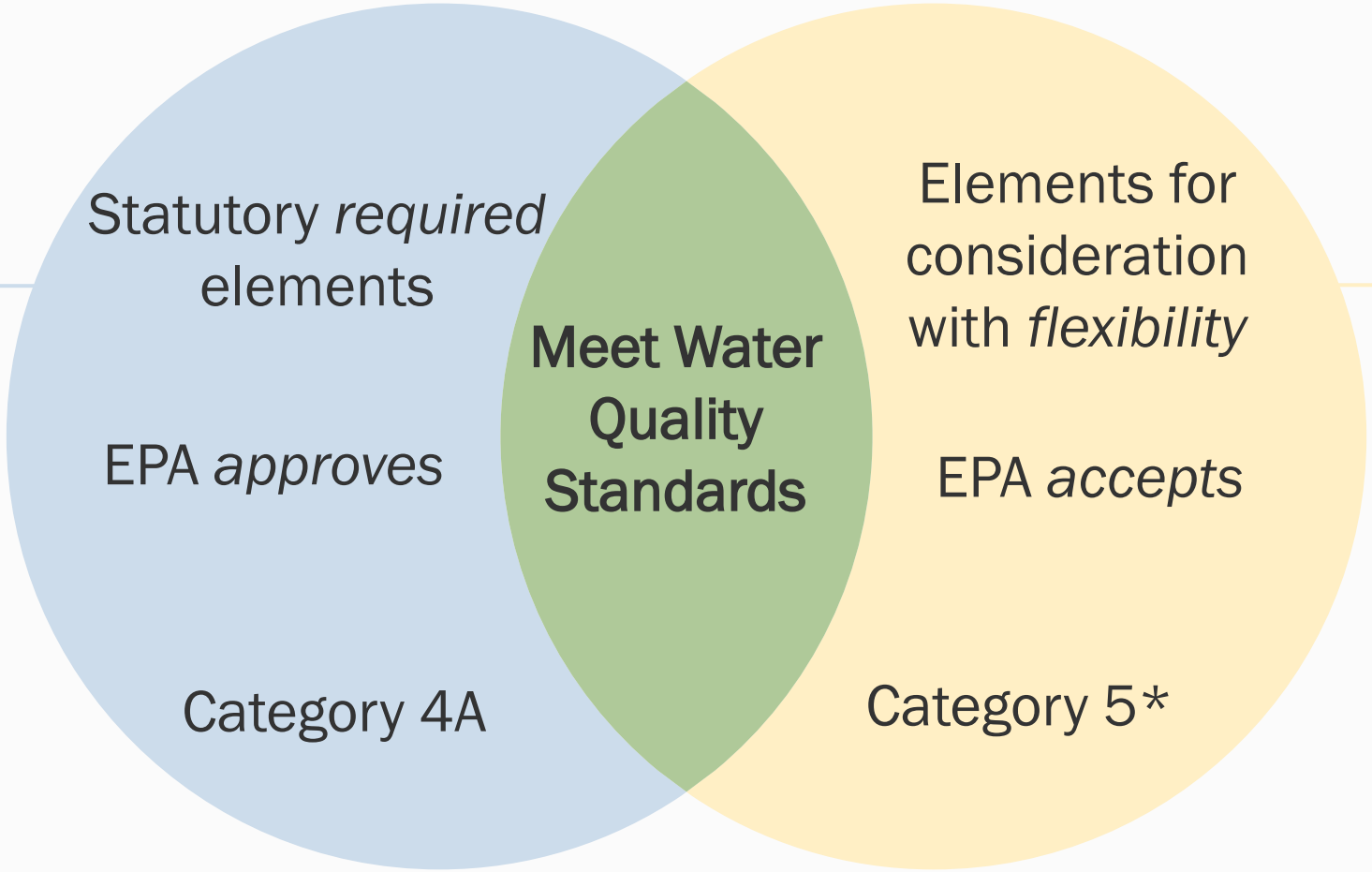
- Key Components
  - Targets for nutrient sources
  - Implementation tools
  - Accountability measures

- Advance Restoration Plan (ARP)



TMDL vs. ARP Comparison

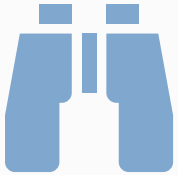
Total Maximum Daily Load (TMDL)



Advance Restoration Plan (ARP)

What's in the plan?

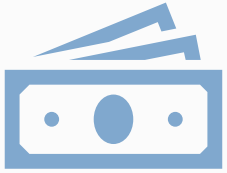
Background



Scope

Nitrogen Targets

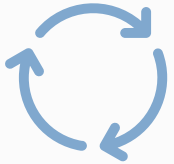
Implementation



Financial Assistance

Schedule & Milestones

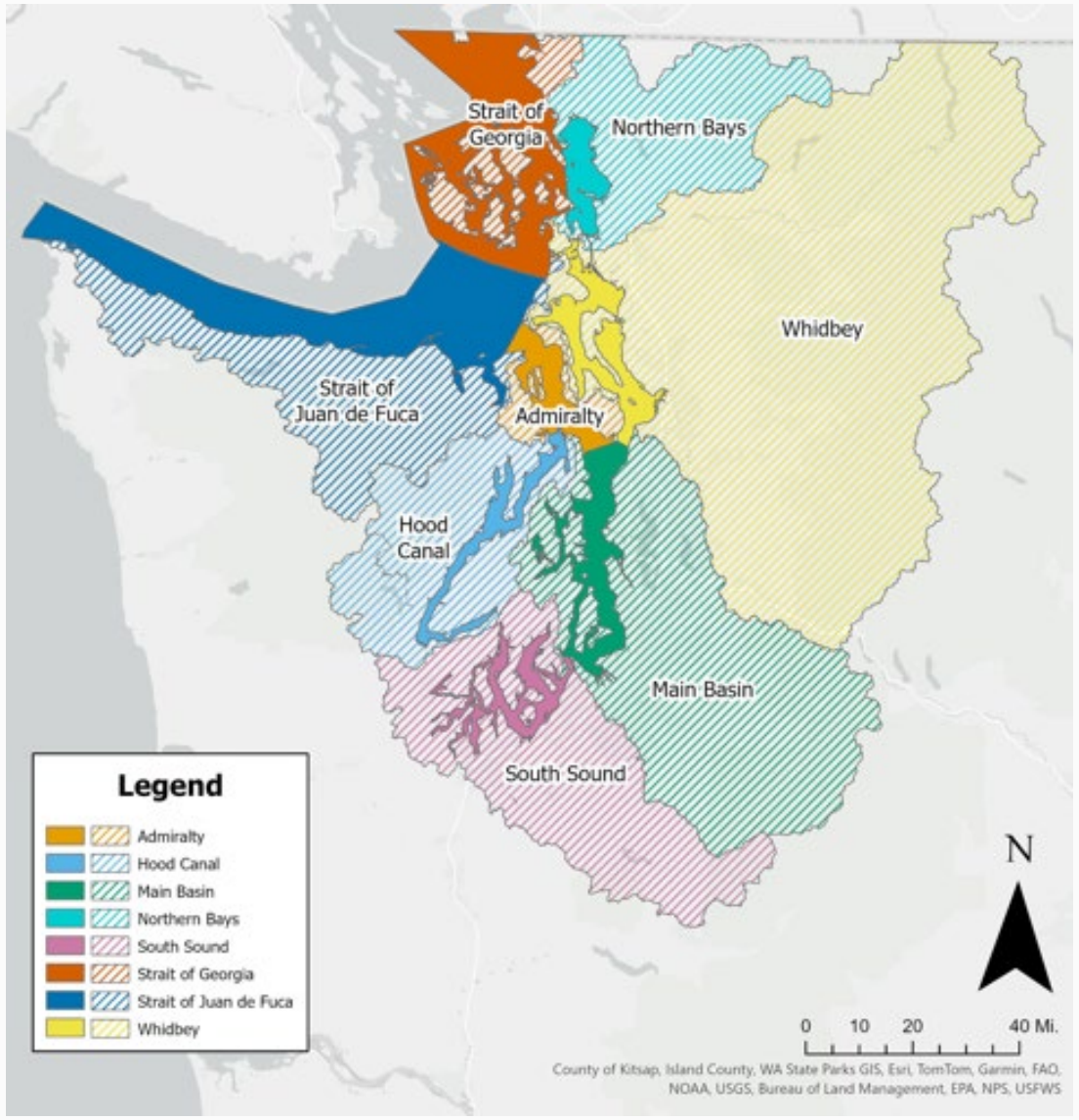
Monitoring



Adaptive Management

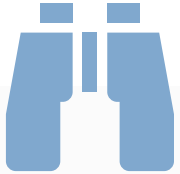
Scope of Plan

- Addresses all DO 303(d) (Cat 5) impairments in Puget Sound
- 8 basins
- Sets nutrient targets for:
  - Marine Point Sources
  - Watersheds
- No targets assigned to Canadian or open ocean sources



Puget Sound basins

Two groups of targets



Marine Point Sources

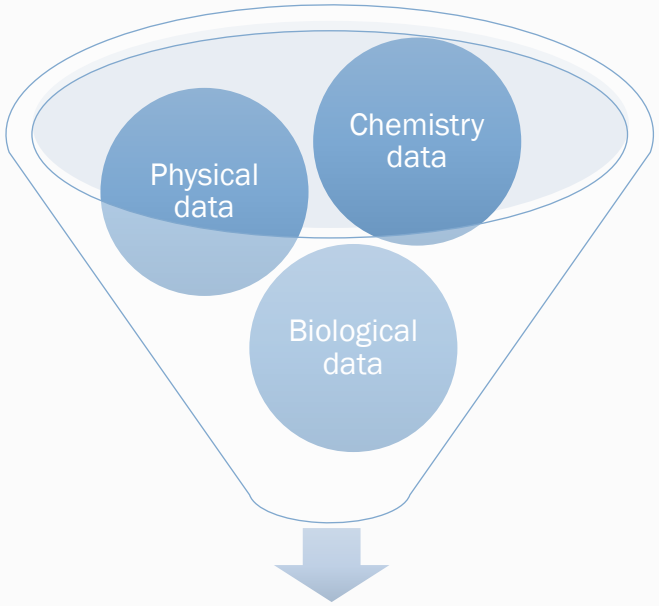
- Municipal, Private, Federal, Tribal WWTPs
- Industrial Facilities

Watersheds

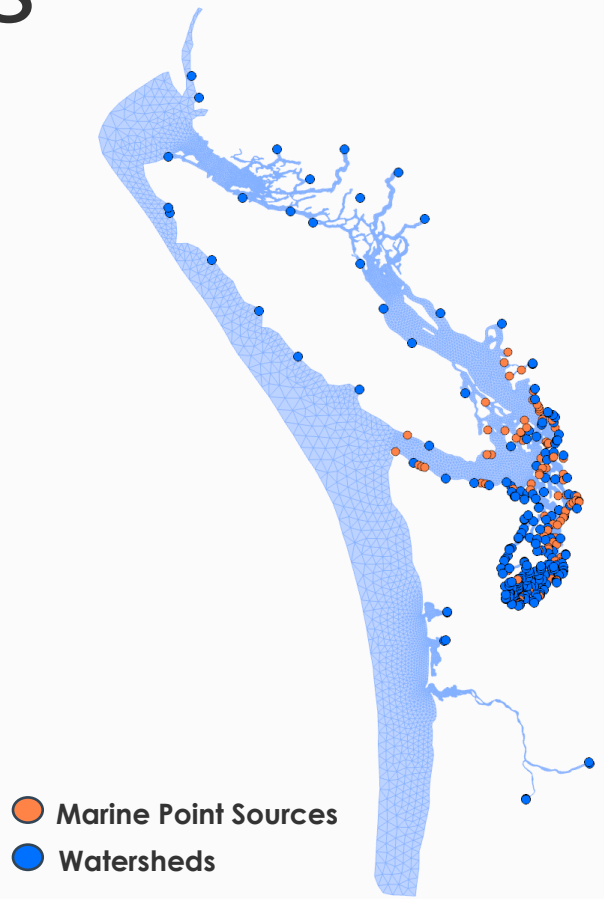
- Rivers/streams
  - Point and nonpoint sources
  - Shoreline stormwater point sources
  - Diffuse shoreline pollution (example: septic systems)

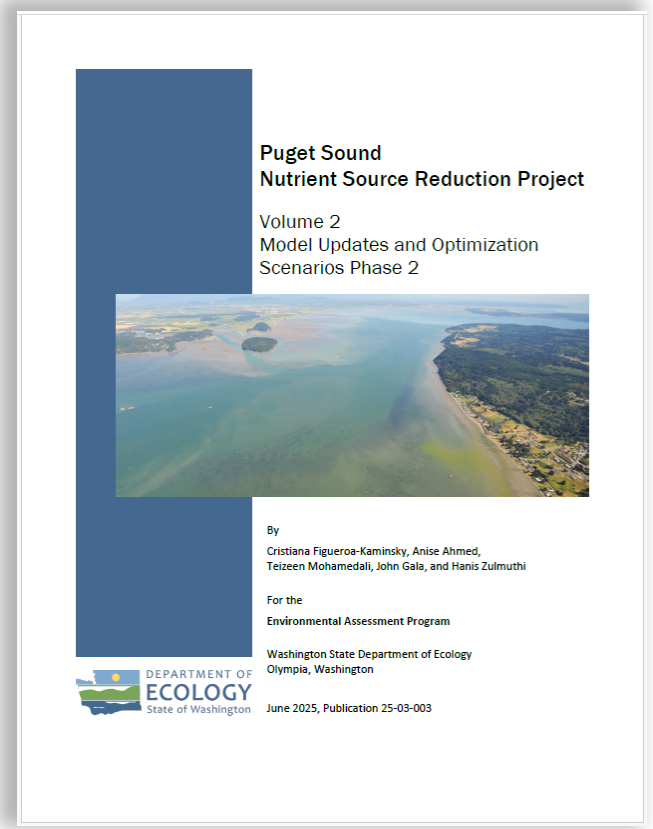
Model Scenario as Basis for Targets

- Selected scenario: Opt2_8
  - Model Year: 2014



Dissolved Oxygen Levels





Marine Point Source Framework

2014 Loads

Industrial Facilities

Very Small WWTPs

Admiralty, Hood Canal, SJF, SOG WWTPs

3 mg/L DIN Year Round

WWTPs discharging near Sinclair Inlet

Opt2_8 Marine Point Sources

8 mg/L DIN - Cool

3 mg/L DIN - Warm & Hot

Main Basin Dominant* WWTPs not treating combined influent

8 mg/L DIN - Cool

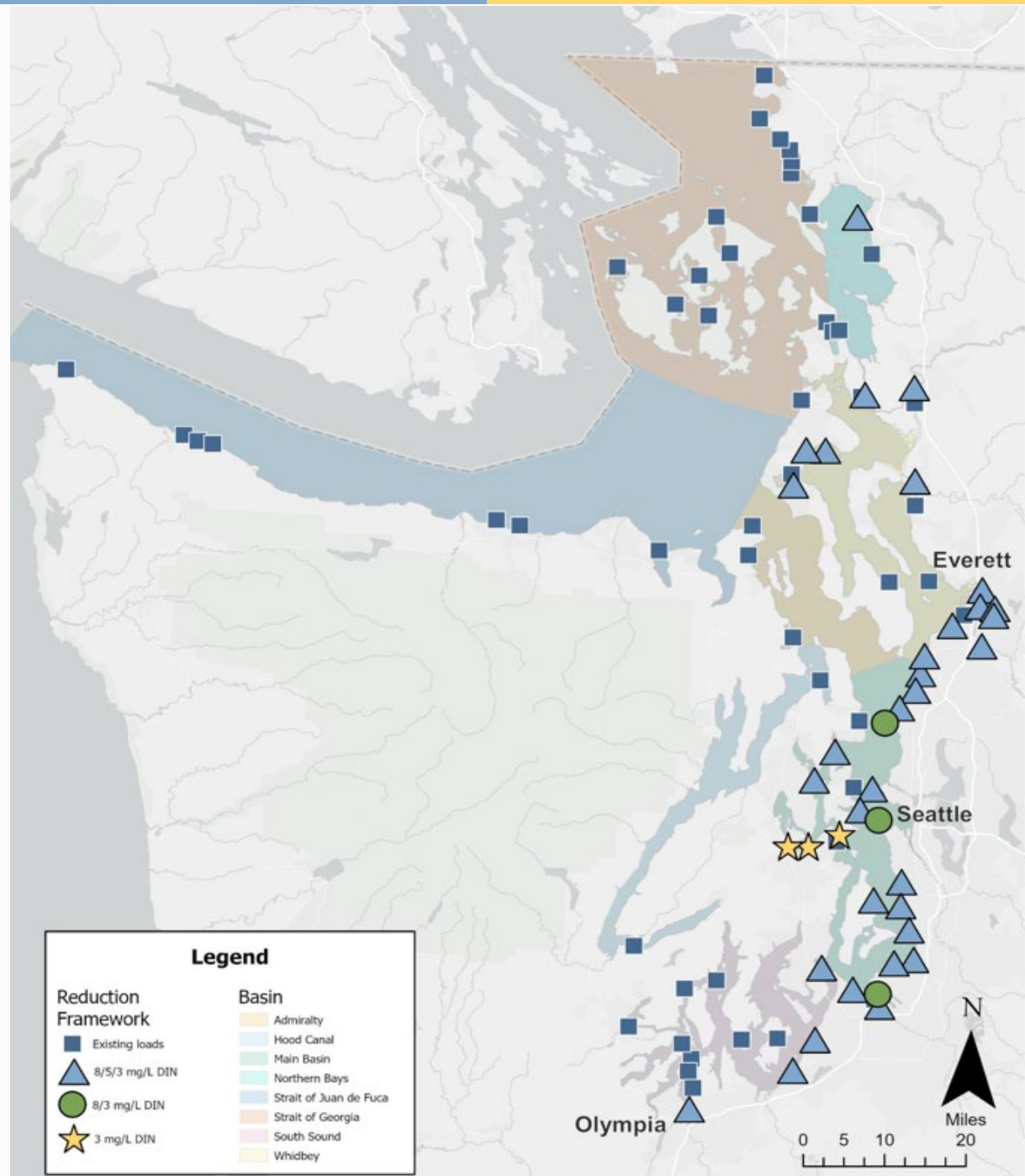
5 mg/L DIN - Warm

3 mg/L DIN - Hot

Remaining WWTPs in Northern Bays, Whidbey, Main, and South Sound Basins

All DIN reductions also included organic carbon reductions applied as **8 mg/L CBOD**

Cool = Nov–Mar | **Warm** = Apr – Jun, Oct | **Hot** = Jul – Sep

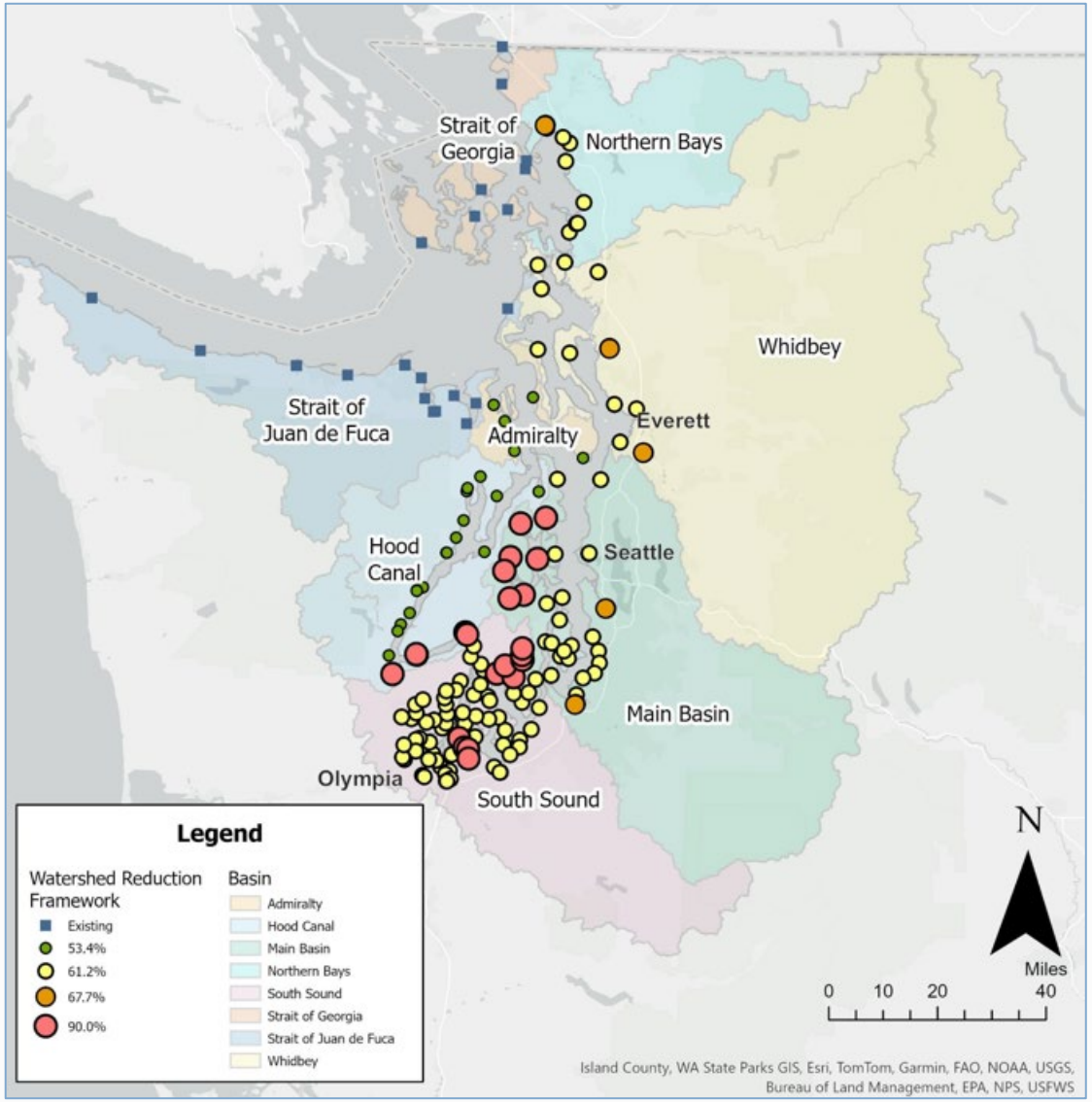


Watershed Framework

- Applied to total nitrogen (TN) and total organic carbon (TOC)
- Anthropogenic (human-caused) loads

Basin(s)	Reduction in Anthropogenic TN and TOC Loads
Northern Bays & Whidbey	67.7% in large watersheds* 61.2% in all other watersheds
Main Basin	90% in watersheds draining to Sinclair & Dyes Inlet and Liberty Bay 67.7% in large watersheds* 61.2% in all other watersheds
South Sound	90% in watersheds draining to Carr, Case, and Henderson Inlets 67.7% in large watersheds* 61.2% in all other
Hood Canal	90% in watersheds draining to Lynch Cove 53.4% in all other watersheds
Admiralty	53.4% in all watersheds
Strait of Juan de Fuca & Strait of Georgia	No reductions

*Large watershed: >1000 kg TN/day



TN Targets (pg. 30)

Opt 2_8 model inputs → Targets

Total Nitrogen - Basin level - Annual

Marine Point Source Targets (lbs. TN/yr) (*Table 5*)

Basin	Total Annual Target	Reduction Anthro TN*
Northern Bays	449,000	58%
Whidbey	1,130,000	63%
Main	6,300,000	72%
South Sound	898,000	66%
Hood Canal	823	0%
Admiralty	54,400	0%
Strait of Juan de Fuca	233,000	0%
Strait of Georgia	563,000	0%

*Relative to 2014 loads

Watershed Targets (lbs. TN/yr) (*Table 6*)

Basin	Total Annual Target	Reduction Anthro TN*
Northern Bays	3,390,000	66%
Whidbey	11,900,000	67%
Main	4,330,000	68%
South Sound	2,940,000	63%
Hood Canal	1,030,000	66%
Admiralty	50,100	53%
Strait of Juan de Fuca	929,000	0%
Strait of Georgia	1,070,000	0%

*Relative to 2014 loads

How will we achieve our targets?

Implementation
Financial Assistance
Schedule & Milestones
Effectiveness Monitoring
Adaptive Management

Implementation – Marine Point Sources

- Targets will be used to inform **future** numeric WQBELs
  - WWTPs and Industrial facilities
  - Appendix H
- Technical Advisory Committee to support WQBEL development
  - William Weaver, William.weaver@ecy.wa.gov
- No new discharge source into Puget Sound will be permitted unless targets can be met

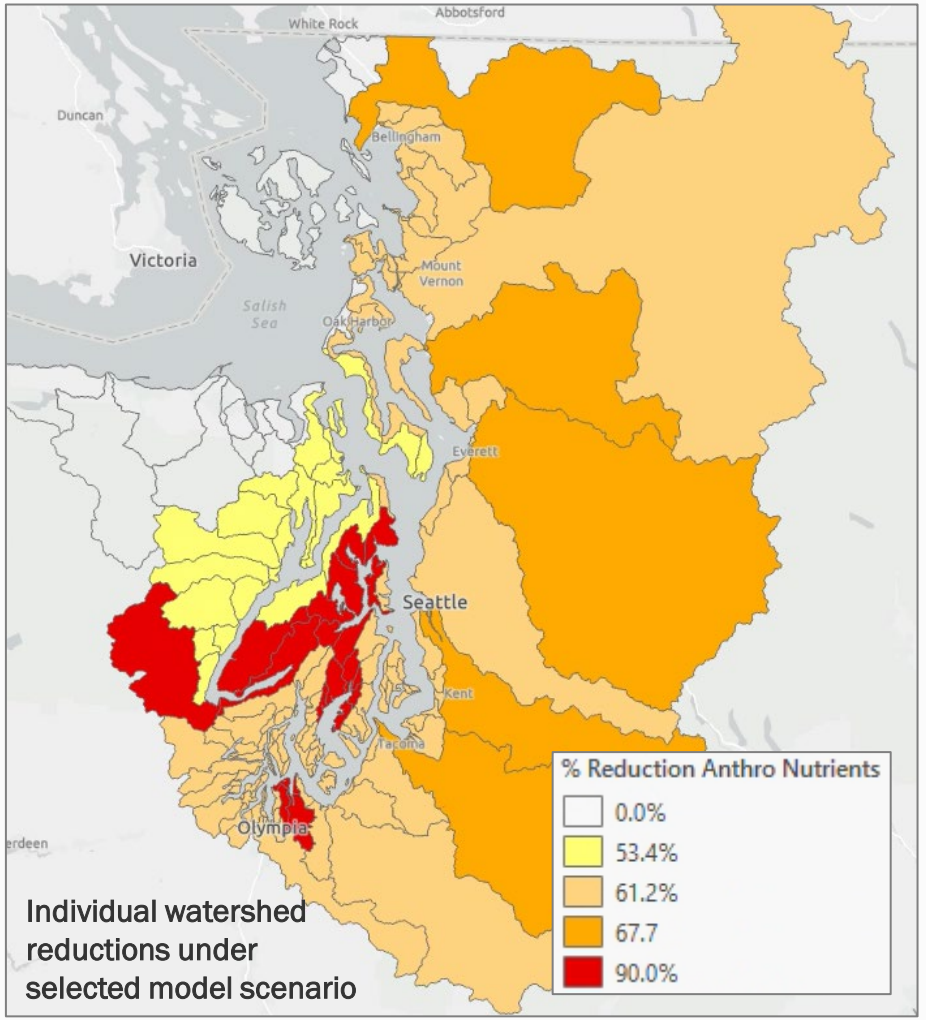
Implementation – Other tools for permits

- Compliance schedules*
  - Interim limits
  - Step-wise progress
- Water Quality Trading
  - Cost-effective alternative to meeting water quality goals
- Reclaimed water
  - Wastewater treated for safe re-use

*WAC 173-220-140, WAC 173-226-180 and 40 CFR 122.47

Implementation – Watersheds

- Ecology regional offices will be drafting **watershed prioritization strategies**
  - Identify and prioritize **water clean-up plans** – target dates
  - Roadmap to achieve necessary **permitted point source** reductions
  - **Nonpoint pollution control** priority watersheds
- Adaptively managed ~ 25 years



Financial Assistance (pg. 53)

- Grants and loans available to marine point source and watershed implementation
  - Wastewater planning, optimization, and upgrades
  - Nonpoint best management plan (BMP) implementation
  - Restoration
  - Protection

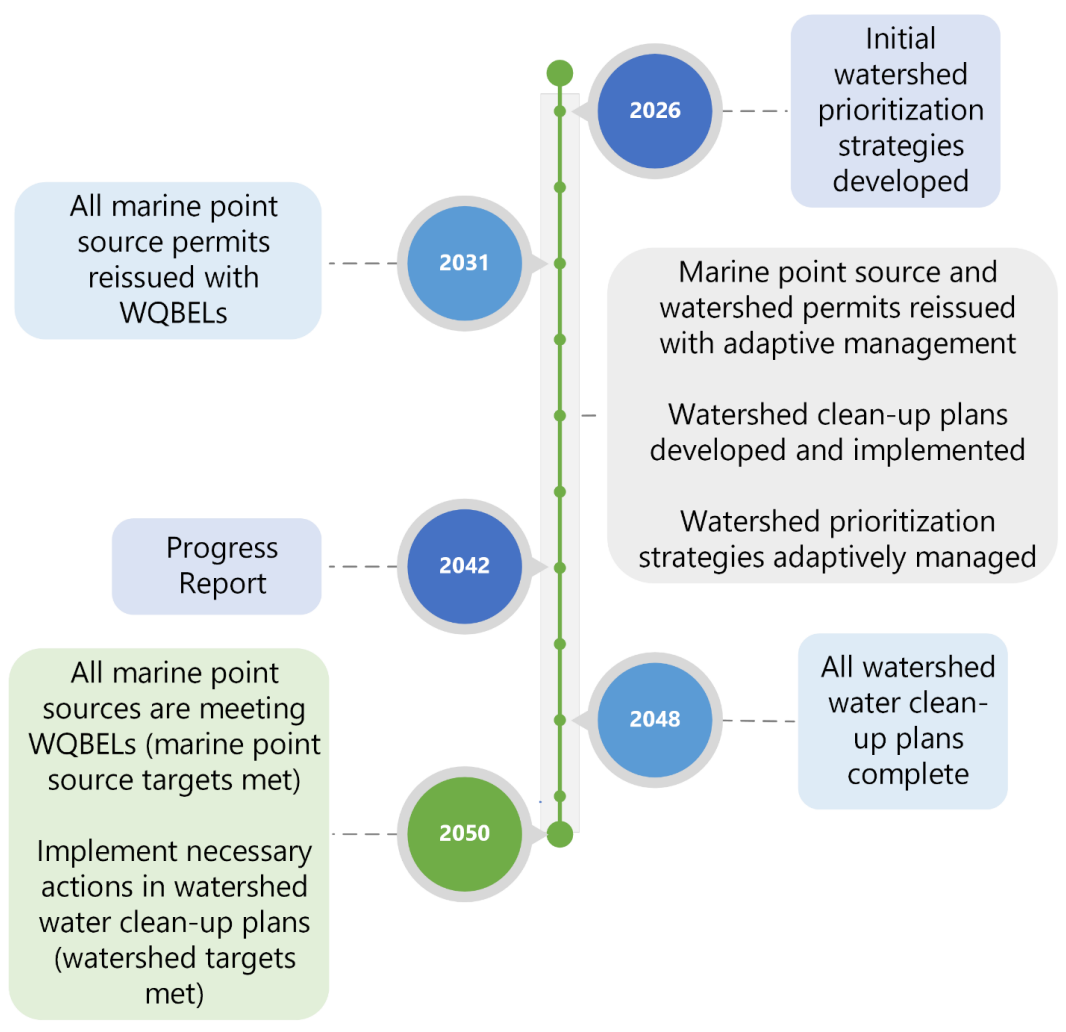
Ecology's Puget Sound Nutrient Reduction Grants Program

- Project scope: Planning and optimization projects that reduce discharges of nutrients to Puget Sound
- Eligible entities: POTWs discharging to Puget Sound
- $10 million for SFY-2027

Ecology's Water Quality Combined Funding Program

- Grants and loan funding from 7 state/federal sources
- Project types: wastewater, stormwater, nonpoint BMPs, restoration, protection, monitoring, onsite sewage systems
- Eligible entities: local governments, Tribes, sewer districts
- Ranges from $100-200 million

Schedule & Milestones (pg. 57)

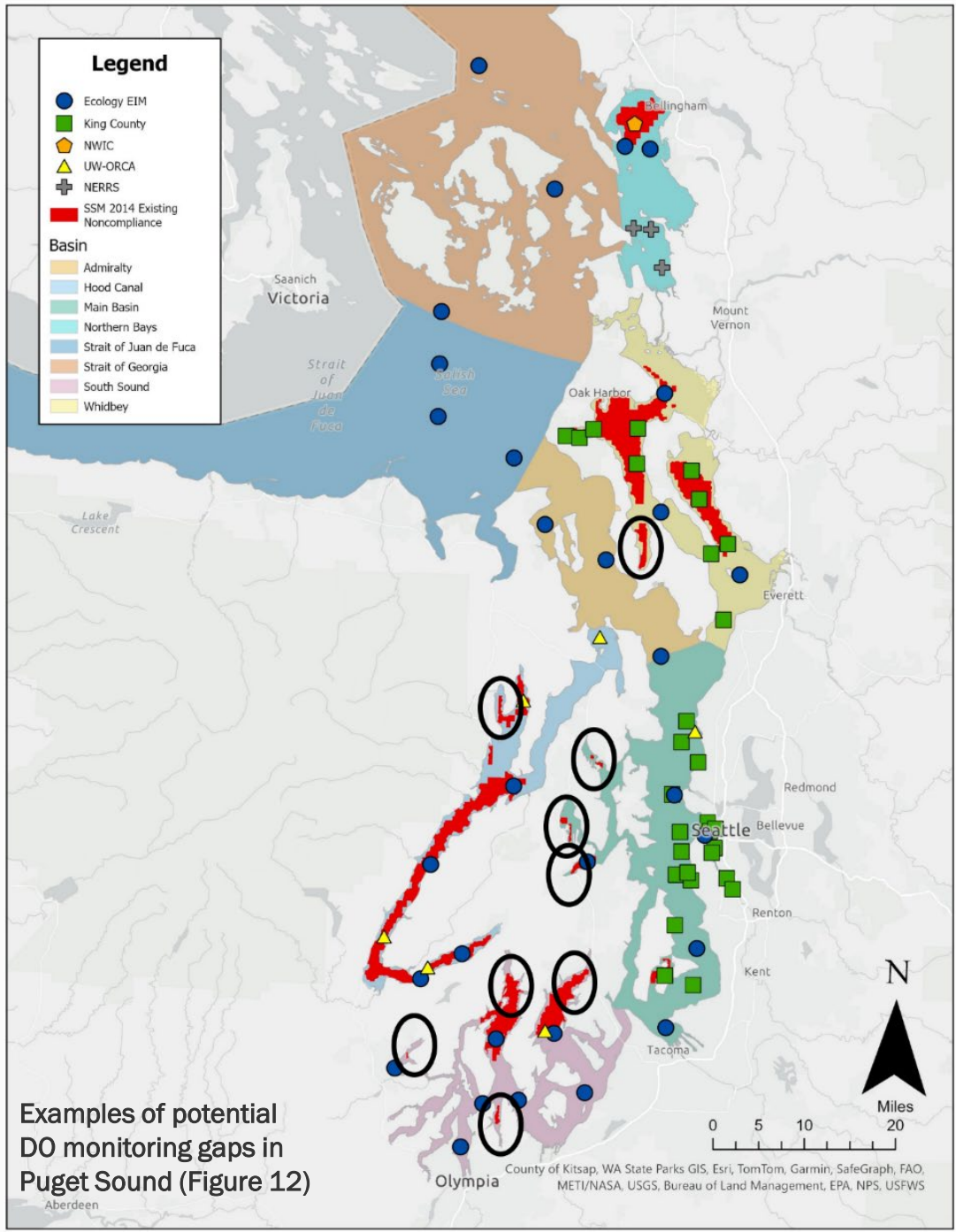


- Measurable Milestones (Table 9)
  - Permits
  - Water clean-up plans
  - Progress reports – 2042 & 2055
- Reoccurring Milestones (Table 10)
  - Permit coordination, review, updates
  - Nonpoint field staff work
  - Adaptive management

Effectiveness Monitoring (pg. 63)

- Evaluates existing efforts
- Recommendations for future efforts
- How we will use these data

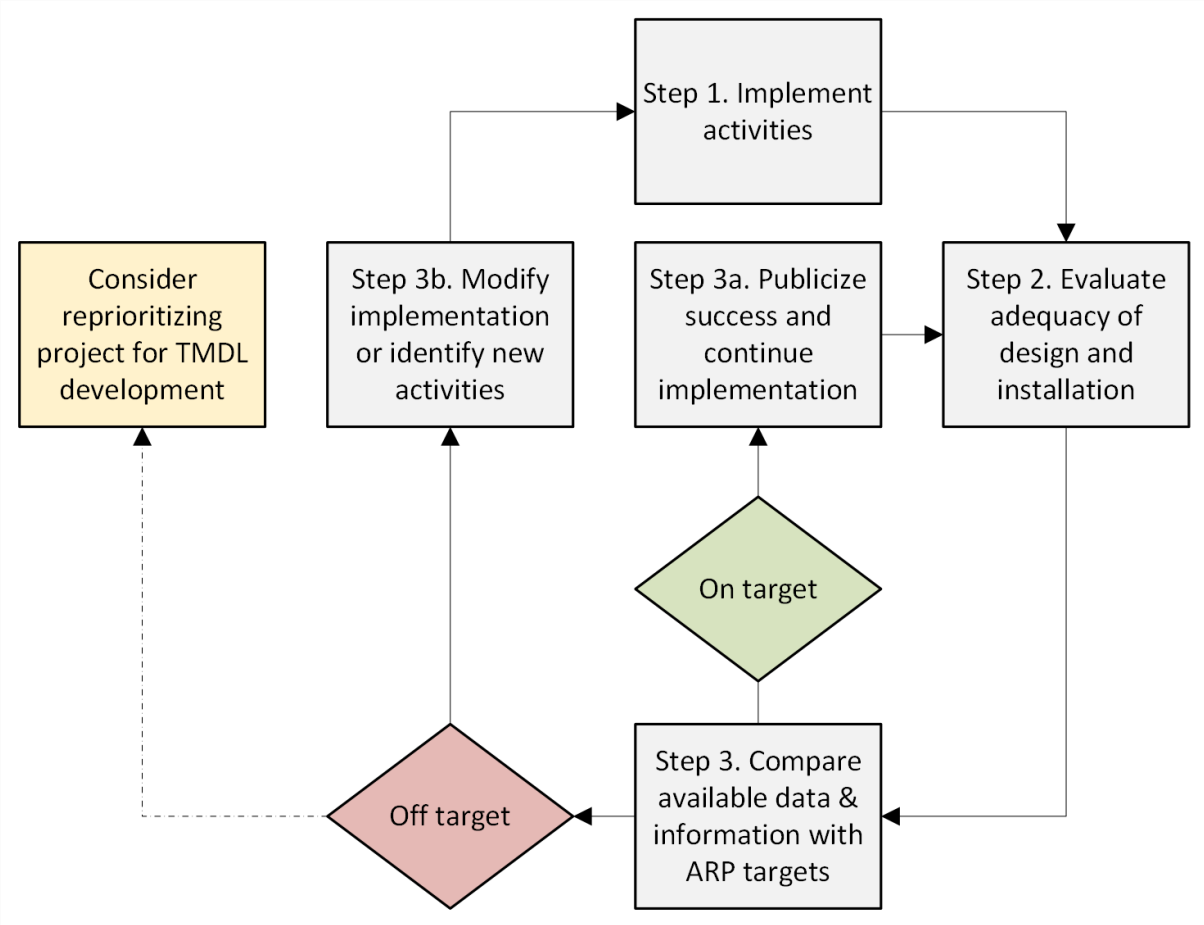
- Primary types of monitoring
  - Marine point source nitrogen loads
  - Watershed nitrogen loads
  - Puget Sound dissolved oxygen
    - Inputs to Salish Sea Model
  - Implementation tracking



Examples of potential DO monitoring gaps in Puget Sound (Figure 12)

Adaptive Management (pg. 72)

- *Strategic* "trial and error"
- Is implementation working?
  - If not, what will we do about it?



How to comment

Comments are due by 11:59 p.m. August 27, 2025

Comment online or by mail

- Comment online at: https://wq.ecology.commentinput.com/?id=9ruD7M5ie
- Send comments by mail to:

  Jeremy Reiman
  Department of Ecology
  Water Quality Program
  PO Box 47600
  Olympia, WA 98504-7600

- Due: August 27th, 2025

Scan me!

Helpful feedback

- Clear & specific
- Are there other reduction scenarios that may meet state water quality goals?
- Do you have ideas for setting WQBELs? (Appendix H)
- Are there other creative implementation tools we should consider?
- Are refined or additional milestones needed?

Next Steps

August 11, 2025

2nd in-person Nutrient Forum, University Place, WA

August 27, 2025

End of plan comment period

Fall 2025

Review comments and update plan

December 2025* *anticipated*

Transmit plan to EPA and publish response to comments

Next 25 years

Continue implementation of the plan

Next Steps

Working with partners, interested parties, and Tribes

July 2025

In-person Nutrient Forums

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Next 25 years

Continue

Please join us for topic-specific discussion

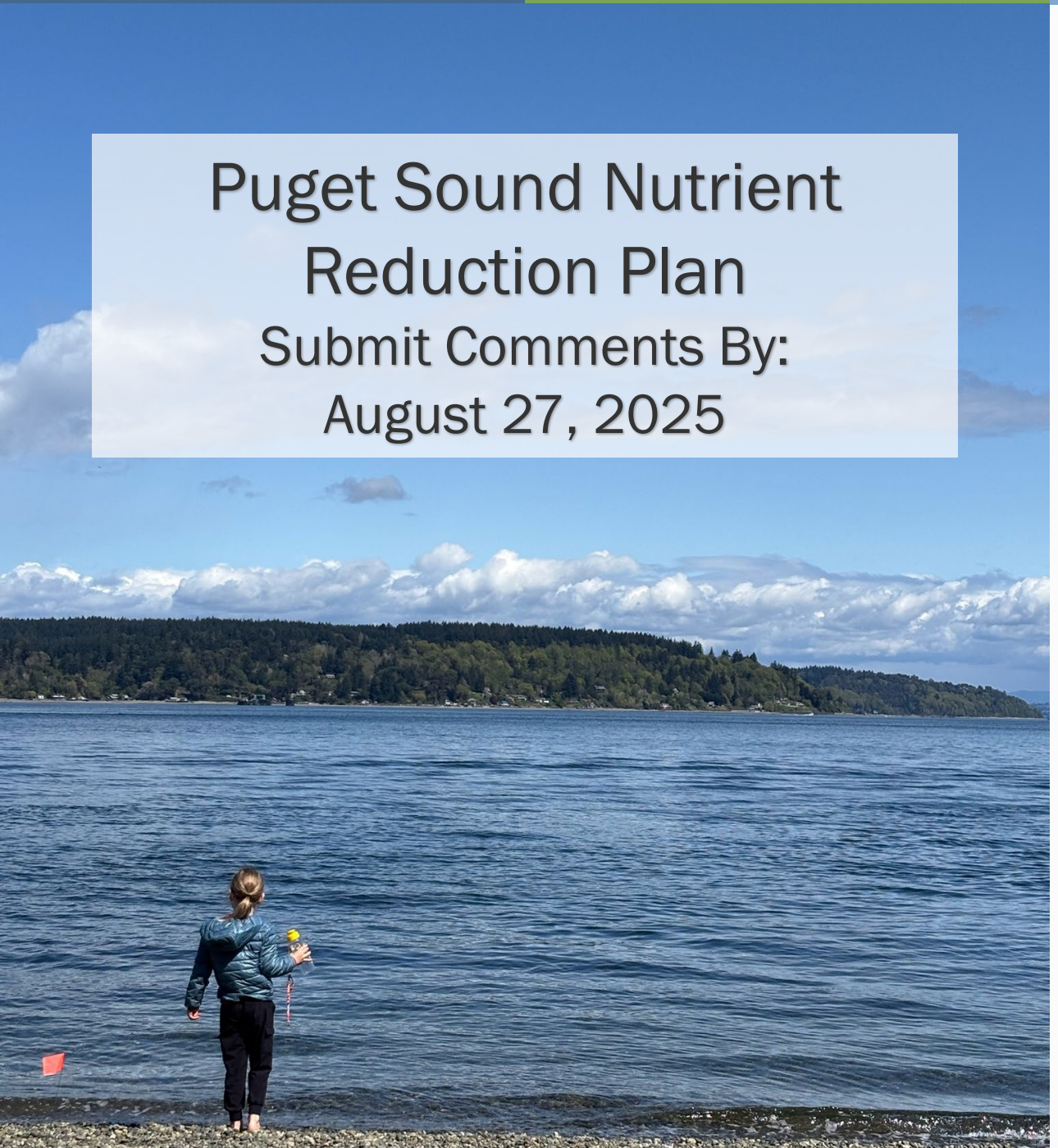
Nutrient Reduction Plan

Marine Point Sources

Watersheds

Salish Sea Model & other technical tools

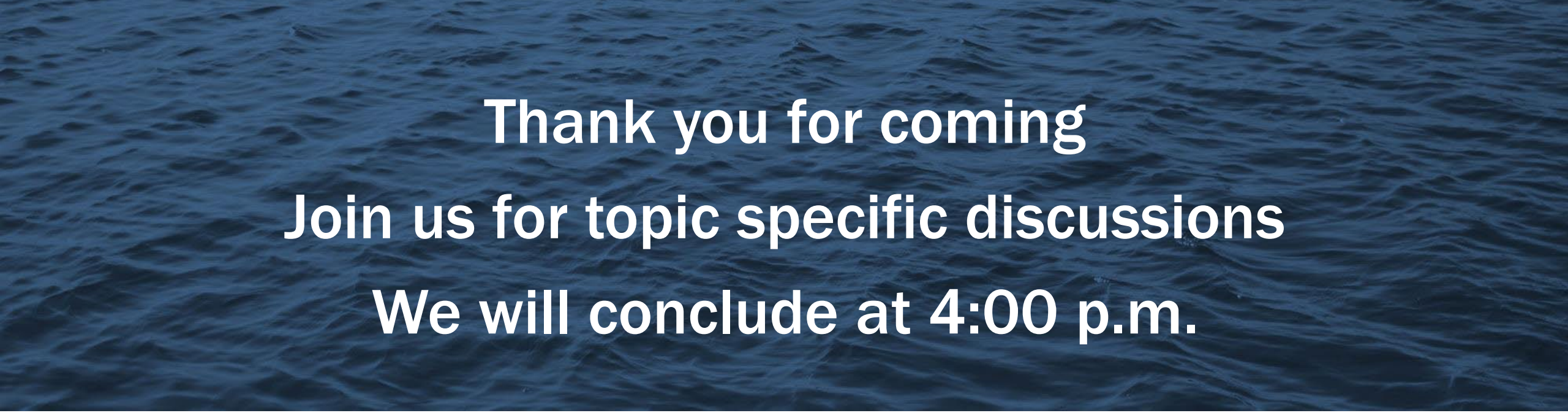
Other Information



Thank you

Jeremy Reiman
Senior Environmental Planner
Jeremy.reiman@ecy.wa.gov
360-819-0197

Reducing Nutrients webpage



Thank you for coming

Join us for topic specific discussions

We will conclude at 4:00 p.m.

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- Other Information