

Puget Sound Nutrient Management Plan

Puget Sound Nutrient Forum Meeting
May 7, 2020



DEPARTMENT OF
ECOLOGY
State of Washington

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Today's Agenda

Project timeline

Nutrient Management Plan

Overview

Next steps

Q&A



Puget Sound Nutrient Reduction Project Timeline

2018

Nutrient
Forum
begins



2019

Bounding
scenarios
report



2019-2021

Optimization
Scenario
Modeling to
inform WLAs



2022

Draft Nutrient
Management Plan

Puget Sound Nutrient Reduction Project Timeline

2018

Nutrient
Forum
begins

2019

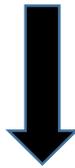
Bounding
scenarios
report

2019-2021

Optimization
Scenario
Modeling to
inform WLAs

2022

Draft Nutrient
Management Plan



2020
General
Permit (GP)
decision

1st GP
Permit
Cycle

Future GP
cycles



What is the Puget Sound Nutrient Management Plan?

To meet marine
dissolved oxygen water
quality criteria for
Puget Sound.



What is the Puget Sound Nutrient Management Plan?

Establish nutrient load targets for both marine point sources and watershed sources

Strategize actions necessary to achieve dissolved oxygen criteria

Monitor for effectiveness and adaptively manage the plan

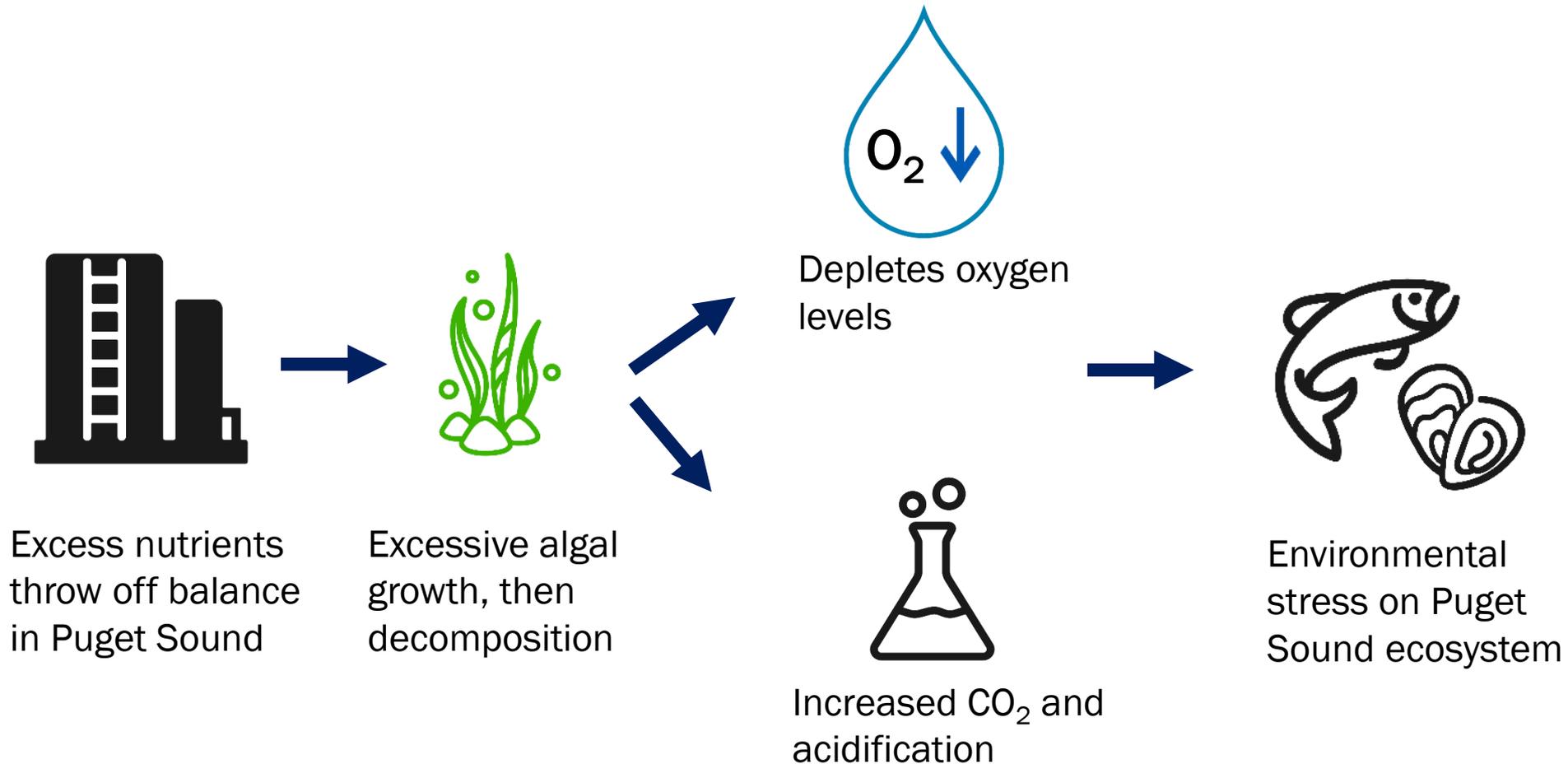


Why we're regulating nutrients

Chapters 1-2



Nutrient imbalance impacts Puget Sound ecology





Bloom



Eyes Over Puget Sound

Blooms

Noctiluca plankton



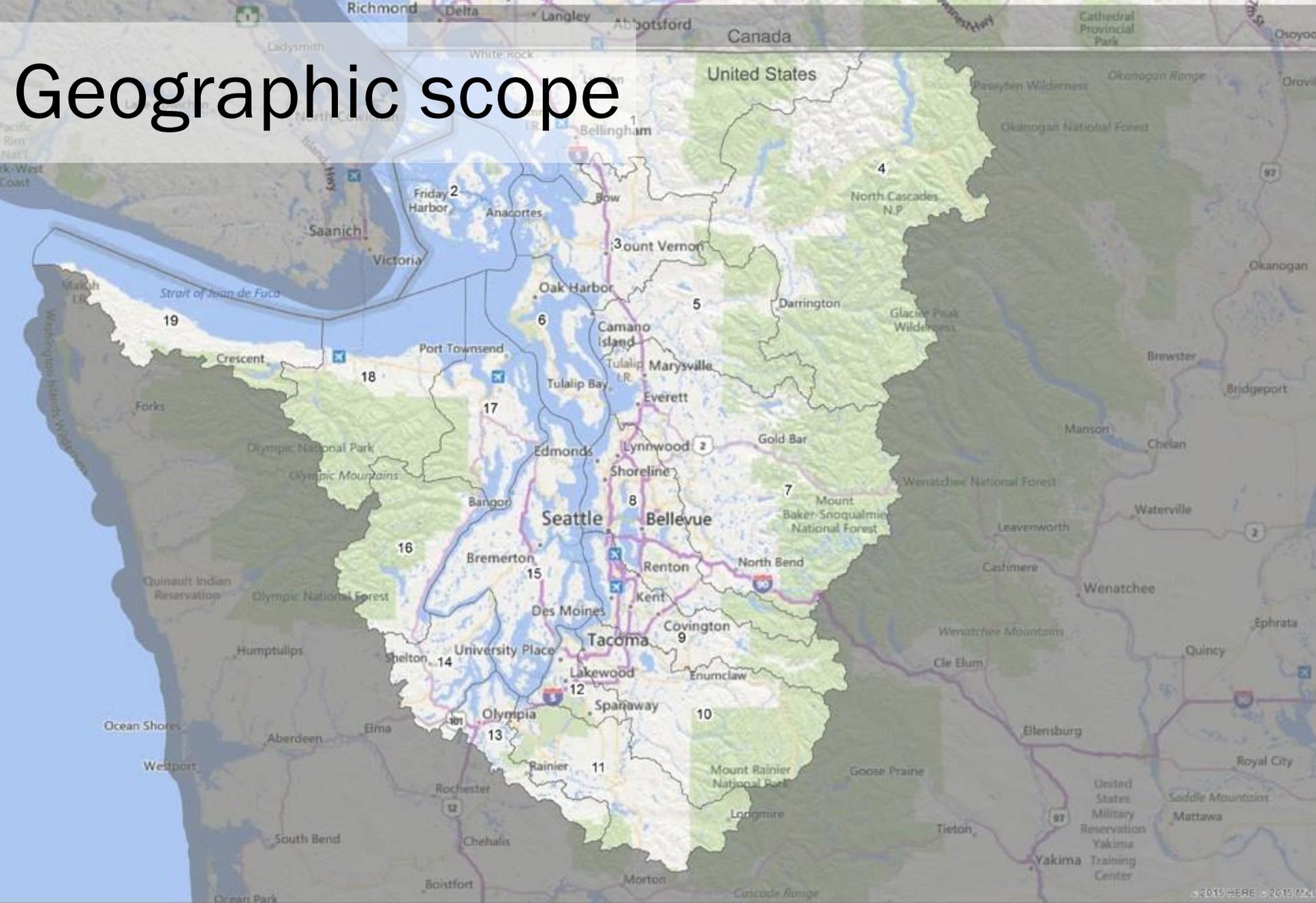
Nuisance macroalgae



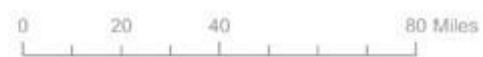
Acidification



Geographic scope



Puget Sound Basin in Washington State



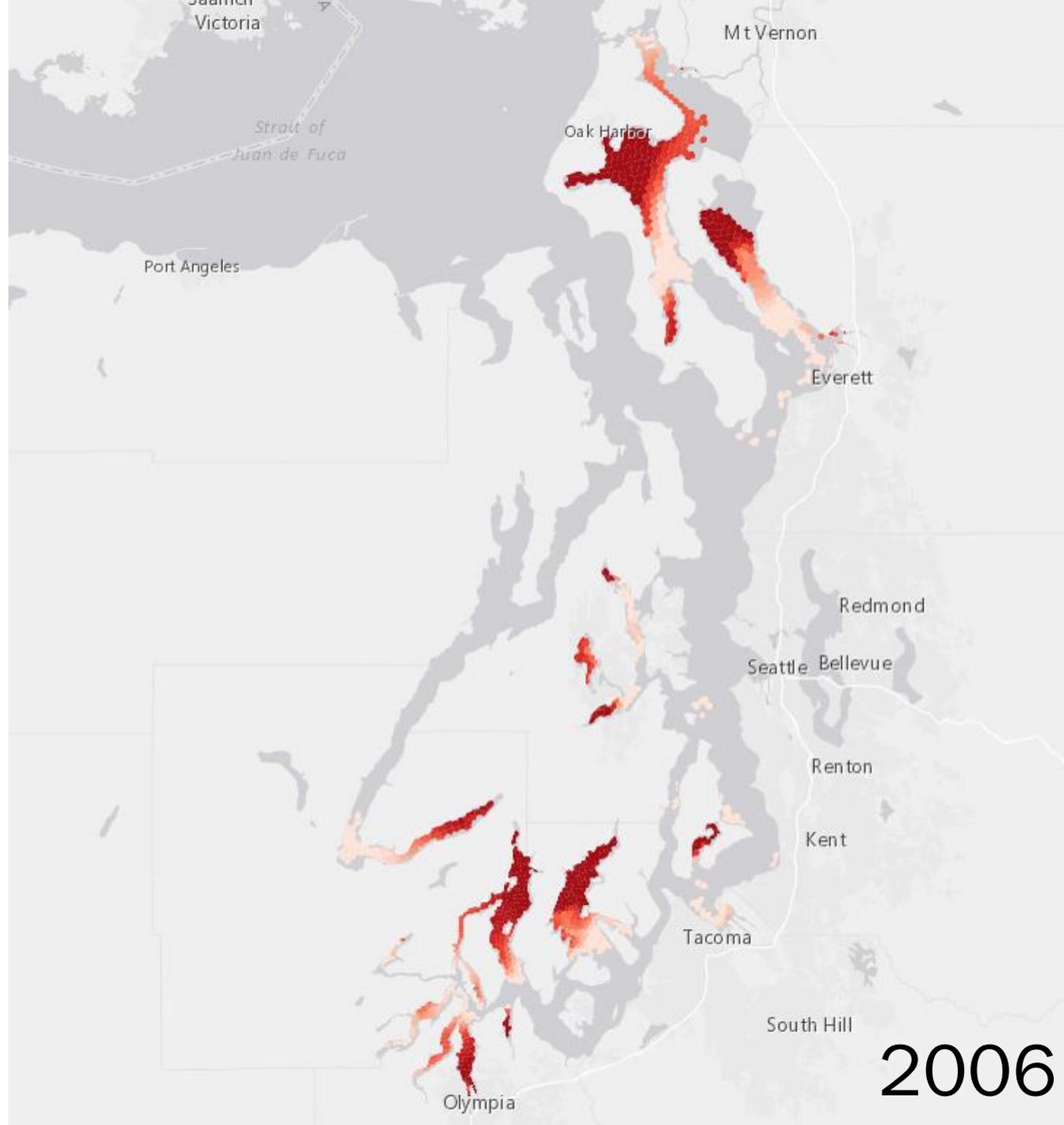
Salish Sea Model

>120



of noncompliant days

< 10



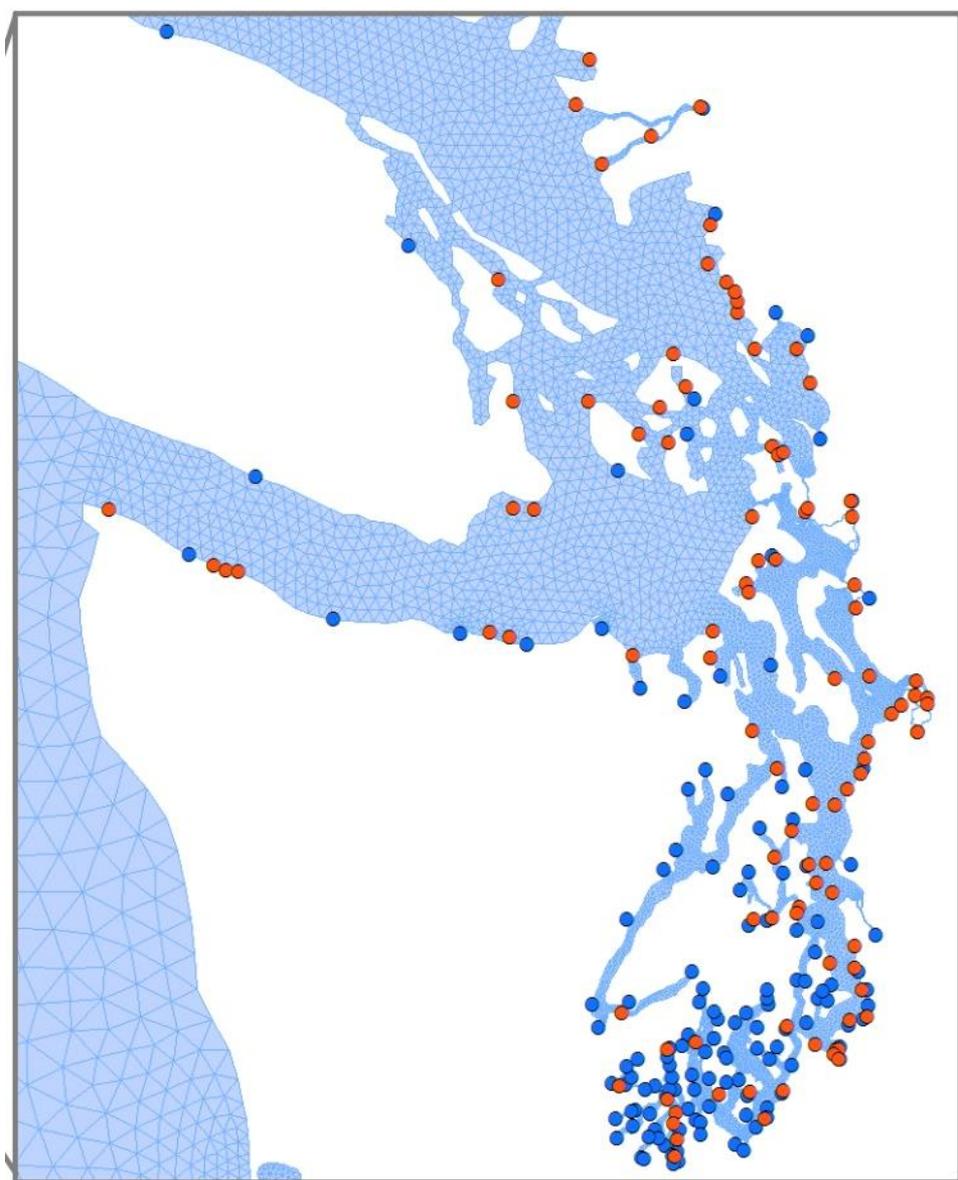
Oceanic nitrogen sources



Human nitrogen sources

69% WWTPs
discharging to Puget
Sound

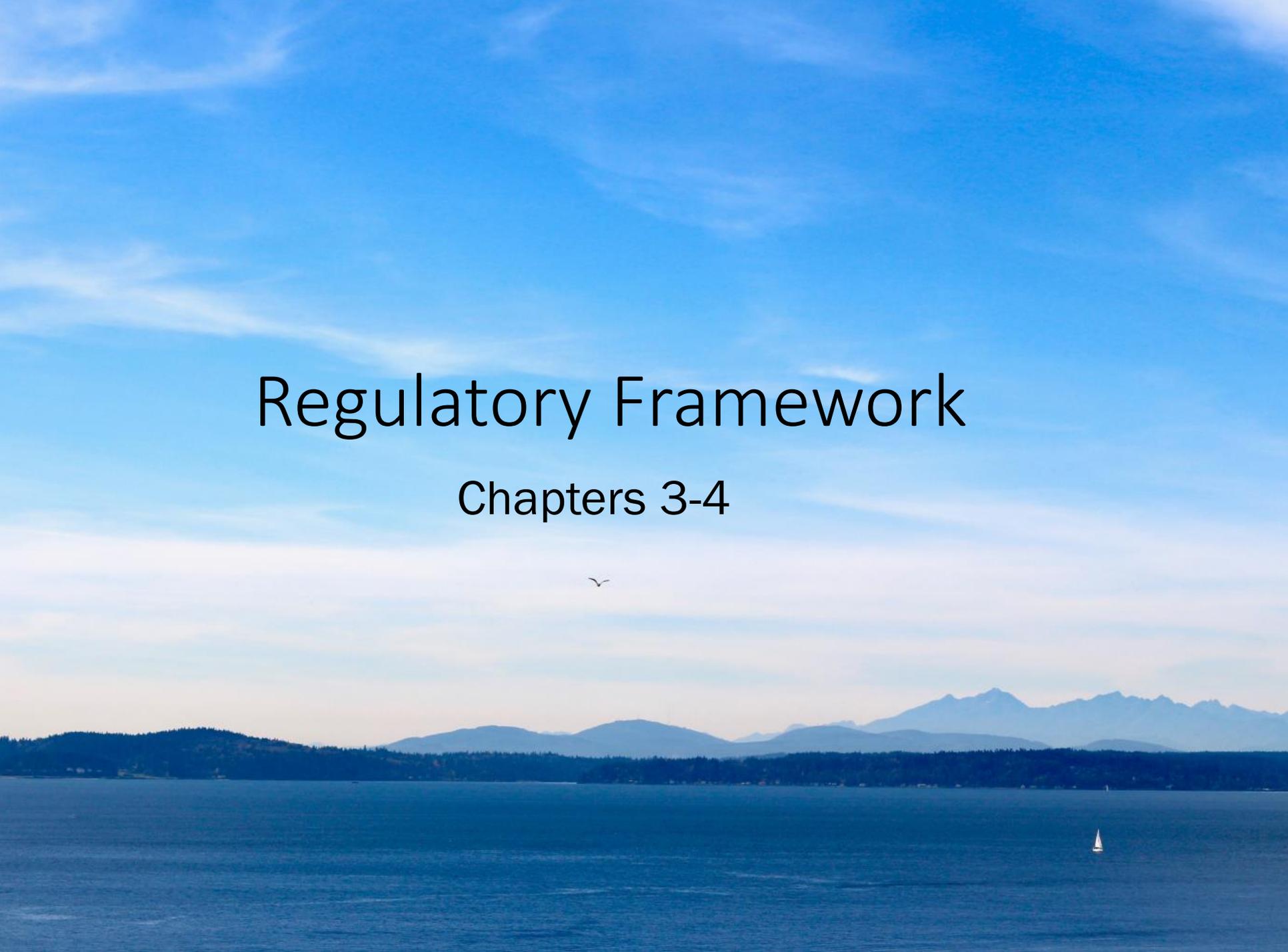
31% watershed
sources



- Point-Sources (incl. WWTPs)
- Rivers (Watersheds)

Regulatory Framework

Chapters 3-4



Marine DO water quality standards

Part A

DO mg/L



7

Most of Puget Sound & Straits



6

Bellingham Bay, Samish Bay, Skagit Bay, Whidbey, other inlets



5

Commencement Bay, Budd Inlet, and portions of some inlets

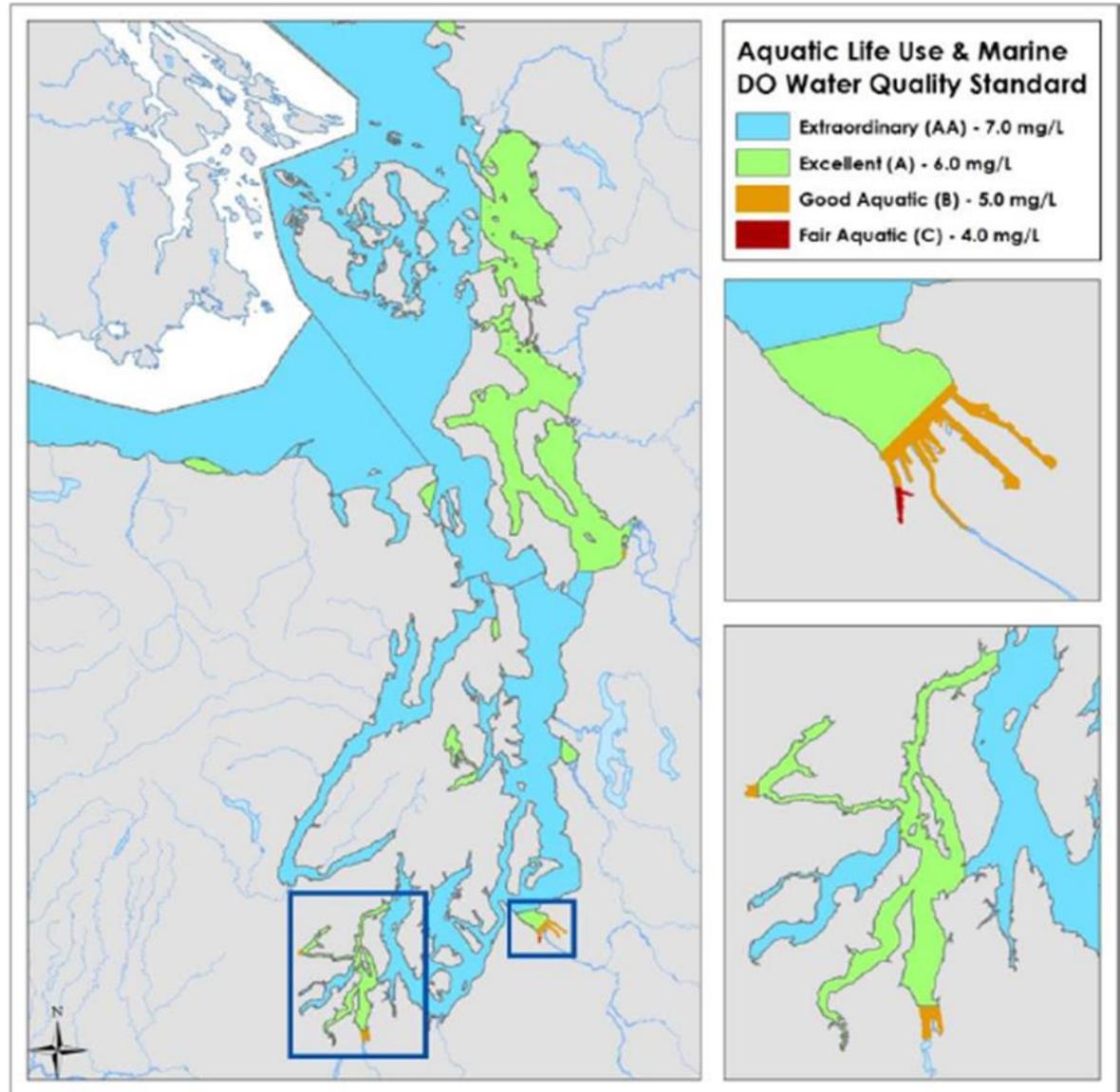


4

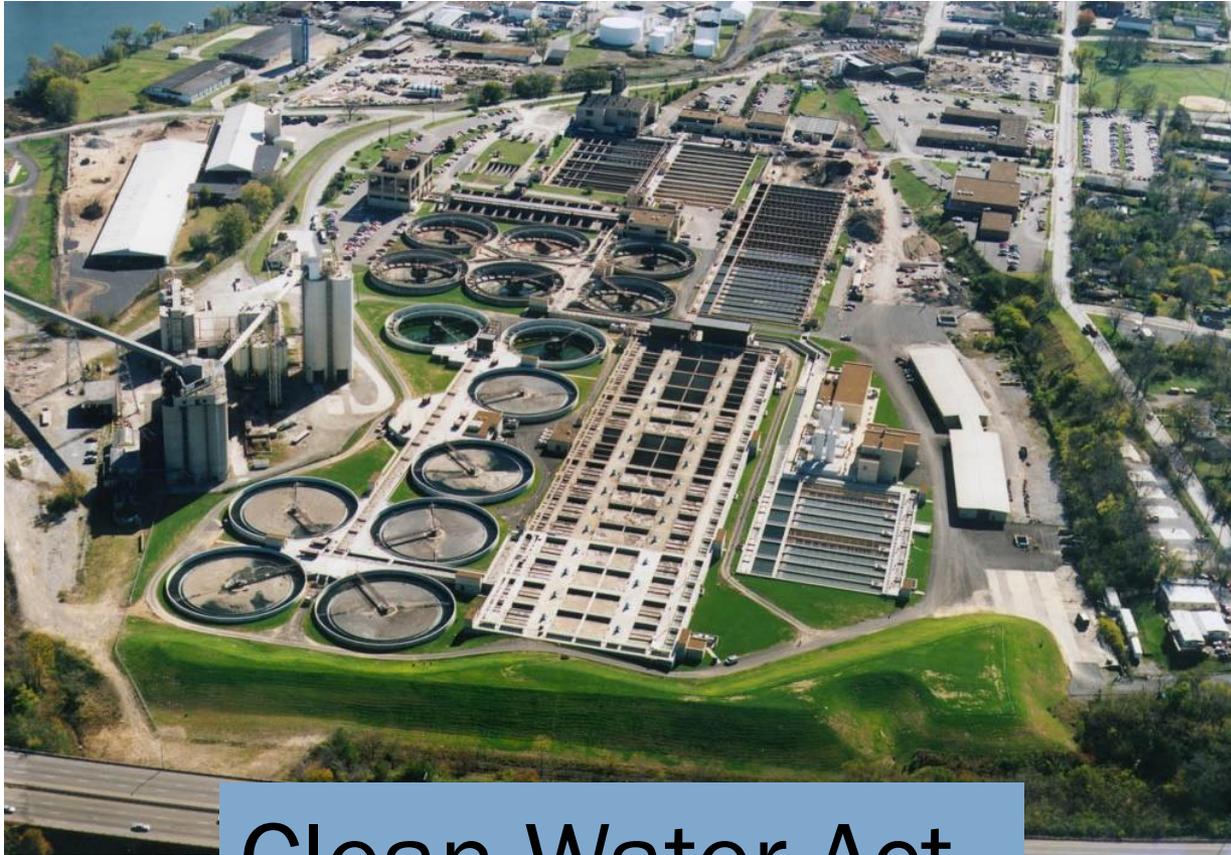
Part of Commencement Bay

Part B

Anthropogenic Allowance:
DO concentrations may not decrease more than 0.2 mg/L

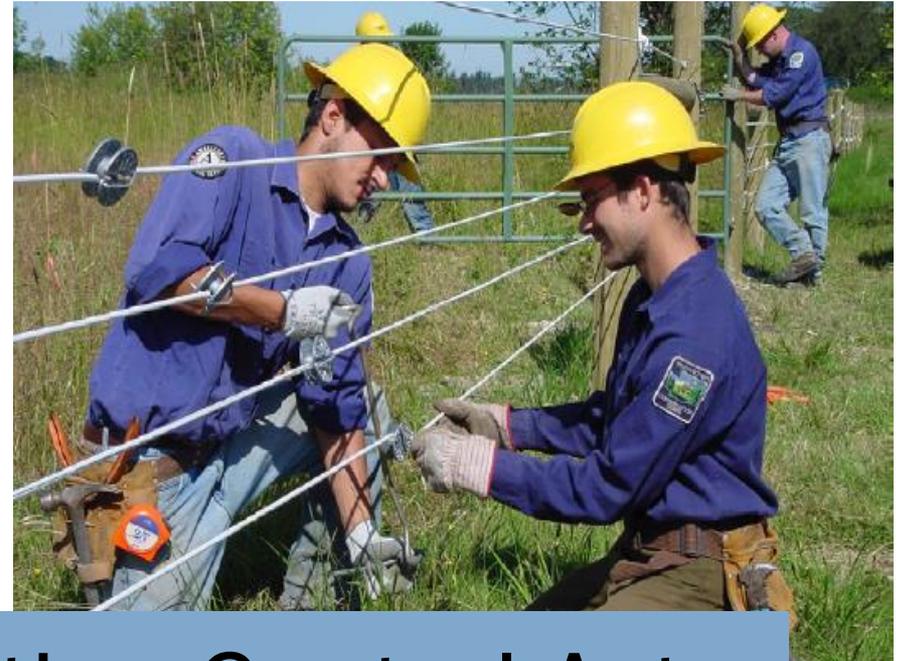


Regulating point sources in Puget Sound:



Clean Water Act
NPDES permits

Regulating nonpoint sources to Puget Sound



State Water Pollution Control Act

WA Water Quality Plan to Control Nonpoint Sources

Nutrient Forum



Questions?

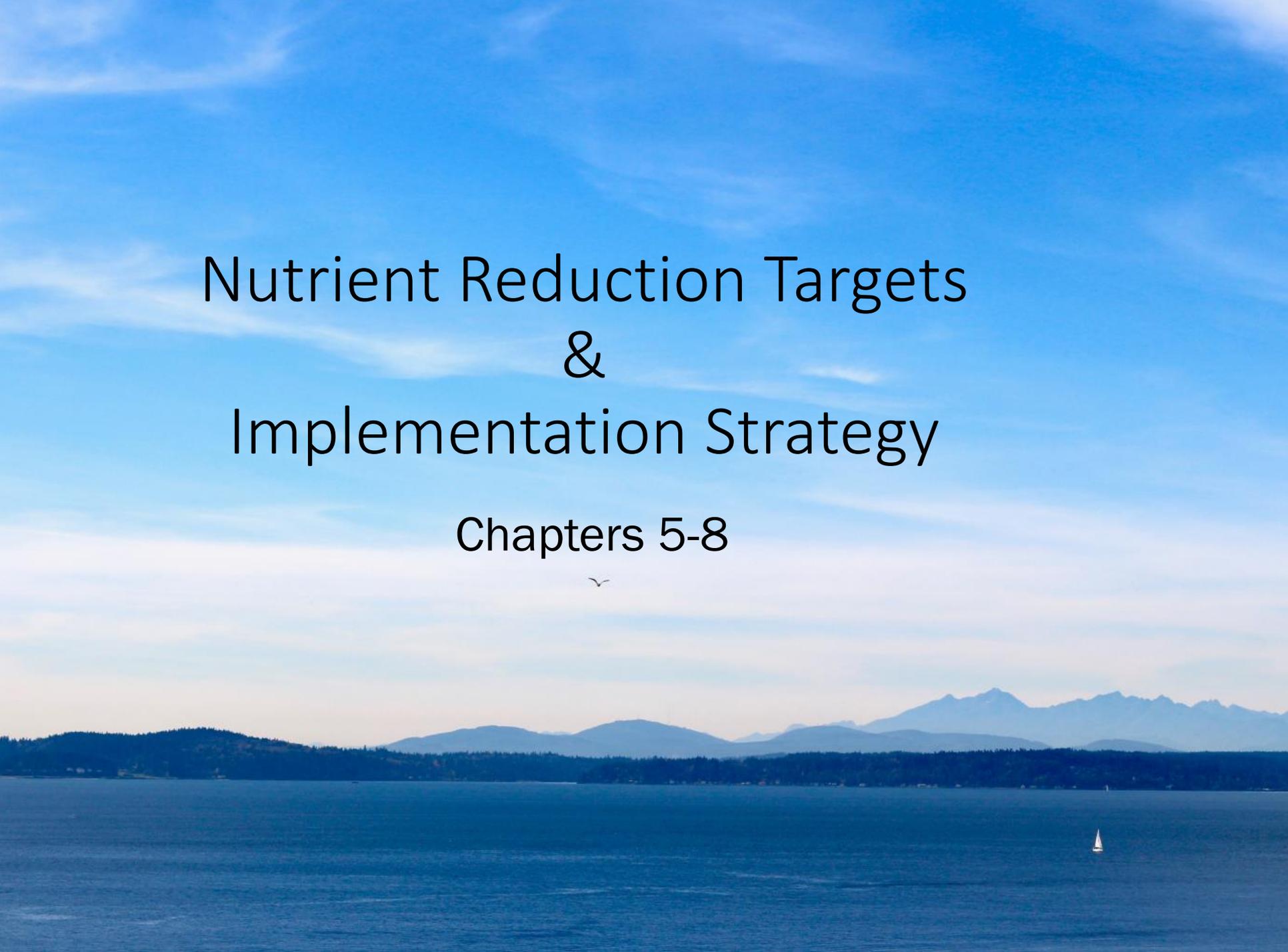
Chapters 1-2
Introduction & Scope
of the Problem

Chapters 3-4
Regulatory Framework



Nutrient Reduction Targets & Implementation Strategy

Chapters 5-8



Salish Sea Modeling Results

2019

Volume 1: Model Updates and
Bounding Scenarios

Summer
2020

Technical Memo: Year 1
Optimization Scenarios

Early
2022

Volume 2: Year 1 & 2
Optimization Scenarios



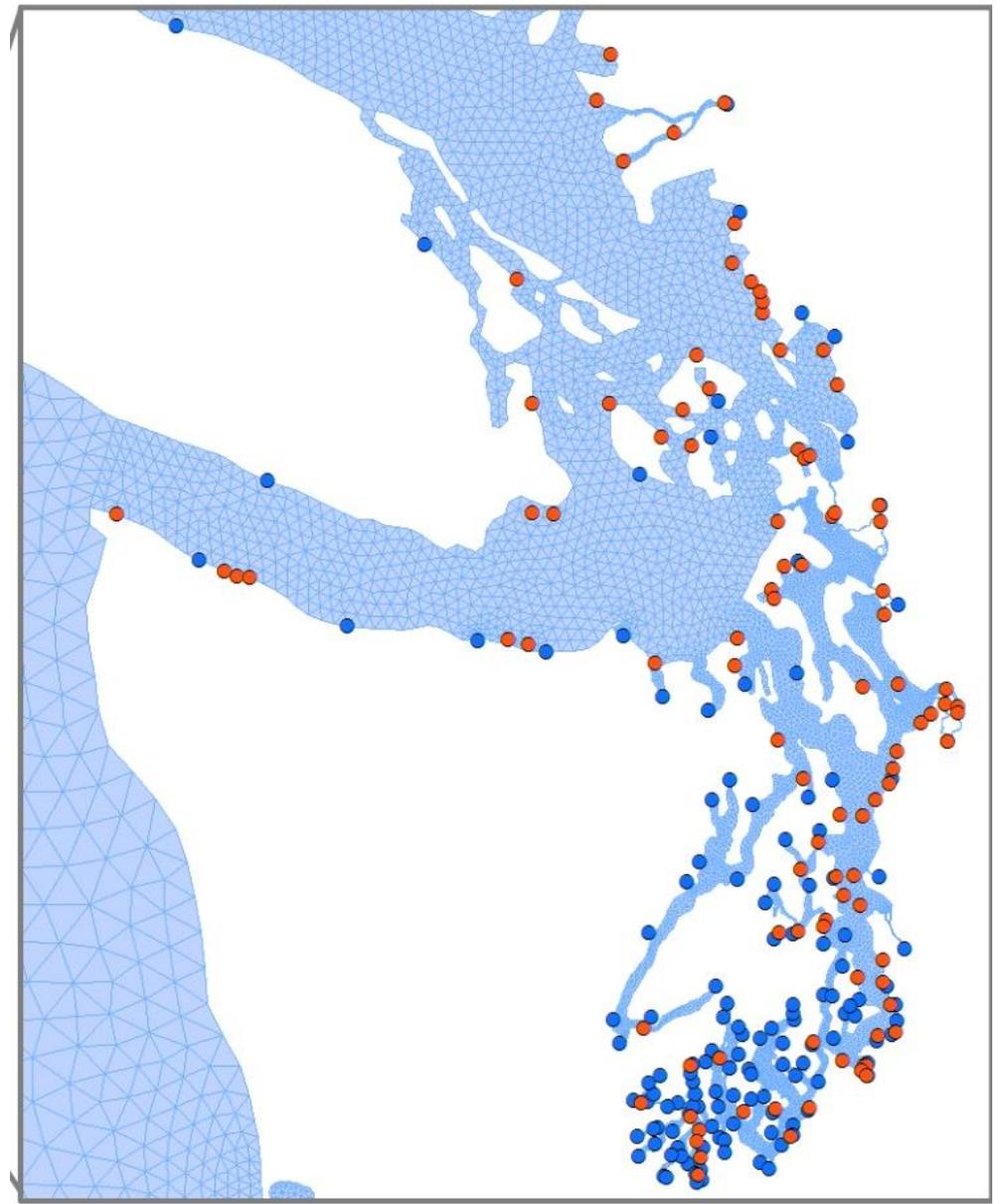
**Puget Sound
Nutrient Source Reduction Pro**

**Volume 1: Model Updates and
Bounding Scenarios**

January 2019
Publication No. 19-03-001

Nutrient Reduction Targets for Marine Sources

(Wasteload Allocations)



● **Point-Sources (incl. WWTPs)**



Strategy for marine point sources



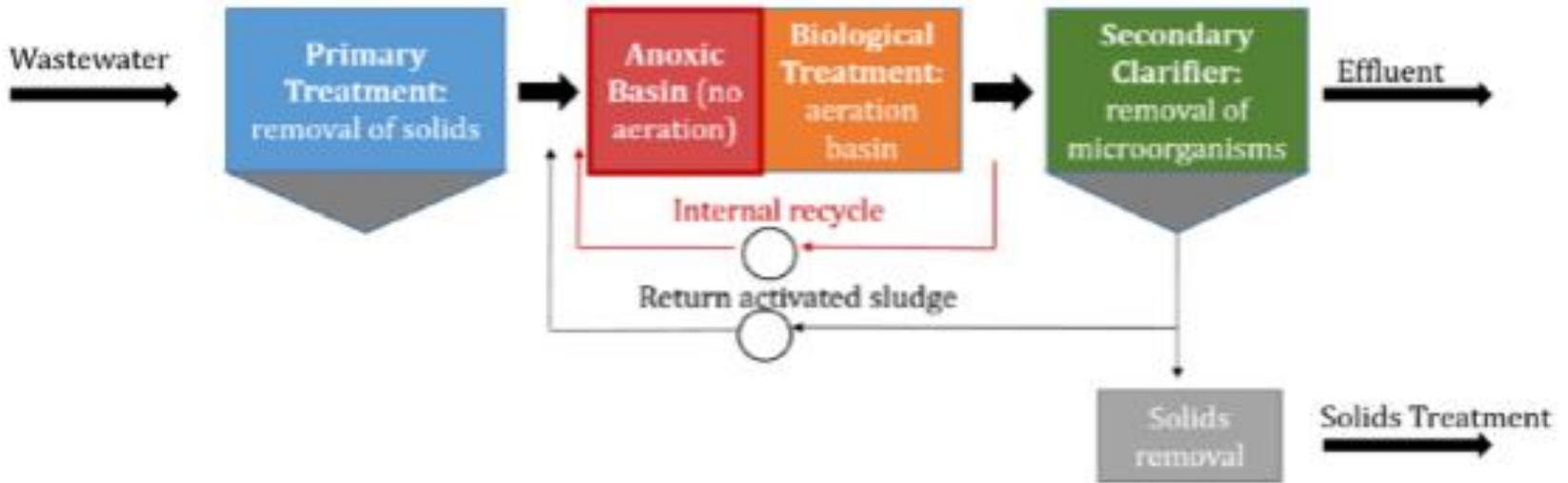
Nutrients General Permit

Advisory Committee
engagement

Turning load reduction
targets into effluent
limits

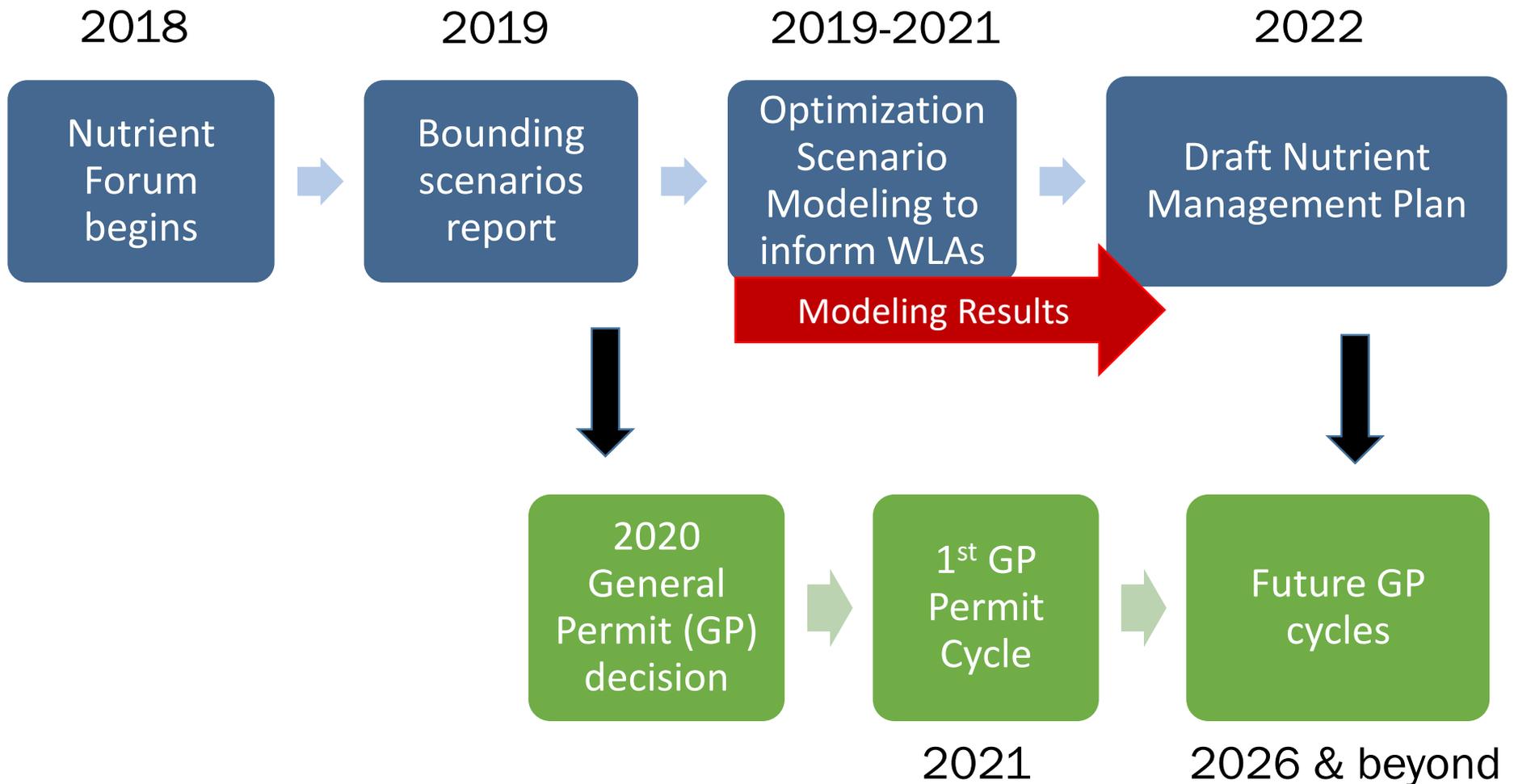
Water quality trading
discussion

Point source technology solutions



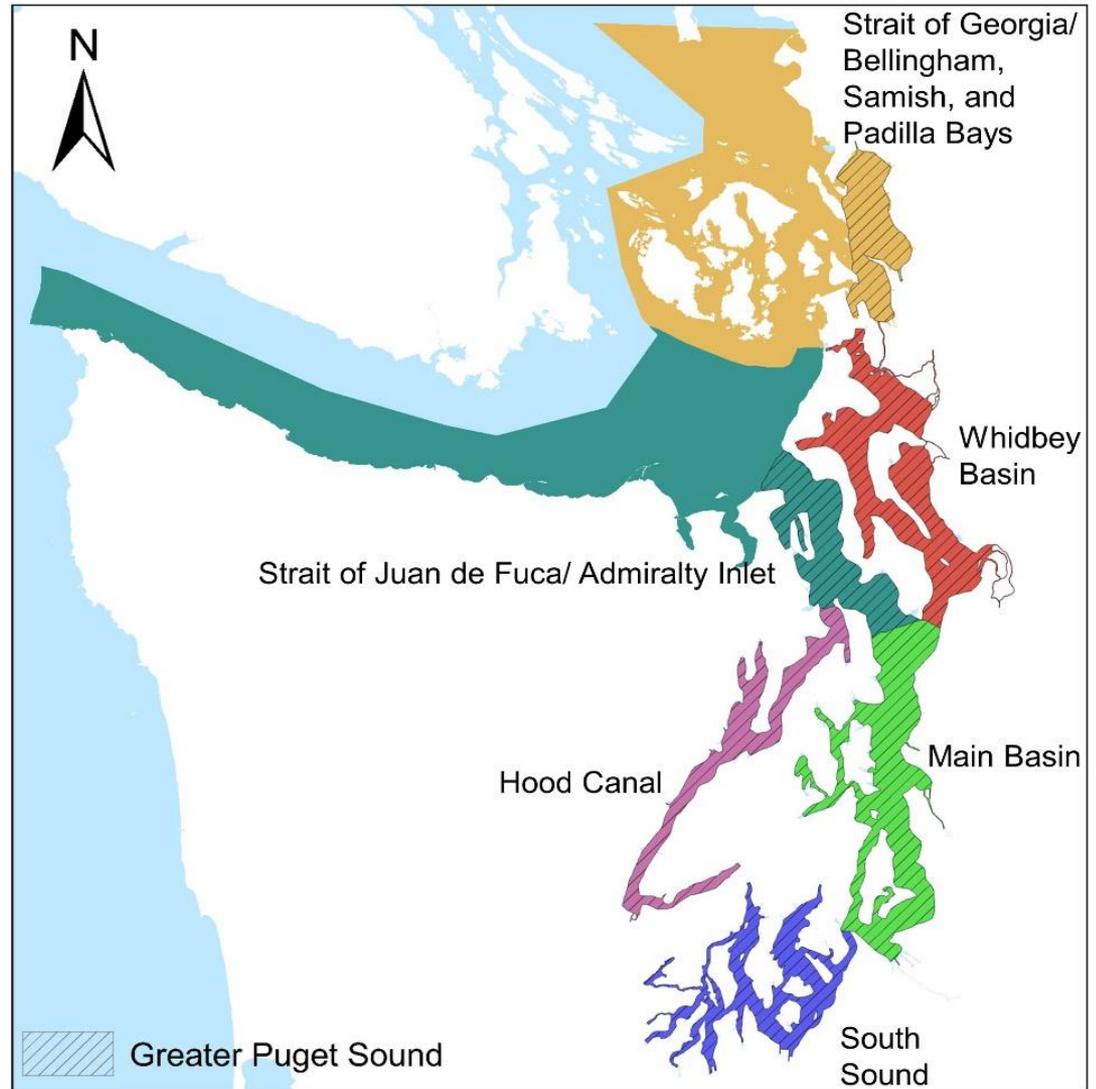
Example option: advanced wastewater treatment with **biological nitrogen removal**

Puget Sound Nutrient Reduction Project Timeline

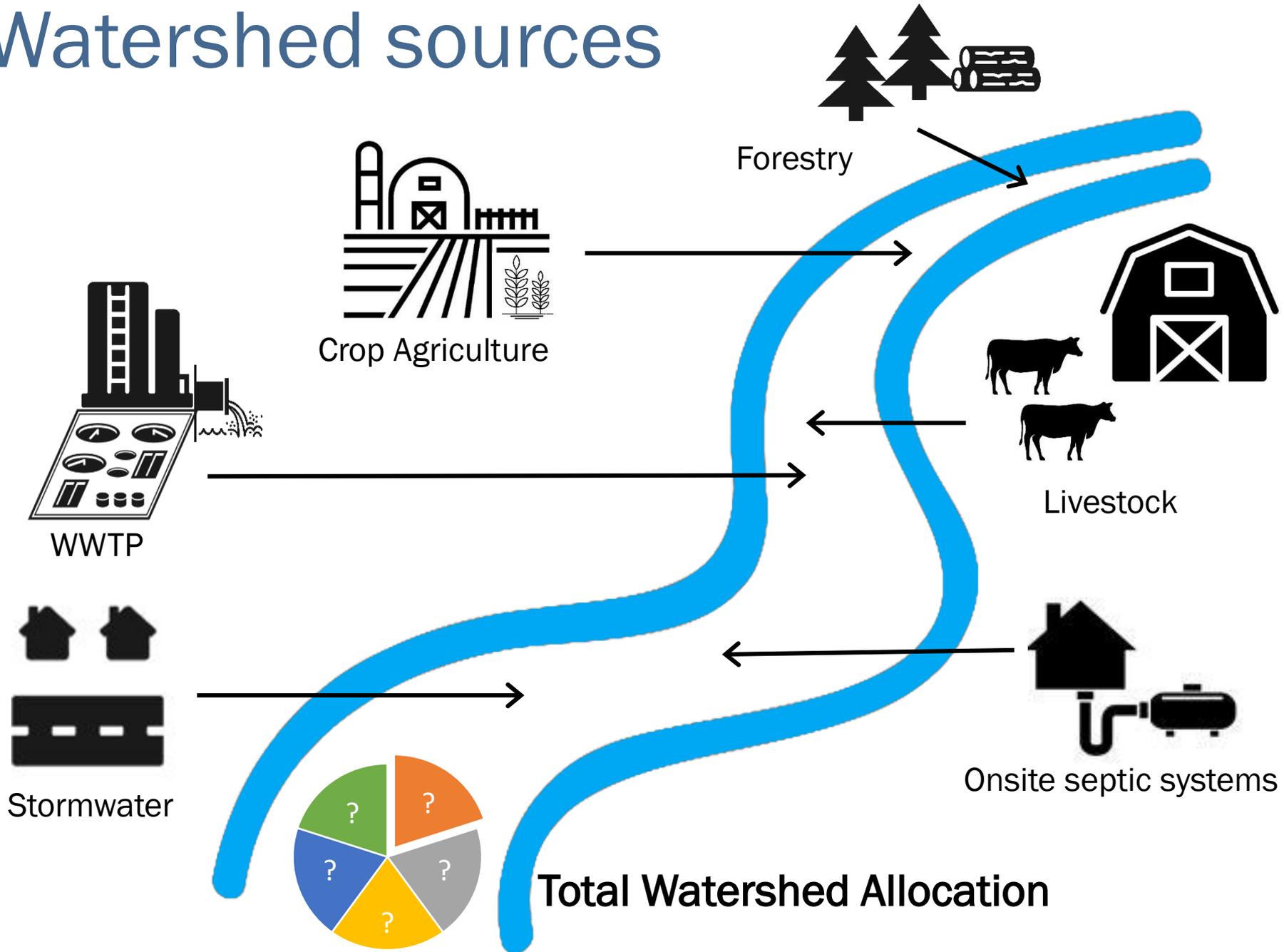


Nutrient Reduction Targets for Watershed

(Load Allocations)



Watershed sources



Near-term strategy: Known Problems



Address failing septic systems



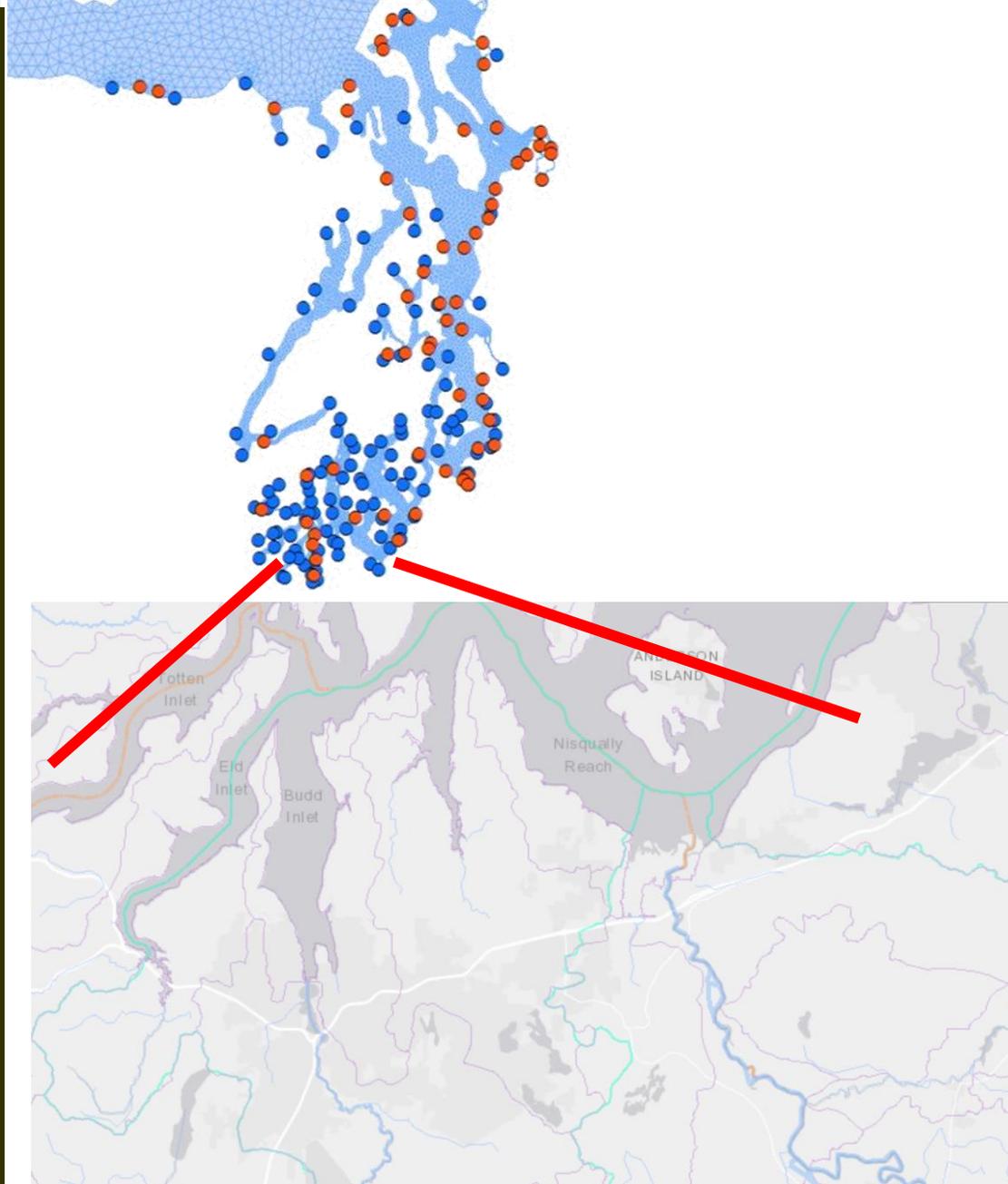
Agricultural BMPs



Support forestry practices

Long-term
strategy:

Narrowing the
focus on
watershed
implementation



Questions?

Chapters 5-8

Nutrient Load
Allocations

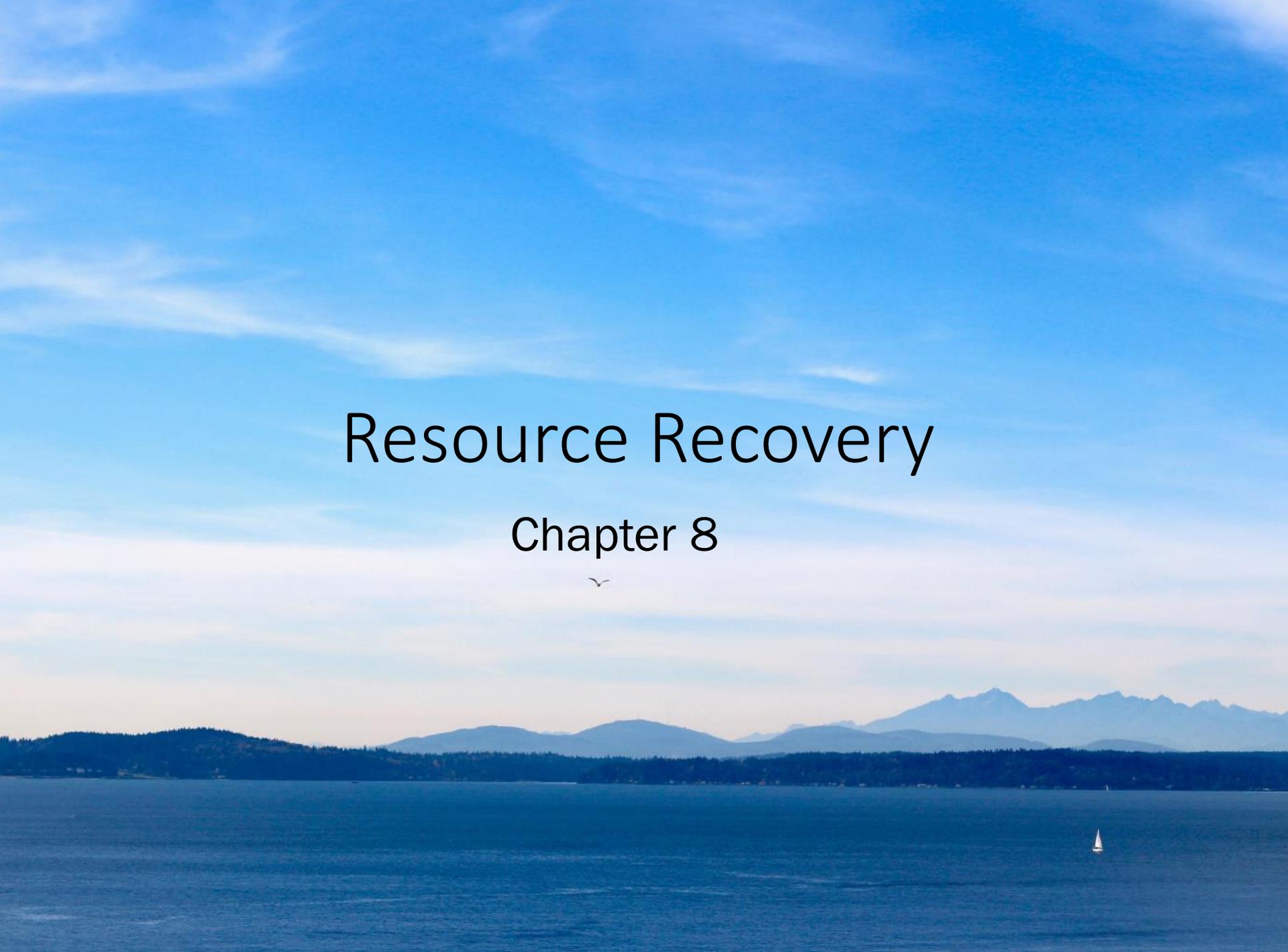
&

Strategies for point and
nonpoint source
implementation



Resource Recovery

Chapter 8



Reducing nutrients supports other Puget Sound Recovery Efforts



Nutrients are a Resource

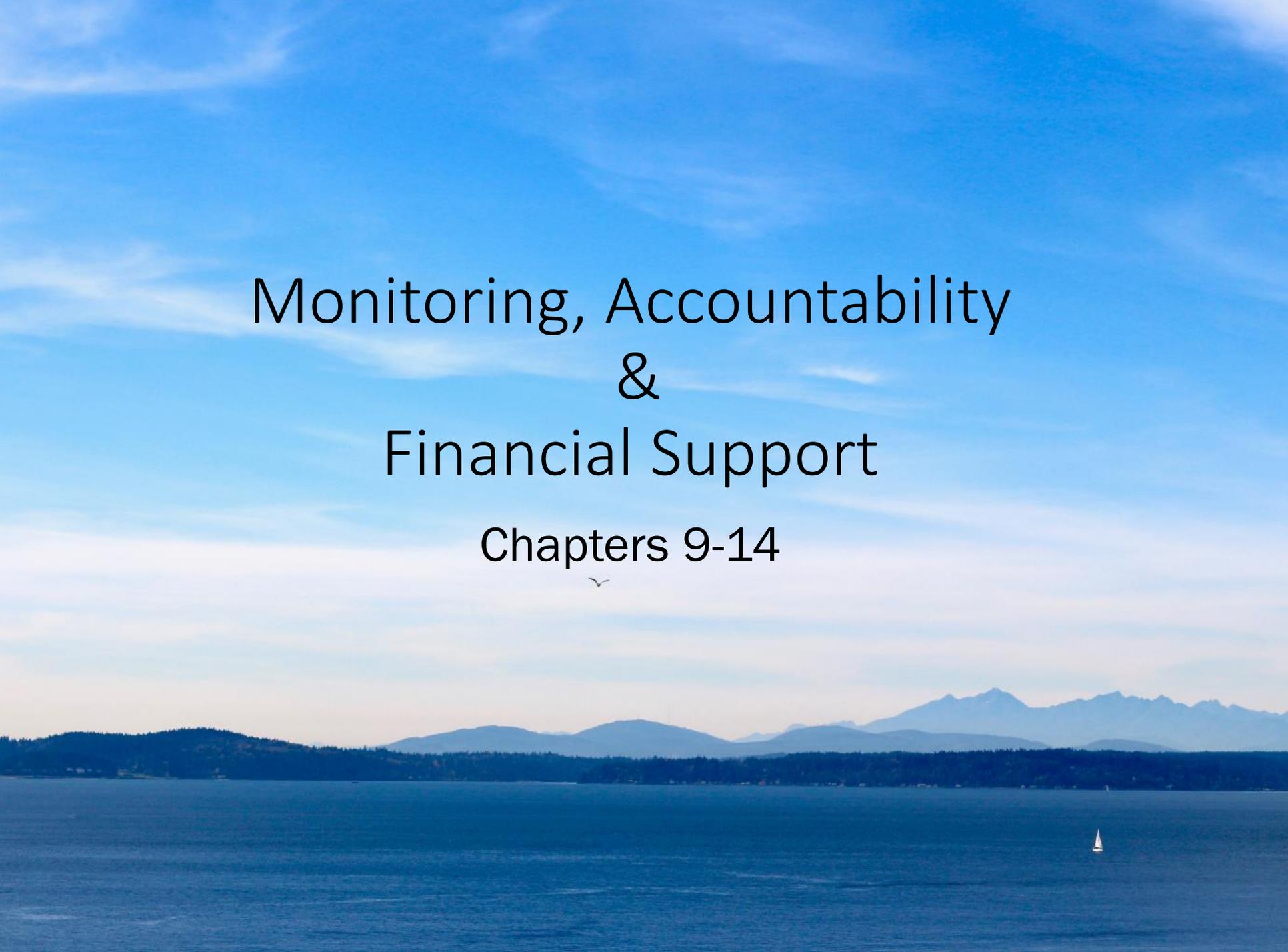
What happens with the nutrients we don't discharge to Puget Sound?

What is the value and benefits of nutrient recovery and reuse?



August 7, 2020 Forum

Nutrient management in watersheds:
technology solutions and successful
partnerships



Monitoring, Accountability & Financial Support

Chapters 9-14

Marine Water Quality Monitoring

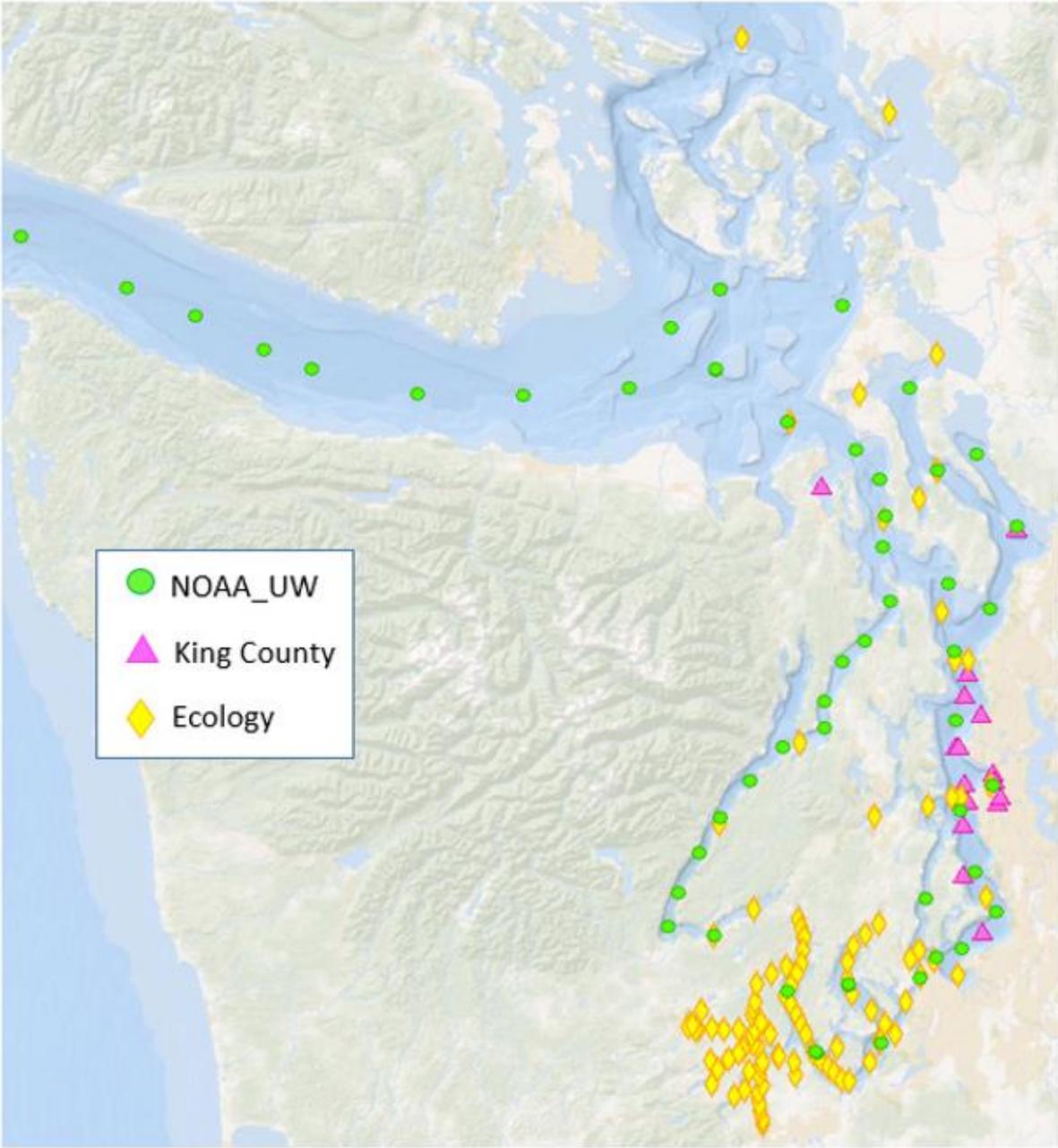


Figure 9. Locations of marine monitoring stations used for water quality calibration checks.

Tracking Implementation Progress

- ✓ Reasonable assurances and accountability
- ✓ Checklist of actions
- ✓ Milestones and interim objectives



Water Quality Permitting and Reporting Information System (PARIS)

Permits/Applications

Compliance and Violations

Inspections and Enforcements

Help

More Water Quality Info

Inspections

Enforcements

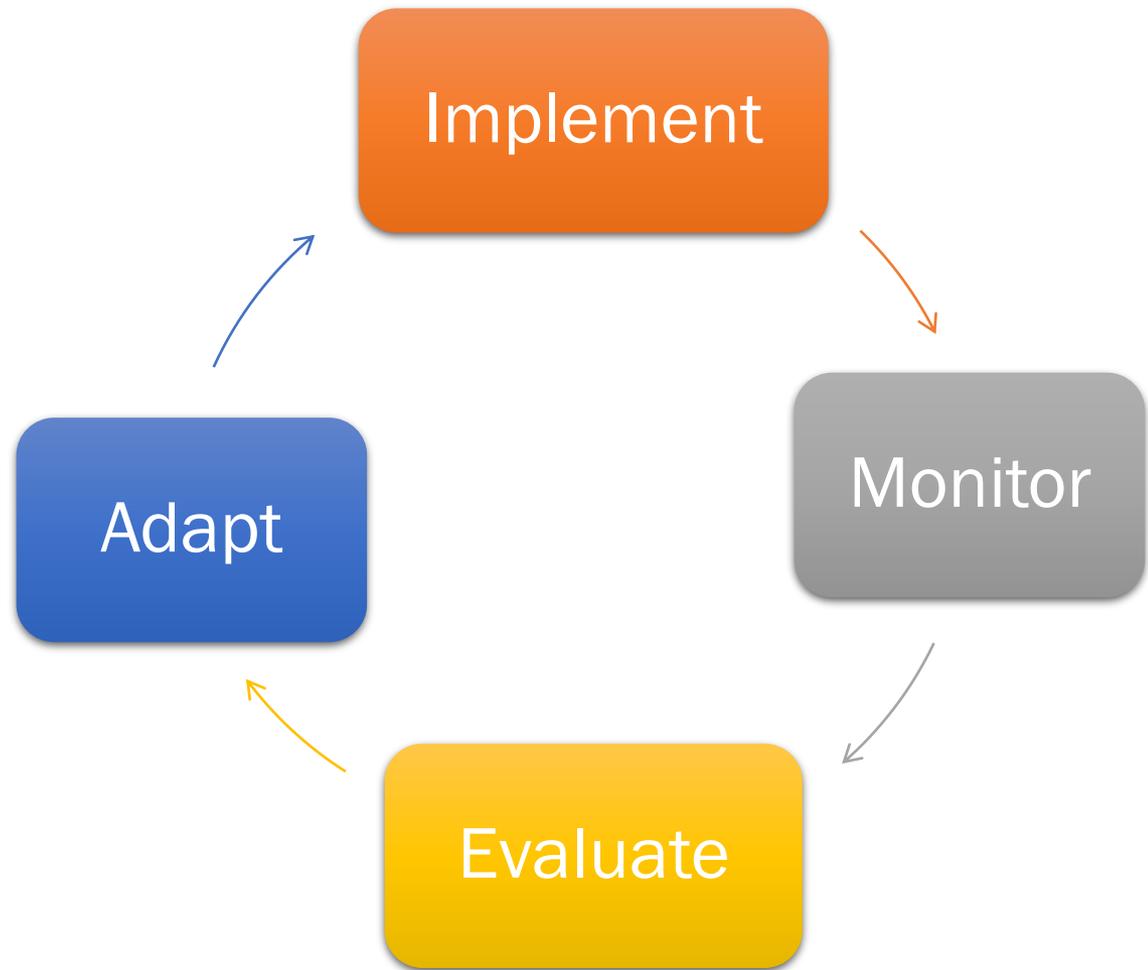
Facilities w/o Inspections

Look up a permit:

Enter PermitNumber or PermitType or FacilityName or Address or City or County or Zipcode or Region

Show Inactive Permits

Adaptive Management



Costs and Financial Assistance



Estimated
funding needs



Federal and
State grant and
loan programs



Other funding
opportunities

Outreach & Education



What do you need to educate your constituents, ratepayers, and communities?

Next Steps: We want your feedback

- 1) Is the outline complete? Are we missing anything?
- 2) Do you see where your agency or organization fits into this plan for reducing nutrients?
- 3) What can we put in the Plan to help guide local implementation actions?

Please submit feedback through eComments form by June 12, 2020:

<http://wq.ecology.commentinput.com/?id=dhTus>

Questions?

Please type your questions
into the chat box.



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State of Washington

Upcoming Forum Meetings

Summer:

Year 1 Modeling Results

Year 2 Optimization Scenarios

Fall TBD:

Finalization of Year 2 modeling

Fall TBD: Nonpoint source controls



Thank you!



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