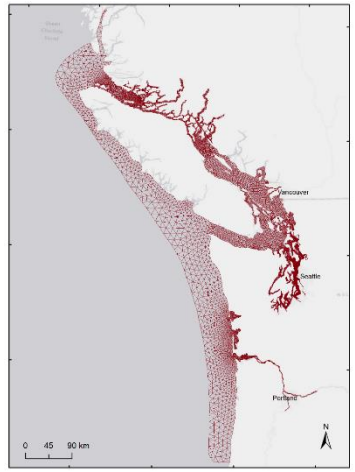
# Puget Sound Nutrient Source Reduction Project



Presentation to

King County Regional Water Quality Committee

May 2, 2018

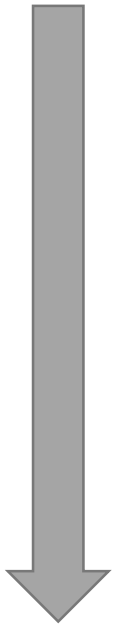
Presented by: Heather Bartlett, Water Quality Program Manager
Ellie Key, P.E., Permitting Policy Lead

# Why focus on nutrients now?

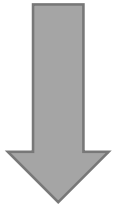
- Reducing nutrients is a **national priority** for EPA
- **Ten years of science** show us:
  - Human sources of nutrients are impacting Puget Sound
  - That we need to do something about it
- Public comments **question a lack of requirements** to reduce nutrients in WWTP permit renewals
- **EPA has been petitioned** to revoke Ecology's NPDES program delegation for failing to address nutrients

# Dissolved oxygen work in Puget Sound

**Develop model**



**Apply model**



- **2003-2006**
  - Deschutes River/Budd Inlet TMDL shows us that dissolved oxygen and human sources of nutrients are a regional problem
- **2006-2014**
  - South Sound Dissolved Oxygen Model developed
  - Salish Sea Model (SSM) preliminary development
- **2014-2017**
  - Sediment Diagenesis Module added to SSM
  - Ocean Acidification Module added to SSM
- **2017**
  - Project scoping and stakeholder outreach
  - Puget Sound Nutrient Dialogue
- **2018-2022**
  - Develop a nutrient reduction plan

# Puget Sound Nutrient Source Reduction Project

*Project Vision:*

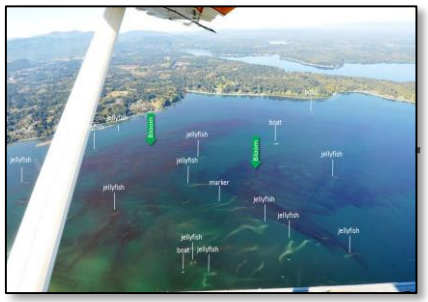
***Develop and implement a plan*** *to reduce nutrient sources in Puget Sound to* ***guide regional investments*** *in point and nonpoint source nutrient controls so that Puget Sound will* ***meet water quality criteria*** *and* ***protect aquatic life*** *designated uses by 2040.*

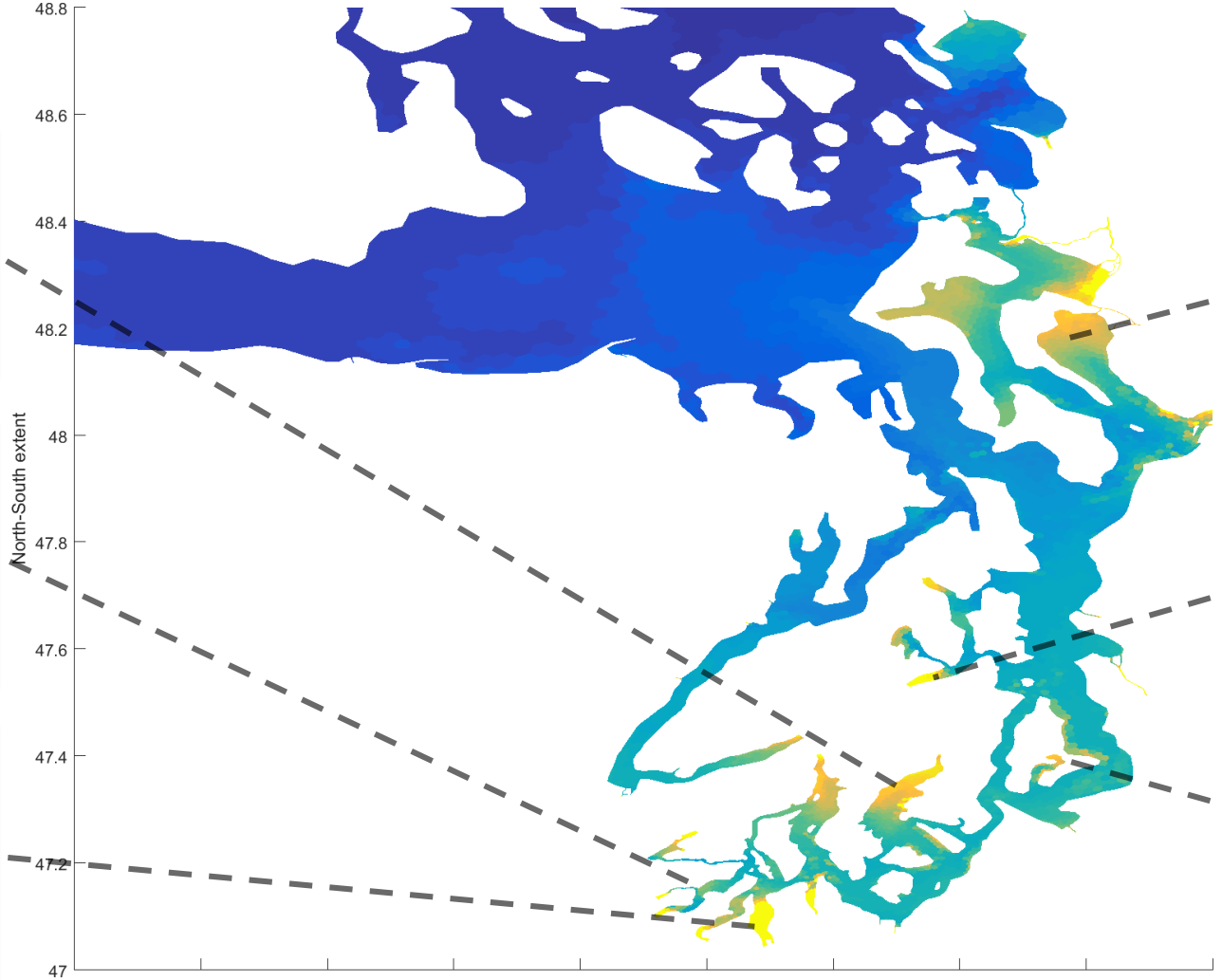
# Model and monitoring results agree – human sources of nutrients are having an impact on Puget Sound

**Maximum depletion of DO by regional anthropogenic sources**

Jan. 1, 2016 to Dec. 31, 2016

Indicators of eutrophication

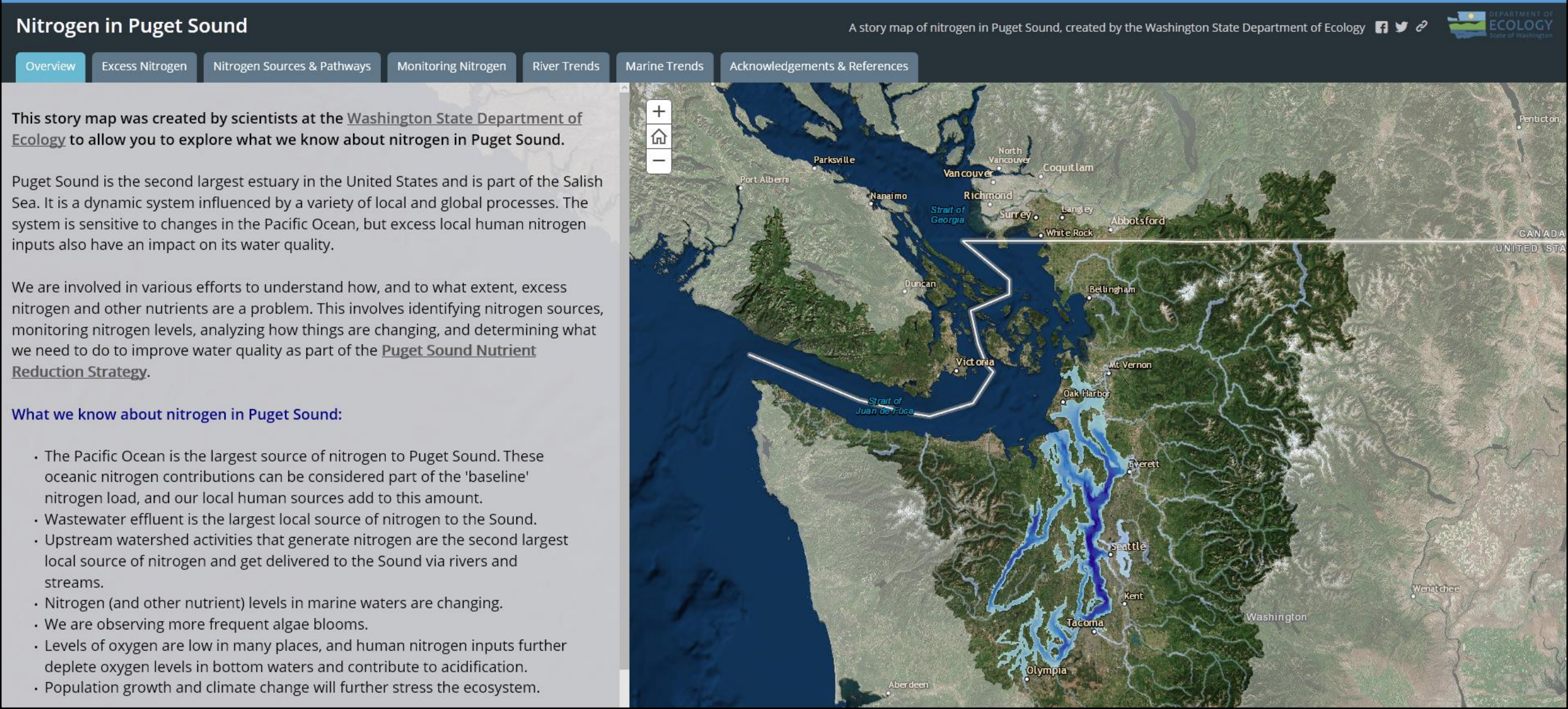





Indicators of eutrophication

# Nitrogen in Puget Sound story map

Explore this story map at **Bit.ly/nitrogenstorymap**



# How does the region continue to grow



## and reduce nitrogen and carbon impacts

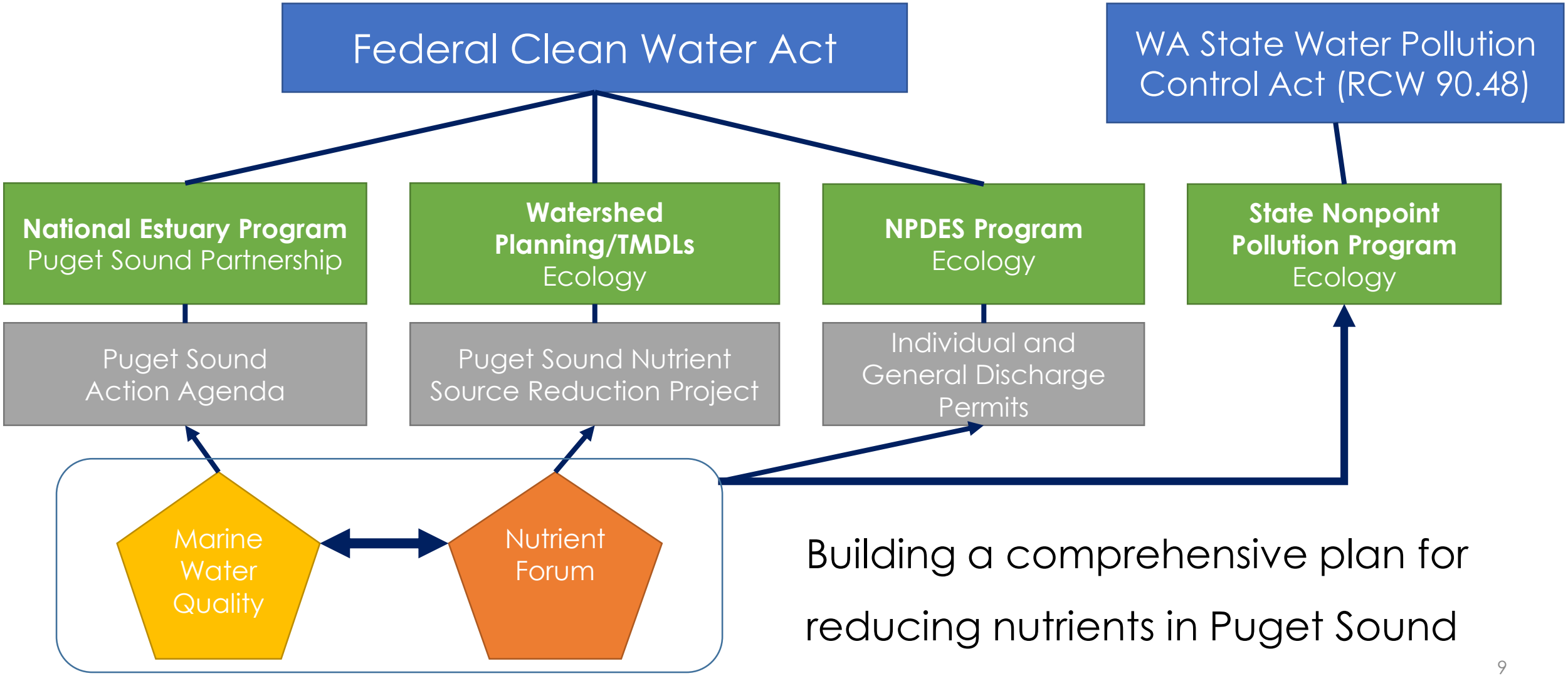



## so that we **protect this**

# Feedback sought on key high-level issues

- Extent of available science
- Application of water quality standards
- Nutrient sources and options to reduce
- Strategies used in other parts of the country to reduce human sources of nutrients
- Options for Puget Sound to reduce both point and non point sources of nutrients
- Opportunities and challenges for addressing human sources of nutrient loading in Puget Sound

# Regulatory connections




Building a comprehensive plan for reducing nutrients in Puget Sound

# Integrating two processes

**Puget Sound Partnership Action Agenda Process**

**Marine Water Quality Implementation Strategy**

- Interdisciplinary group
- Broader Puget Sound restoration focus and connection with EPA's National Estuary Program
- Develop BIG picture implementation strategy
- Part of Action Agenda

Inform and collaborate

- Cross-membership
- Both have input on work products
- Both will inform exploration of potential solutions

**Ecology's Public Advisory Committee Process**

**Puget Sound Nutrient Forum**

- Broad representation of stakeholders and tribes
- Examine regulatory aspects of solutions for reducing point sources
- Identify ways to implement solutions for point and nonpoint nutrient sources

**Salish Sea Model**

- Run scenarios for different source reduction strategies
- Quantify benefits and ensure investments will meet water quality criteria and Puget Sound recovery goals

# Objectives of the Nutrient Forum

**Inform the development of a nutrient reduction plan and find the best solutions for reducing human sources of nutrients.**

Ensure solutions are:

- Effective
- Implementable
- Efficient

Achieve this objective by:

- Being transparent
- Engaging others
- Listening

Hold about 10 meetings over the next year.

# What will implementation look like?

- Putting activities into practice on the ground that reduce nutrients from point and nonpoint sources
- Setting nutrient load allocations that meet Puget Sound water quality objectives
- Solutions will drive how implementation happens

Objective:

Implement the **right actions** – in the **right order** – to start improving water quality **as soon as possible**.

# What this could mean for King County?

- Nutrient reduction requirements for wastewater treatment facilities
  - Focus on total inorganic nitrogen and CBOD reductions
  - Phased approach with many possible permitting solutions
- Nutrient controls in municipal stormwater permits
- Identifying opportunities for reducing nonpoint sources of nutrients within key watersheds
- Prioritizing regulatory requirements
- Opportunities to find creative and effective solutions

# Questions?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