Willamette Basin Mercury TMDL Advisory Committee Meeting

Overview of TMDL Process and 2006 Mercury TMDL

Dec. 5, 2017

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Paula Calvert | Oregon Department of Environmental Quality

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Overview

- TMDL Process
  - What is a TMDL?
  - How do TMDLs fit in the regulatory framework?
  - TMDL development
  - TMDL implementation

- 2006 Mercury TMDL
  - Modeling approach
  - Water Quality Management Plan
  - April 2017 court decision

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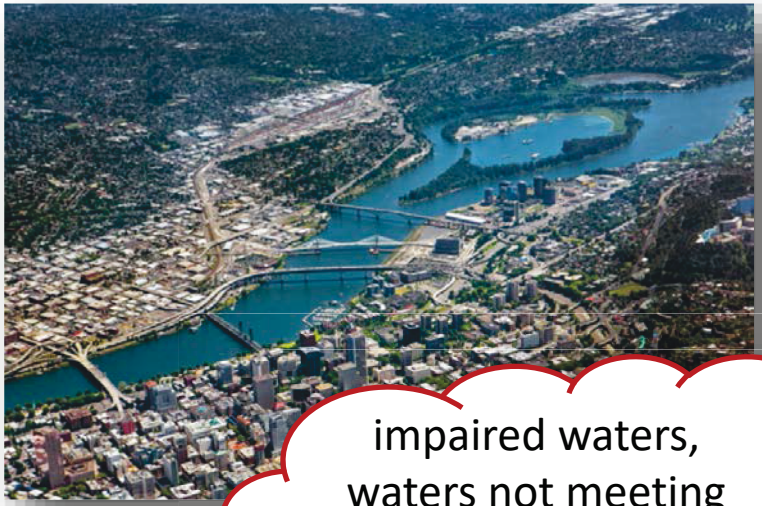
What is a TMDL?

- A TMDL is the maximum amount of a pollutant allowed in a waterbody and serves as the starting point or planning tool for restoring water quality

- Oregon must develop TMDLs for impaired water bodies

- Impaired waterbodies can be impacted by nonpoint source and point source pollution



impaired waters, waters not meeting their water quality standards

How do TMDLs fit in the regulatory framework?

Identify water quality concerns → Develop TMDL → Stakeholder participation in meeting water quality goal

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How do TMDLs fit in the regulatory framework?

Identify water quality concerns

Defines Water Quality Goal

- Adopt Water Quality Standards

Asses Water Body Condition

- Monitor and Asses Water

303(d) Program

- List Impaired and Threatened Waters

TMDL Program

- Develop TMDLs
  - How much of any one pollutant can a waterbody assimilate?
  - **WLA+LA+MOS=TMDL**

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TMDL Process

- Identify water quality concerns
- Identify sources and conditions contributing to concerns
- Link sources and conditions to water body
- Calculate loads reductions to restore water quality

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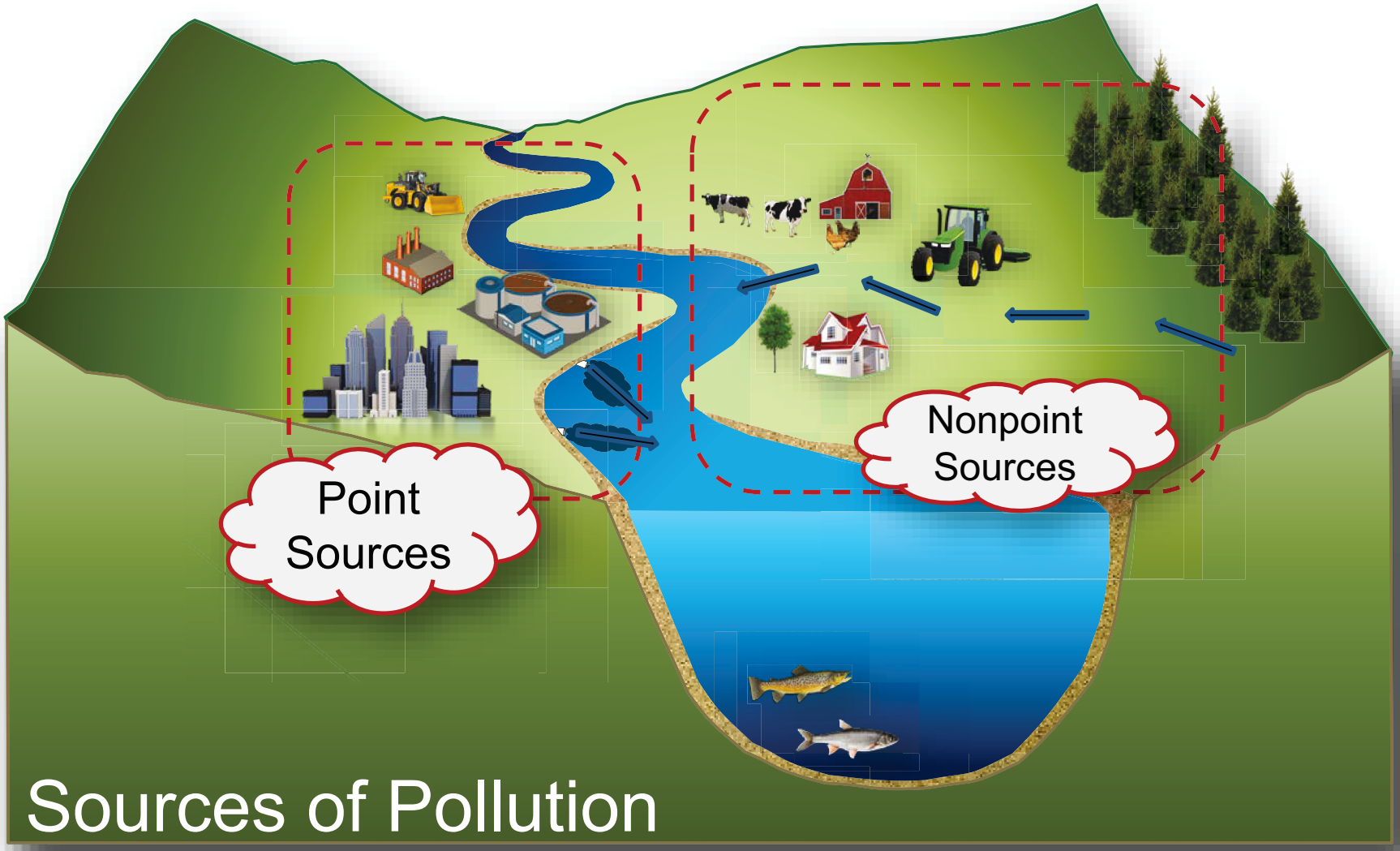

Sources of Pollution

TMDL Equation

TMDL = LA + WLA + MOS + RC

- LA – Load Allocation (nonpoint sources)
- WLA – Waste Load Allocation (point sources)
- MOS – Margin of Safety
- RC – Reserve Capacity
- LC – Load Capacity

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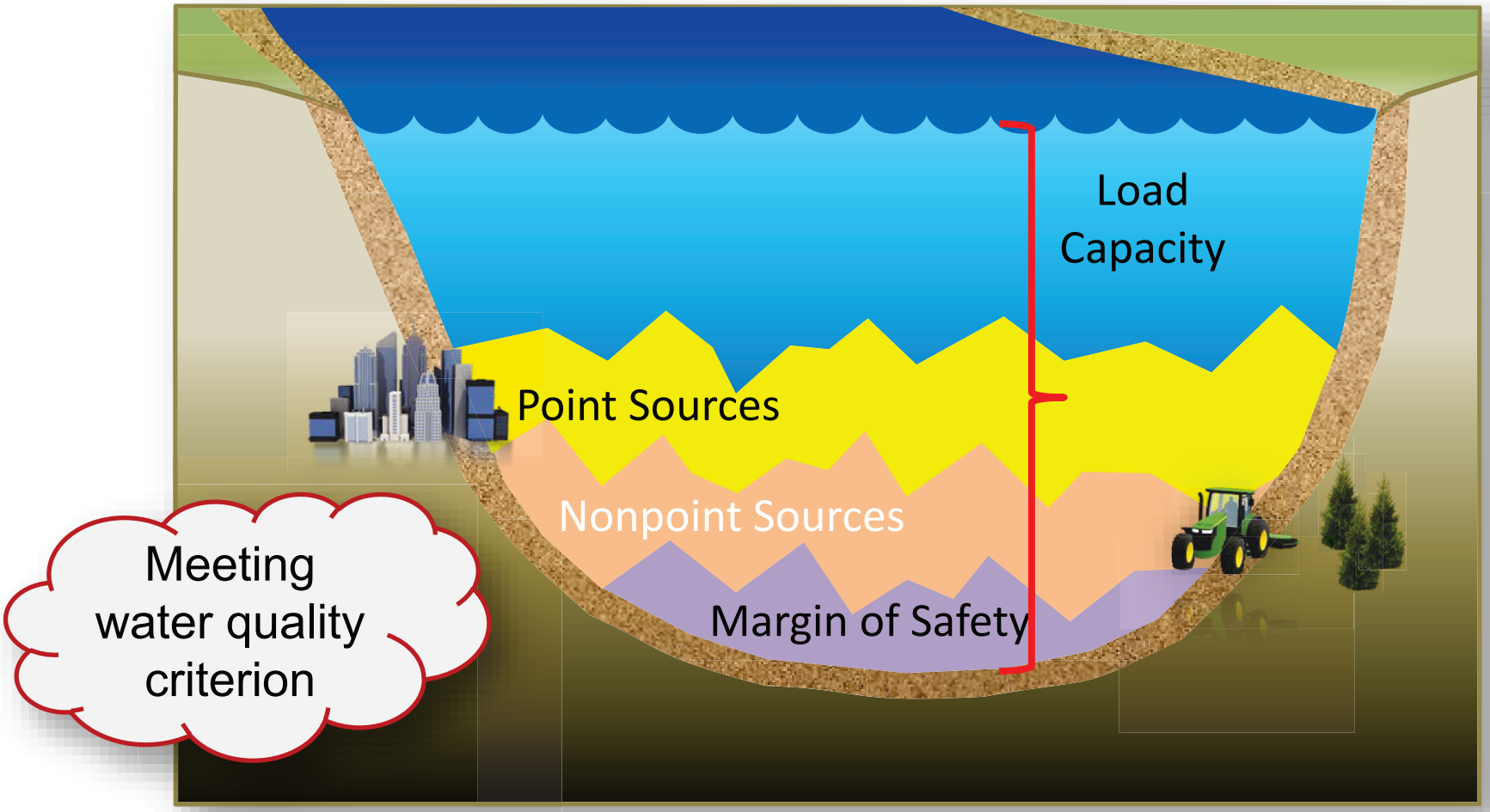
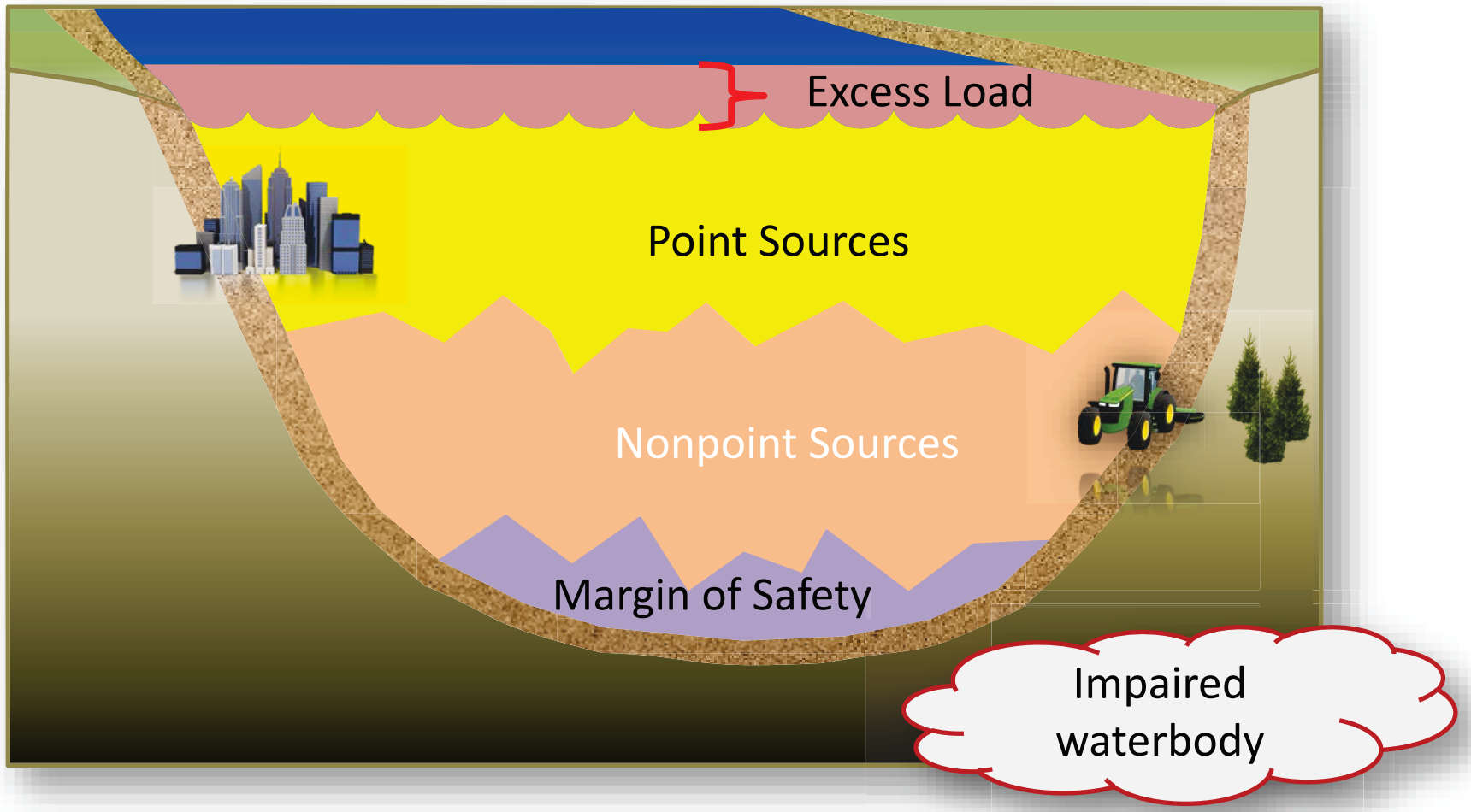


Conceptual example


Excess Load
Point Sources
Nonpoint Sources
Margin of Safety
Impaired waterbody

TMDL Elements

- Source assessment
- Linkage analysis (connect pollution to a source)
- Loading capacity
- Excess load
- Allocations (pollution targets)
  - Surrogate measures
- Reserve capacity
- Margin of safety
- Water Quality Management Plan

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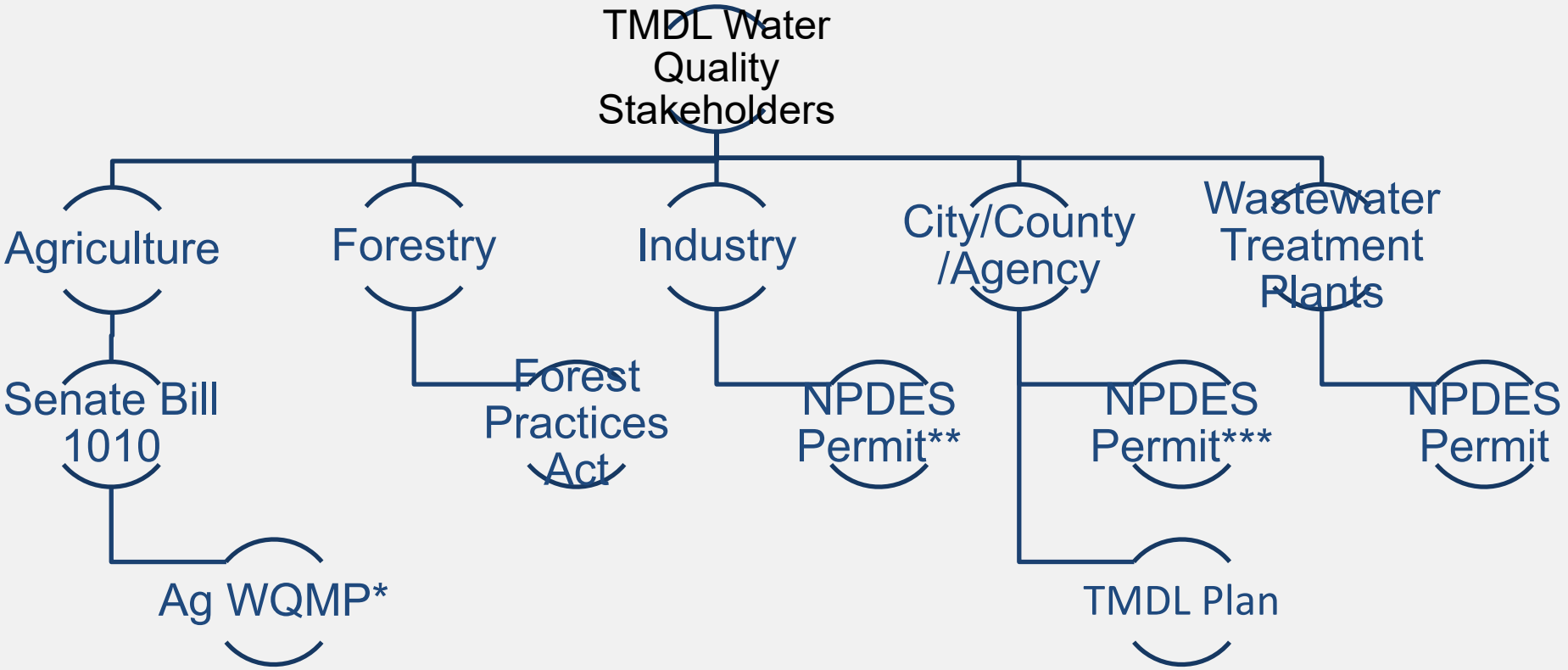
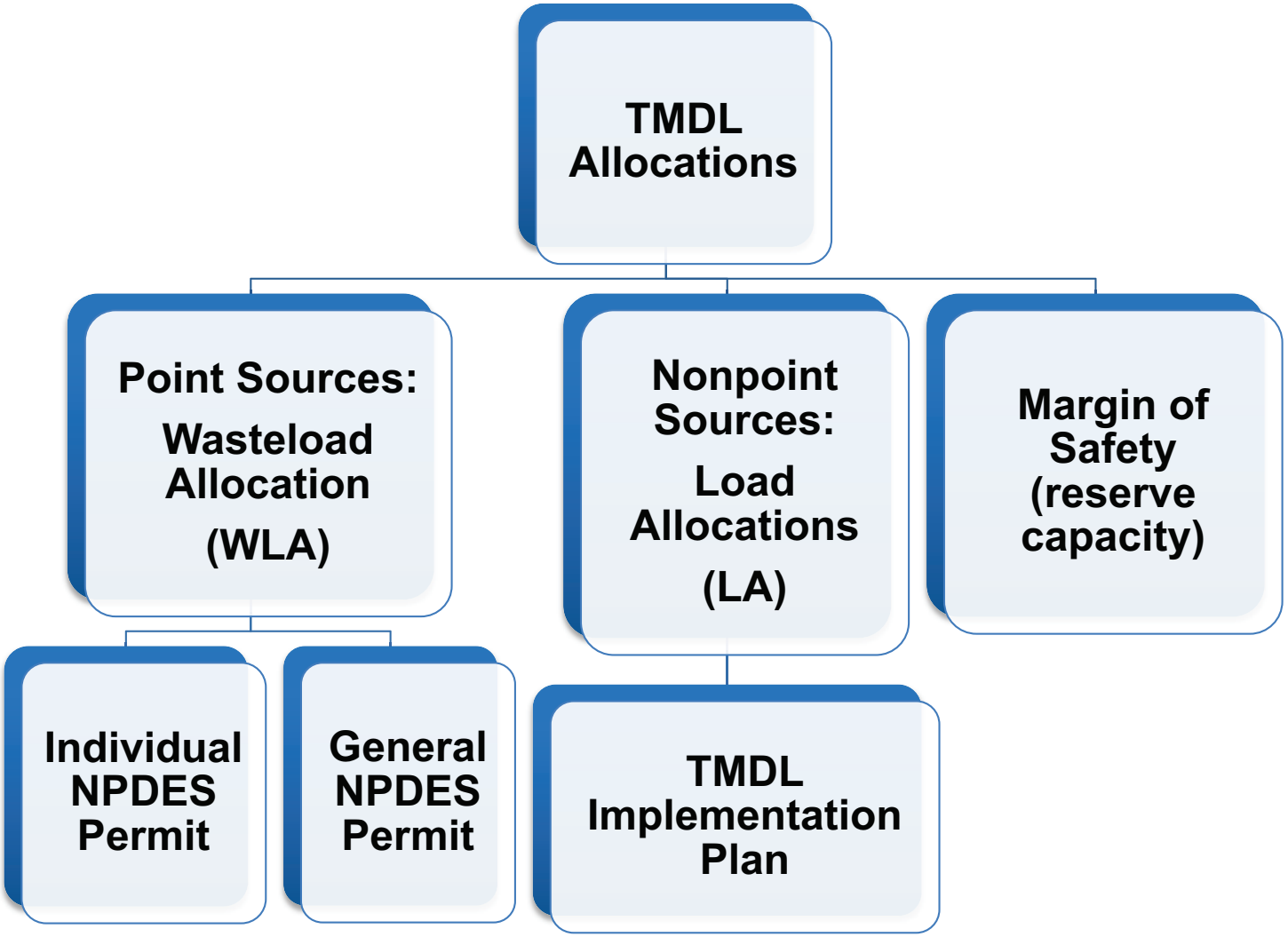
TMDL Implementation



* Agricultural Water Quality Management Area Plan
**National Pollution Discharge Elimination System Permit
***Not all municipalities are required to obtain a Municipal Separate Storm Sewer System (MS4) Permit

TMDL Implementation



2006 Mercury TMDL

- Technical approach
  - Food web model
    - 0.3 mg/kg methylmercury in fish tissue
  - Mass balance model
    - Data limitations
  - Mercury translator
    - Monitoring considerations

- Water Quality Management Plan
  - Source sector allocations
  - Mercury minimization plans
  - Data collection

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2006 Mercury TMDL

- April 2017 court decision effecting TMDL revision
  - Waste load allocations for permitted sources
  - Daily loading capacity of mercury
  - TMDL written to meet current standard of 0.040 mg/kg methylmercury in fish tissue
  - Include data collected after 2006 TMDL development

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2006 Mercury TMDL
April 2017 court decision

TMDL Considerations	Willamette Basin Mercury TMDL	
	2006	2019
Criterion for methylmercury in fish tissue	0.3 mg/kg	0.040 mg/kg
Evaluation of source contribution	Daily loading capacity not determined	Daily loading capacity required
Implementation strategy	Sector allocations for mercury	WLAs for permitted sources

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Questions