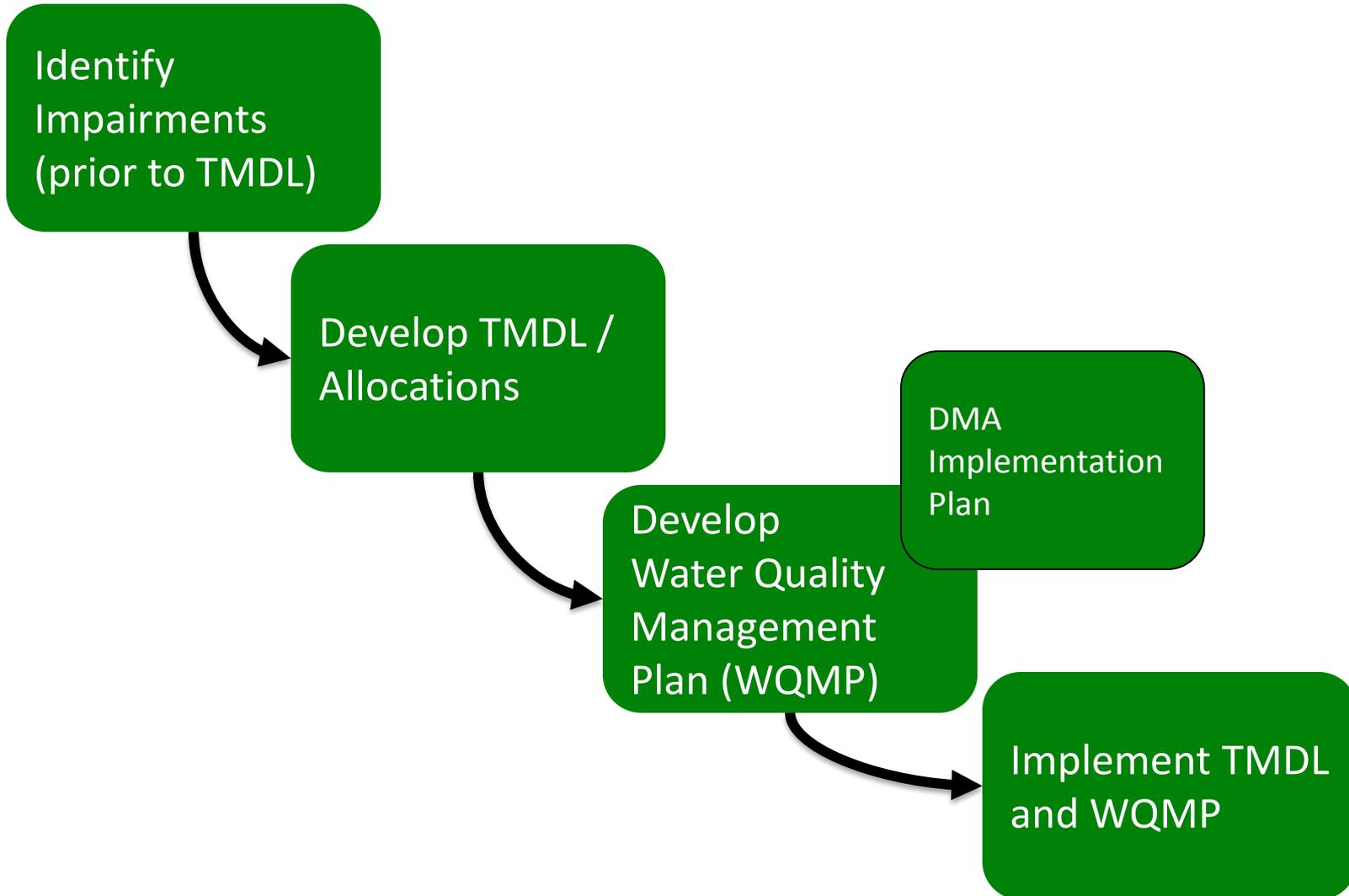


Total Maximum Daily Load (TMDL)
and
Water Quality Management Plan (WQMP)
Primer

Ryan Michie, ODEQ

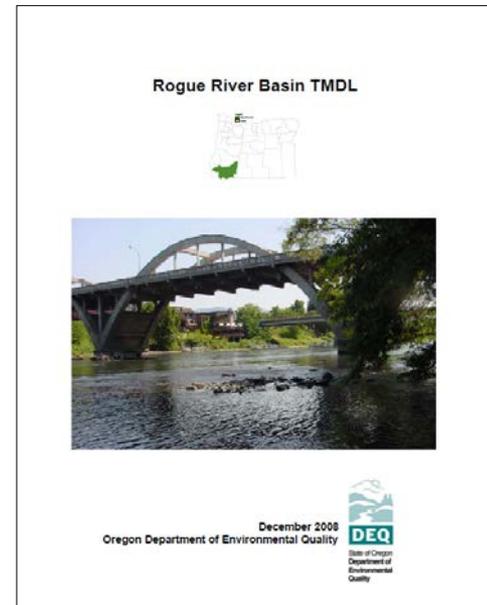
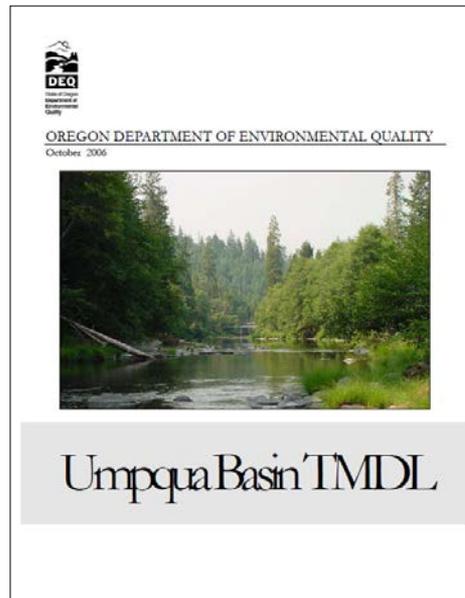
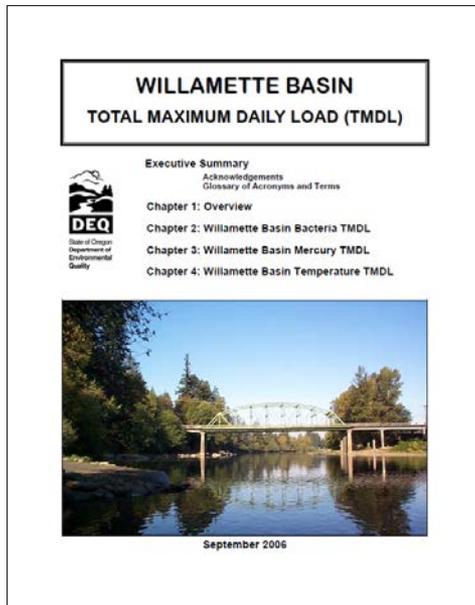
Water Quality Trading Policy Forum
Wednesday March 5, 2015
Salem, Oregon

Oregon TMDL Process



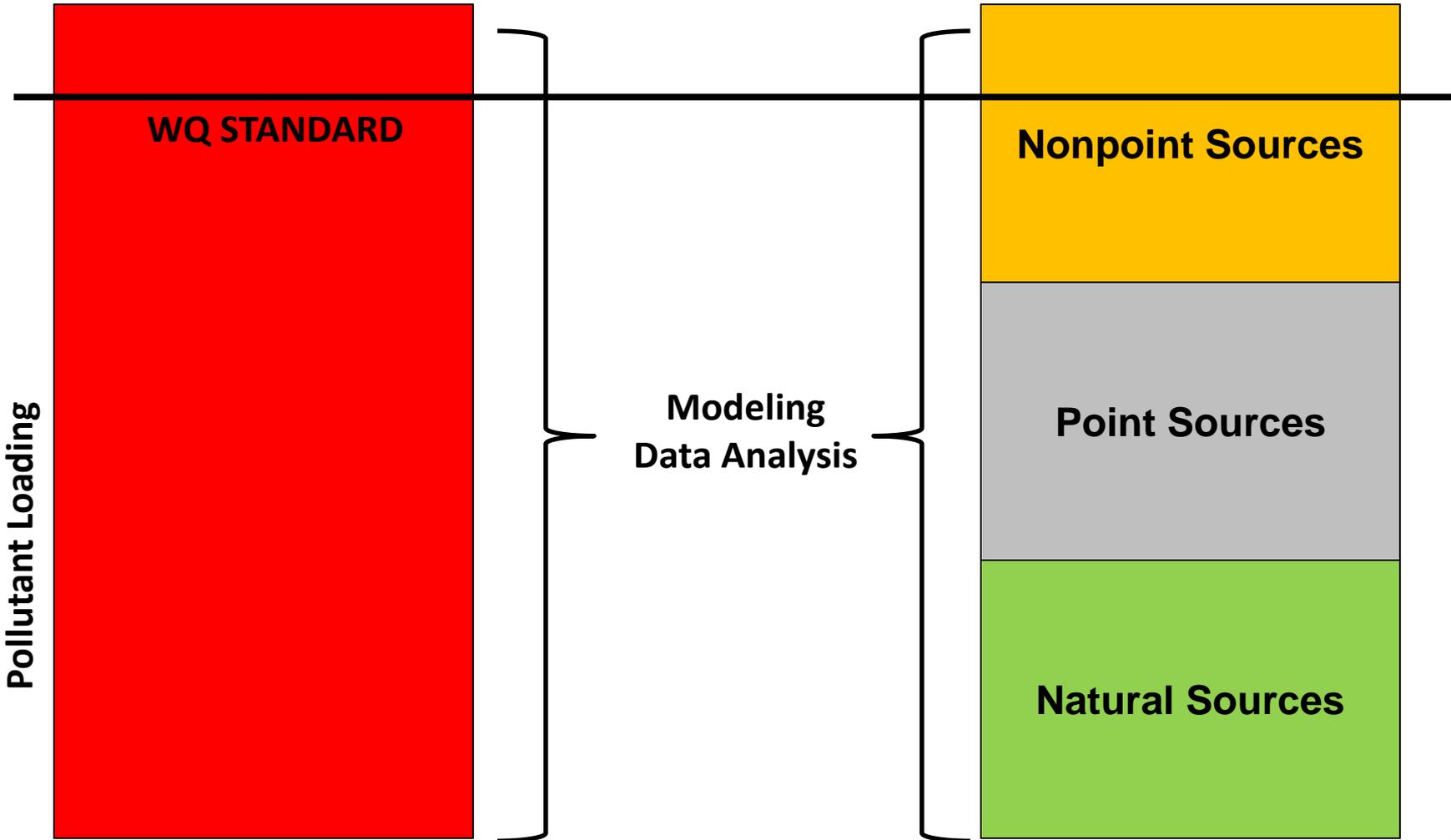
What is a TMDL?

Calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.



**Current Conditions
303(d) list**

**Source Assessment
Linkage Analysis**



Pollutant Loading

WQ STANDARD

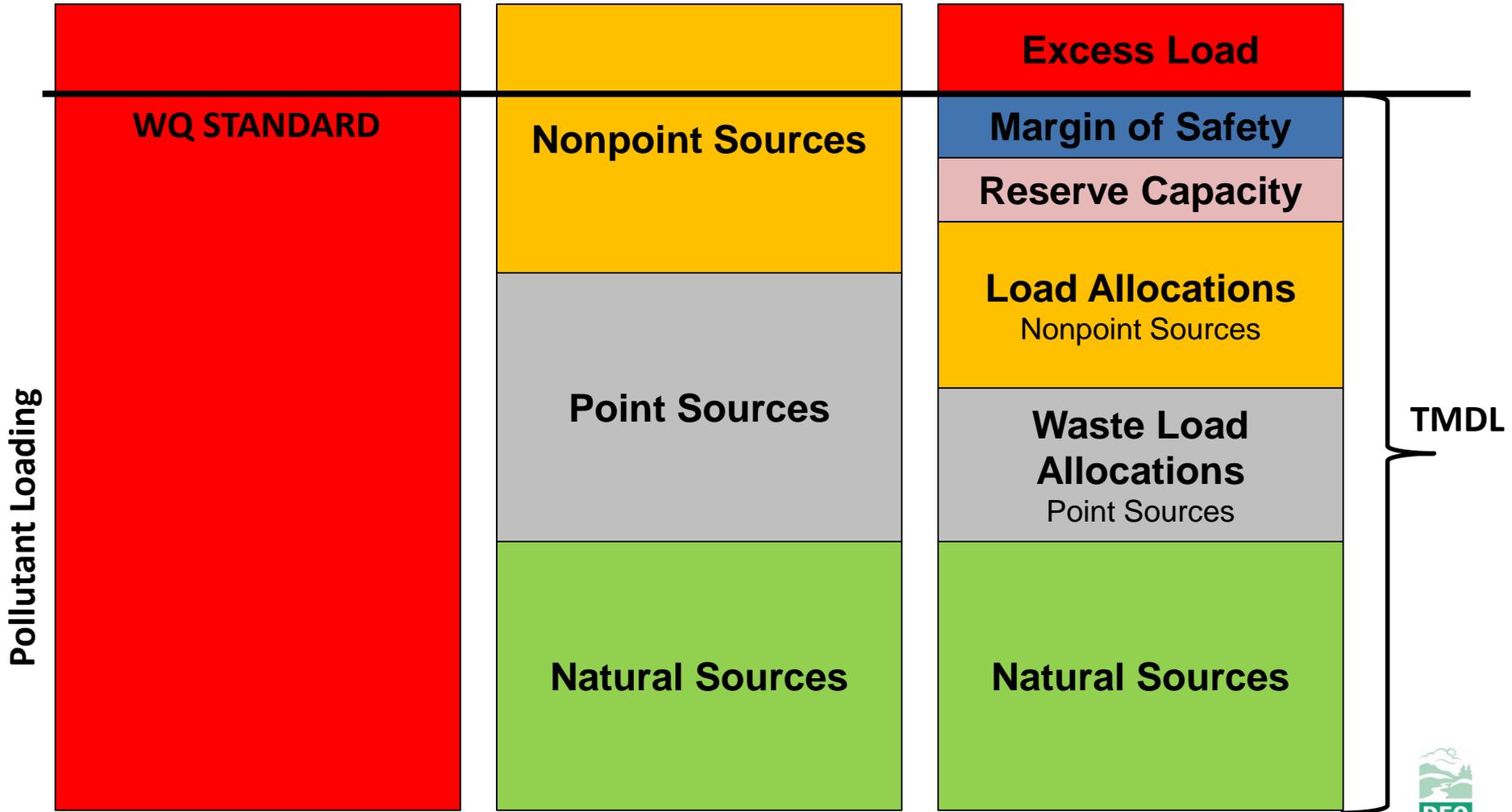
Nonpoint Sources

Point Sources

Natural Sources

Modeling
Data Analysis

**Current Conditions
303(d) list**



TMDL Elements

- **Water Quality Standards**
- **Impairments**
- **Source Assessment**
- **Linkage Analysis (connect pollution to a source)**
- **Loading Capacity**
- **Excess Load**
- **Allocations**
 - **Waste Load Allocations**
 - **Load Allocations**
 - **Surrogate Measures**
- **Reserve Capacity**
- **Margin of Safety**

Margin of Safety

Accounts for uncertainty related to estimating pollutant loads, modeling water quality, and monitoring water quality.

- Lack of Data
- Pollutant Loading/Attenuation/Pathways
- Management Strategy Effectiveness

Margin of Safety

Explicit Margin of Safety

- Quantified portion of allocations set aside
- Example: 10% safety factor

Implicit Margin of Safety

- Protective assumptions built into the analysis
- Example: Assuming no attenuation in thermal pollutant loads moving downstream

Load Allocations

Pollutant loads allocated to nonpoint sources and natural background.

Identified via modeling/data analysis

Assigned to major/significant sources

Major Water Quality Management Plan Elements

- **Proposed management strategies**
- **Timeline for implementing management strategies**
- **Timeline for attainment of water quality standards**
- **Identification of persons or Designated Management Agencies (DMAs)**
- **Identification of Existing Pollution Control Plans**
- **Schedule to develop new Implementation Plans**
- **Reasonable Assurance**
- **Monitoring Plan**
- **Estimated Implementation Costs and Funding**

TMDL/WQMP and WQ Trading

- **Pollutant Sources**
- **Pollutant Attenuation**
- **Sources of Uncertainty**
- **Priority**
- **Timeline for implementing management strategies**
- **Reasonable Assurance**
- **Monitoring Plan**