Planning: Basin Plans & Water Quality Standards

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Water Quality Standards
(see 40 CFR 131)

- Provisions of State/Tribal (or Federal) Law
  - Designated Uses
  - Criteria to protect those uses
  - Antidegradation policy

- Water Quality Standards are to:
  - Protect public health or welfare
  - Enhance the quality of the water
  - Serve the purposes of the Act

Water Quality Standards In California

Water Quality Standards include

- **Beneficial Uses**
  for each water body or portion thereof
- **Water Quality Objectives**
  (criteria) to protect uses

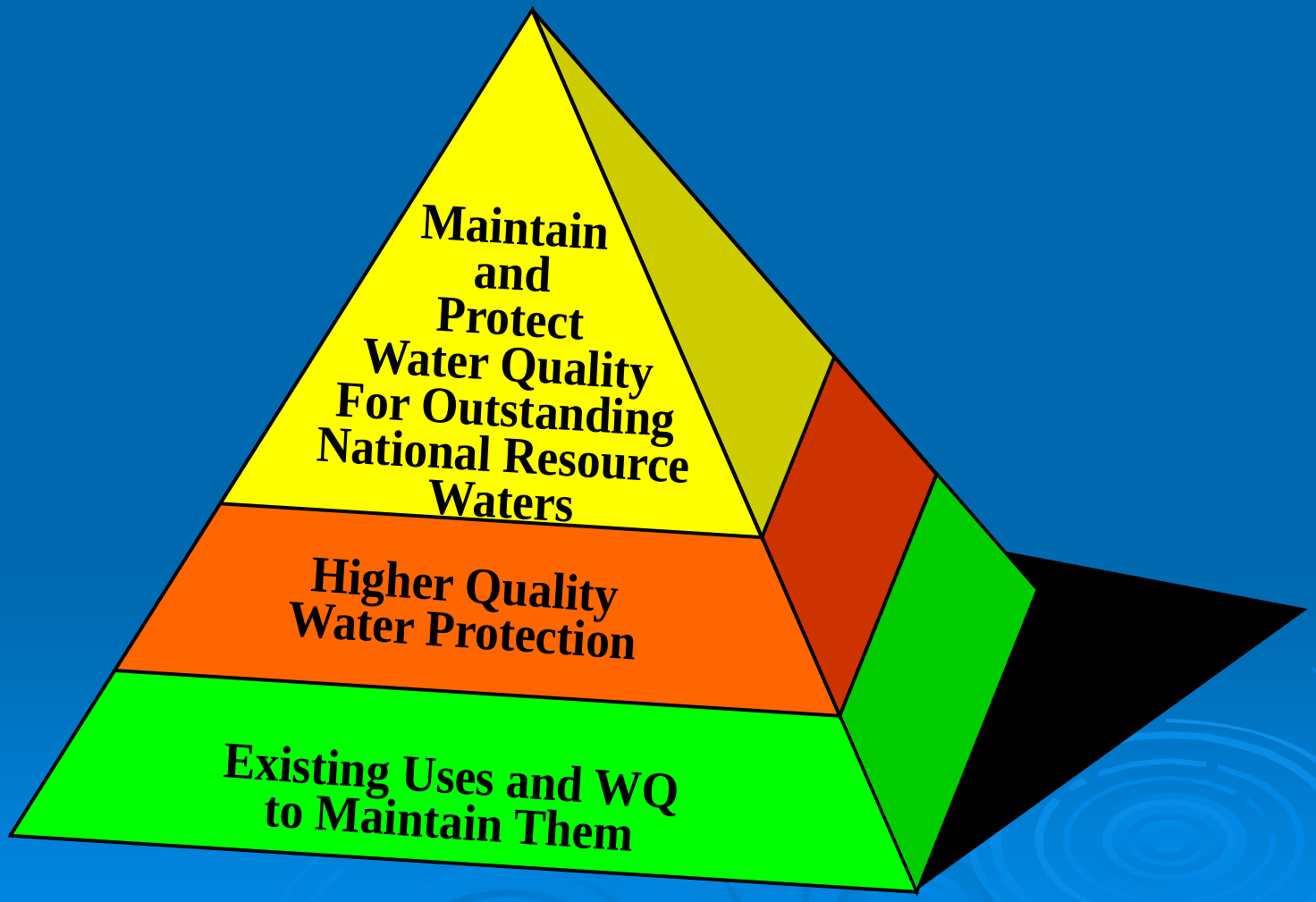
Porter-Cologne Act also requires

- **Implementation Programs**
  to achieve the objectives

Designated Uses (40 CFR 131.10)

- Protection and propagation of fish, shellfish and wildlife
- Recreation in and on the water
- Public water supply
- Agriculture
- Industry
- Navigation
- Others

Antidegradation Policies (40 CFR 131.12)



Water Quality Control Plans

Water Quality Control Plans

- Regional WQ Control Plan = Basin Plan

- 10 Regional Water Quality Control Plans
  - 9 Regions in CA
  - Region 5
    - Sacramento & SJR Basins
    - Tulare Lake Basin

Basin Plan

- What are Water Quality Objectives?
  - CWC §13050 (h)
    - The limits or levels for
      - the protection of beneficial uses
      - or the prevention of nuisance within a specific area.

Basin Plan

- Dart Board Method?
  - CWC §13241. Water quality objectives
    - Each regional board shall establish WQOs in Basin Plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the WQ to be changed to some degree without unreasonably affecting beneficial uses.

Basin Plan

- CWC §13241. Water quality objectives
  - (a) Past, present, and probable future beneficial
  - (b) Environmental characteristics of the hydrographic unit
  - (c) Water quality conditions
  - (d) Economic considerations
  - (e) The need for developing housing within the region
  - (f) The need to develop and use recycled water

Basin Plan

- Implementation Plans
  - CWC §13242. Implementation

    (a) A description of the nature of actions which are necessary to achieve the objectives

    (b) A time schedule

    (c) A description of surveillance to determine compliance with objectives.

Statewide Plans

- Ocean Plan
- Thermal Plan
- Bay-Delta Plan
- Enclosed Bays and Estuaries Plan – Part I Sediment Quality Objectives
- Trash Control Policy

Water Quality Assessment

Integrated Report

- USEPA issued guidance in 2006 to states
  - Requires Section 303(d) list and Section 305(b) report to now be integrated
  - The California Integrated Report includes:
    - 303(d) List (List of impaired water bodies)
    - 305(b) Report (Report on overall water quality)

Integrated Report Categories

Category	Description
1	All core beneficial uses are supported.
2	At least one core beneficial use is supported and none are known to be impaired.
3	Insufficient information to determine beneficial use support.
4	At least one beneficial use is not supported but TMDL is not needed.
4a	A TMDL has been developed and approved by U.S. EPA for any waterbody-pollutant combination, and the approved implementation plan is expected to result in full attainment of the water quality standard within a specified time frame.
4b	Another regulatory program is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time frame.
4c	The non-attainment of any applicable water quality standard for the waterbody segment is the result of pollution and is not caused by a pollutant.
5	At least one beneficial use is not supported and a TMDL is needed.

Water Quality Control Policy (Listing Policy)

- Identifies process for requirements of CWA Section 303(d)
- Establish a standardized approach for developing California's Section 303(d) list
- Approved in 2004 and recently amended with changes related to Regional/State Board approval process and "readily available data" definition.

3 Steps for Water Quality Assessment

1) **Data and Information Assembly**

- Data Solicitation and organization

2) **Data and Information Processing**

- Data QA Check
- Determine WQO/WQC
- Develop Line of Evidence (LOE)

3) **Data Assessment**

- Evaluation of all LOES
- Develop Fact Sheets
- Staff recommendations

Pesticide Data Assessment

- Data Sources include (but are not limited to):

- SWAMP
- Municipal dischargers
- Environmental organizations
- Citizen scientist groups

Examples of Objectives Used for Pesticide Data

- Objective from basin plans (including Ocean Plan)
- Primary MCLs
- California Toxics Rule
- U.S. EPA Drinking Water Standards (federal MCLs)
- Sediment Quality Objectives

Examples of Evaluation Guidelines Used for Pesticide Data Assessment

- U.S. EPA Drinking Water Health Advisories
- National Recommended Water Quality Criteria (304(a) criteria)
- Calif. Dept. of Fish and Wildlife Hazard Assessment Criterion
- UC Davis criterion
- U.S. EPA Aquatic Life Benchmarks
- High quality toxicity studies
  - Peer reviewed studies
  - Studies from the U.S. EPA Office of Pesticide Programs Ecotoxicity Database
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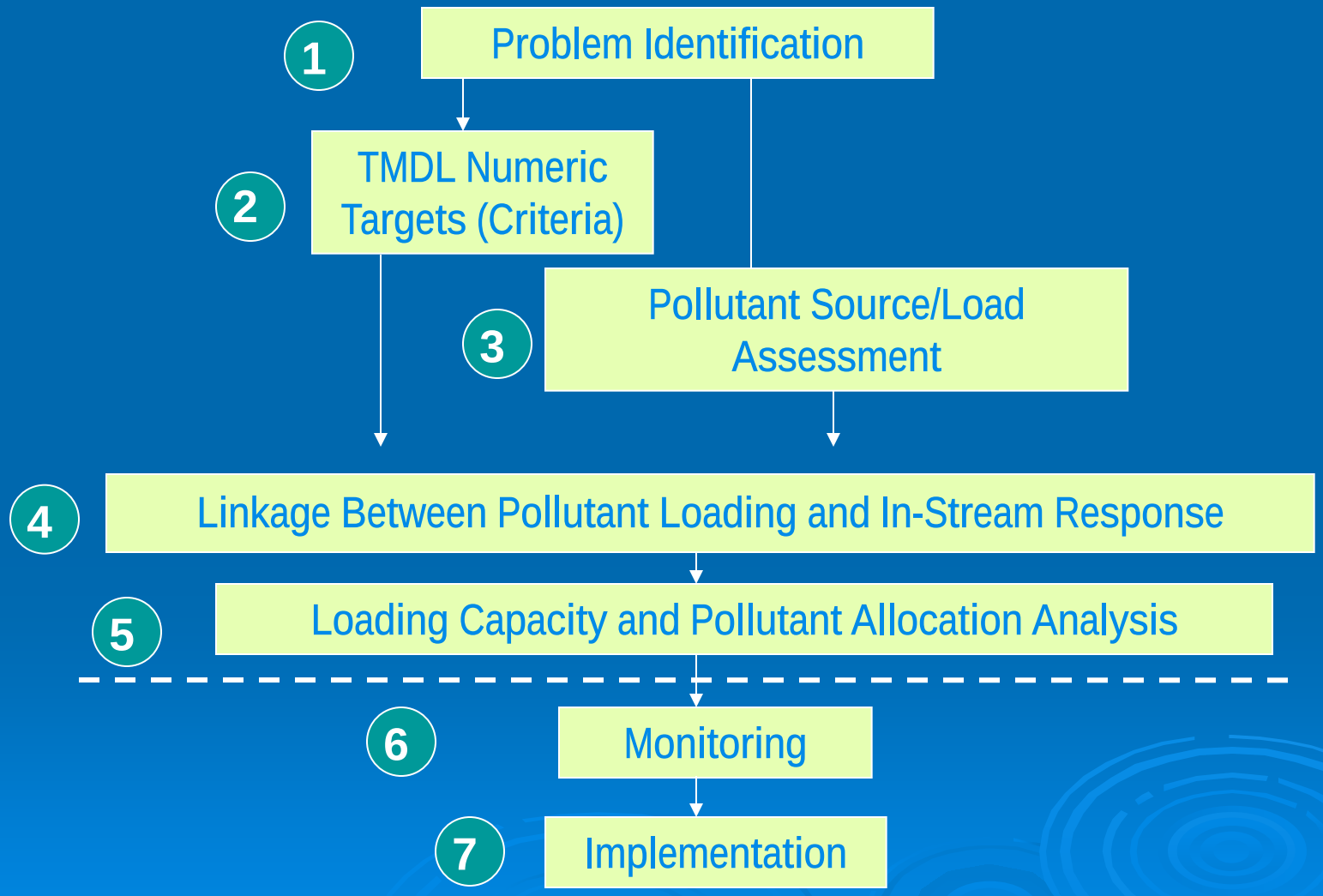
Total Maximum Daily Loads (TMDLs)

What is a TMDL?

- A *Calculation* of a *Pollutant Load* that assures that when *Implemented*, an *Impaired Segment* will *Attain and Maintain* all *Applicable Water Quality Standards*

TMDL Development Process



TMDL Calculation

$$TMDL = \Sigma WLA_i + \Sigma LA_i + MOS$$

ΣWLA_i: Sum of waste load allocations (point sources)
ΣLA_i: Sum of load allocations (nonpoint sources)
MOS: Margin of Safety

Evaluate pollutant reduction scenarios

- Start with point source reductions (regulated)
- Assess potential nonpoint source reductions

Implementation Plan

- **Includes:**
- • Description of actions
- • Responsible parties
- • Regulatory mechanisms
- • Schedule and milestones
- • Monitoring and studies
- • Tracking and adaptation

Notable Pesticide TMDLs

- **SF Bay Area Urban Creeks - Pesticide Toxicity TMDL**
- **Santa Maria River Watershed Toxicity and Pesticides TMDL (Central Coast Region)**
- **Sacramento and Feather Rivers, Lower San Joaquin River & Sacramento-San Joaquin Delta Diazinon & Chlorpyrifos Runoff TMDLs (Central Valley Region)**

Questions?

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