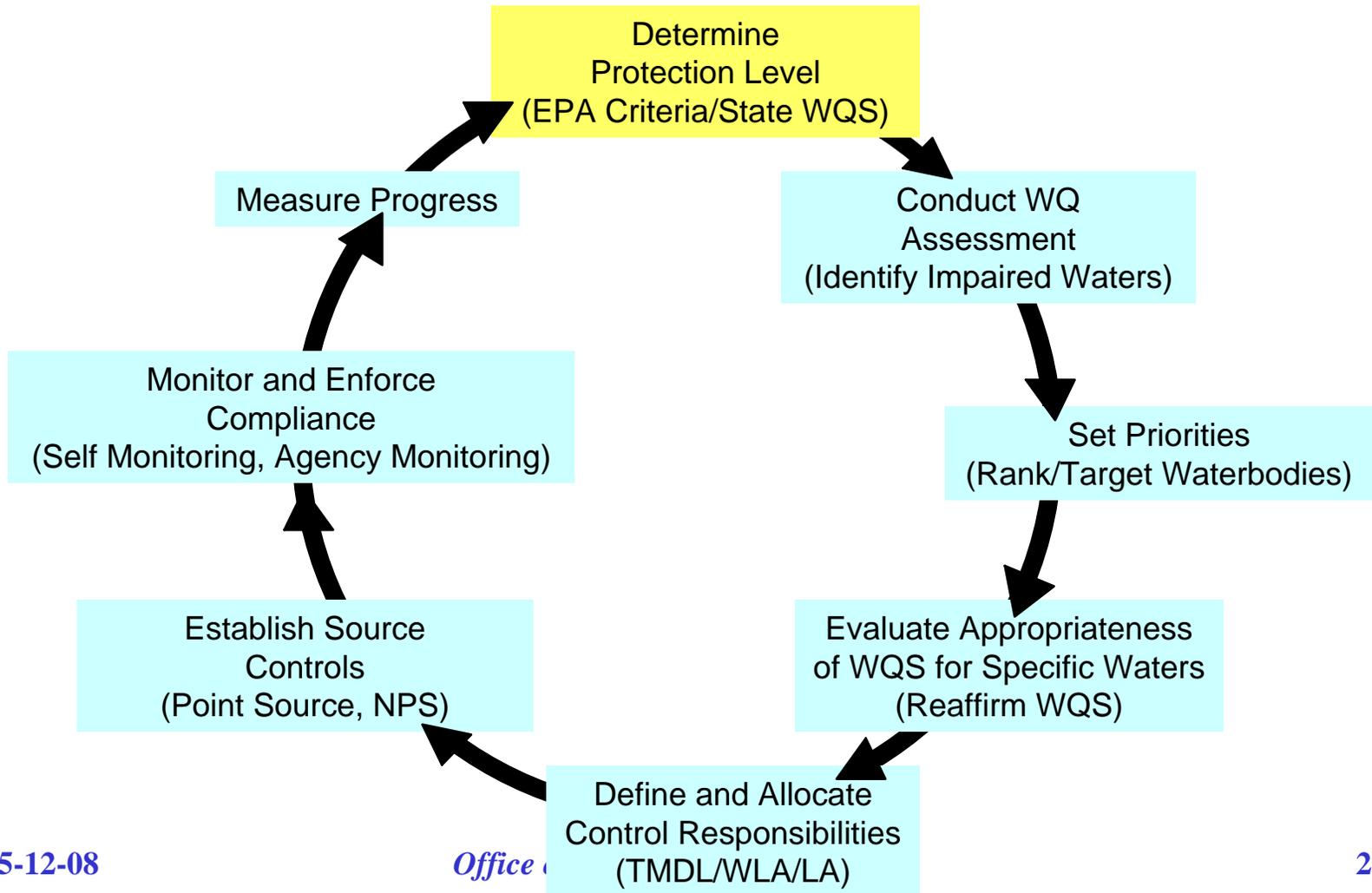


# Implementation of Water Quality Standards and the WQ Based Approach

- 
- How are WQS used in determining if uses are attained ?
  - Under what circumstances must a water be placed on the "Impaired Waters" list?
  - What is a Total Maximum Daily Load (TMDL)? When must one be developed?
  - How are permit limits for point sources developed ?

# Water Quality Based Approach



# Monitoring and Reporting: CWA Sections 305 (b) and 303 (d)

- 
- Document assessment methodology for WQS attainment decisions
  - Categorize all state waters based on WQS attainment status
  - Present results of probability-based design at state or watershed scale
  - Establish monitoring priorities for next 2 years
  - Establish TMDL development priorities for all Category 5 waters

# California Listing Policy

- 
- Data Quality
  - Number of exceedances of Magnitude, Duration, Frequency
  - Age of data
  - Temporal and Spatial representativeness
  - Aggregation of data by reach/area
  - How to interpret numeric objective
  - How to interpret narrative objectives

# Monitoring and Reporting: Integrated Reporting Categories

305 (b)  
Report

- 
1. Attaining all designated uses
  2. Attaining some designated uses, and insufficient or no data and information to determine if remaining uses are attained
  3. Insufficient or no data and information to determine if the standard is attained
  4. Impaired or threatened for one or more designated uses but not needing a TMDL because --
    - a. TMDL has been completed
    - b. Expected to meet standards
    - c. Not impaired by a pollutant
  5. Impaired or threatened by pollutant(s) for one or more designated uses and requiring a TMDL

303(d)  
List  
5

# California and the Integrated Reporting Categories

- 
1. Evidence all uses supporting
  2. Evidence some uses supporting (and no evidence other uses not supporting)
  3. Evidence insufficient to make use support determinations
  4. Evidence at least one use not supported (but TMDL not needed)
  5. Evidence at least one use not supported (and TMDL needed)

# TMDL Definition


$$\text{TMDL} = \sum \text{WLA}_i + \sum \text{LA}_i + \text{MOS}$$

$\sum \text{WLA}_i$ : Sum of waste load allocations (point sources)

$\sum \text{LA}_i$ : Sum of load allocations (nonpoint sources)

MOS: Margin of Safety

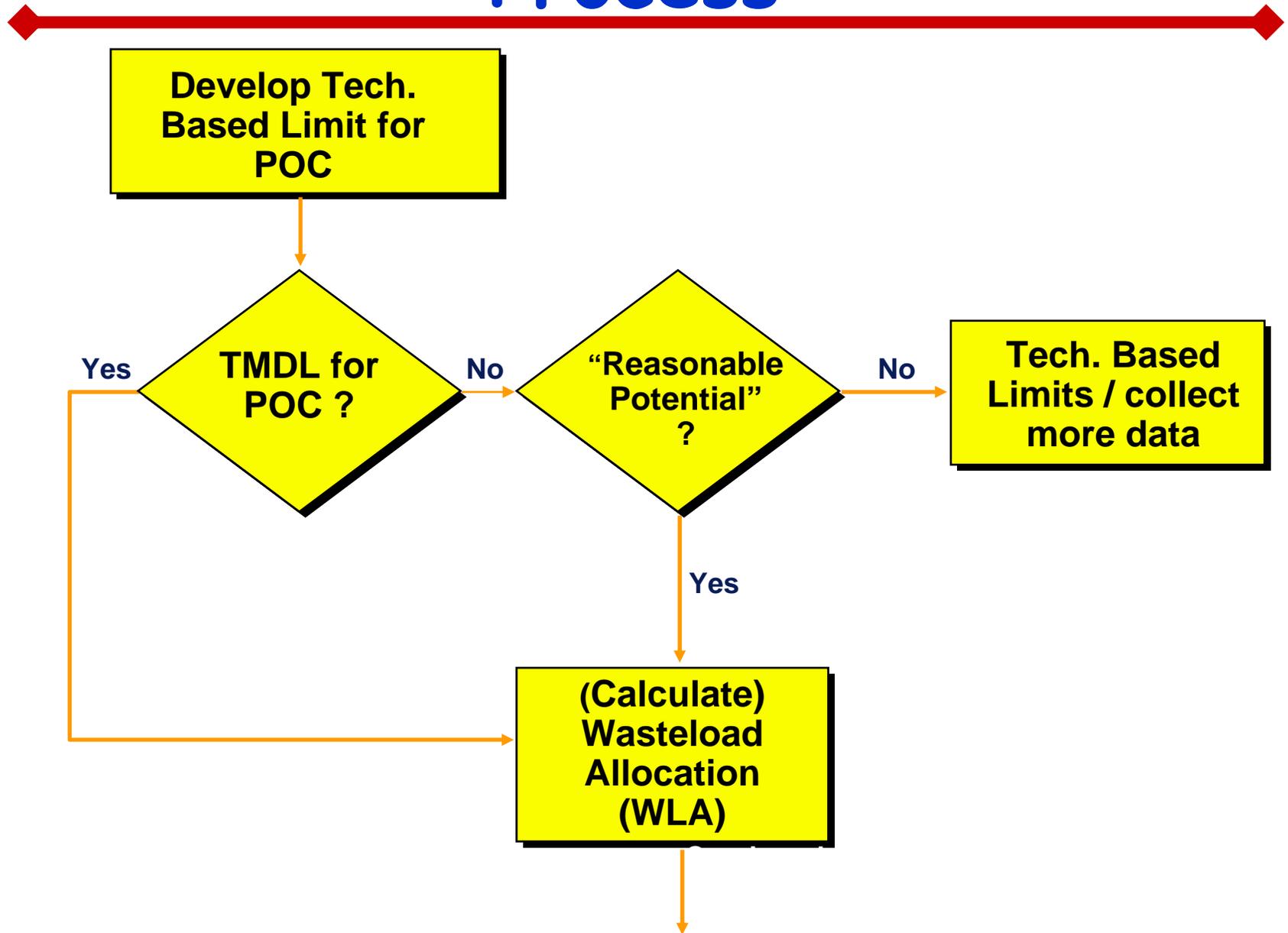
- Extra measure of protection due to uncertainty
- Can be explicit (e.g., 10%) or implicit (safety factors and assumptions in modeling, etc.)

# Standards-to-Permits Process



- 40 CFR §122.44(d)
- *Technical Support Document for Water Quality-based Toxics Control*  
(EPA/505/2-90-001), March 1991

# Standards-to-Permits Process



# Standards-to-Permits Process (Continued)

