

ACWA Nutrients Permitting Workshop

**NPDES: National Pollutant Discharge
Elimination System Program**

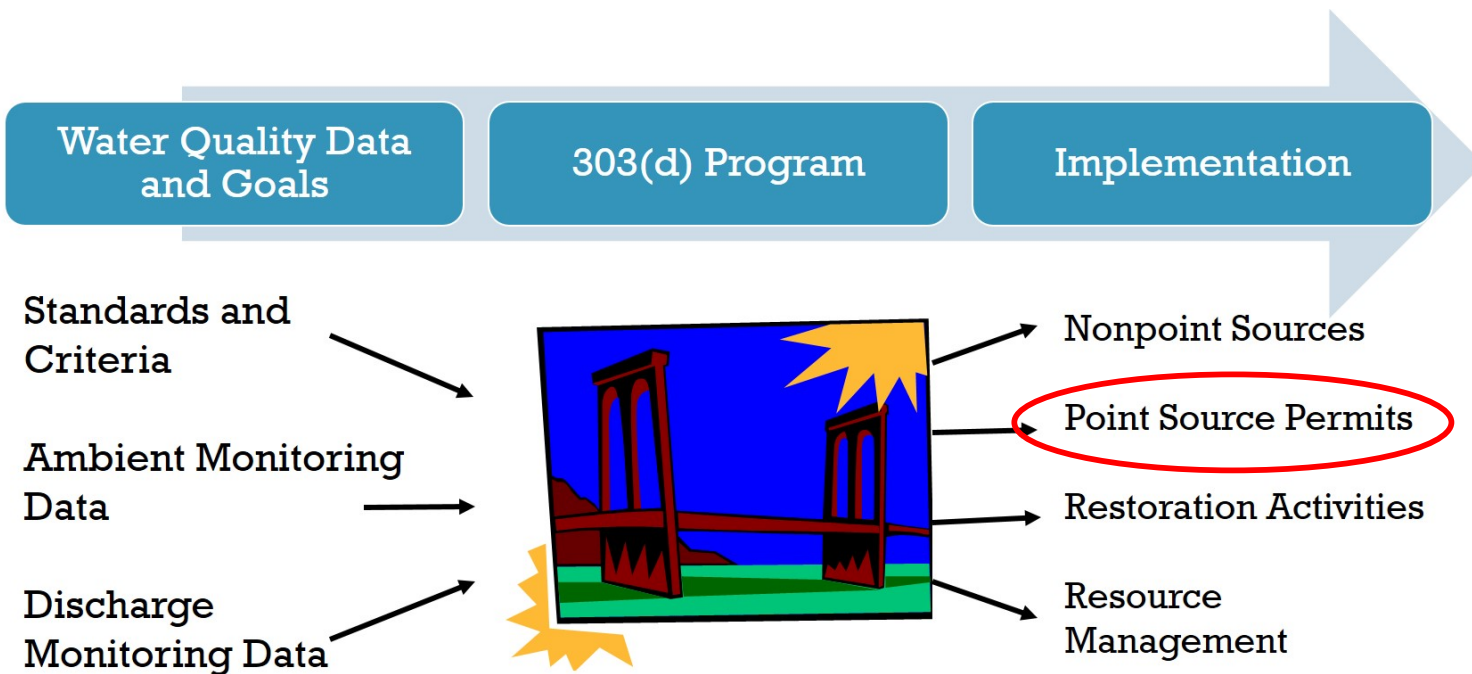
**Frank Sylvester
EPA's Office of Wastewater Management**



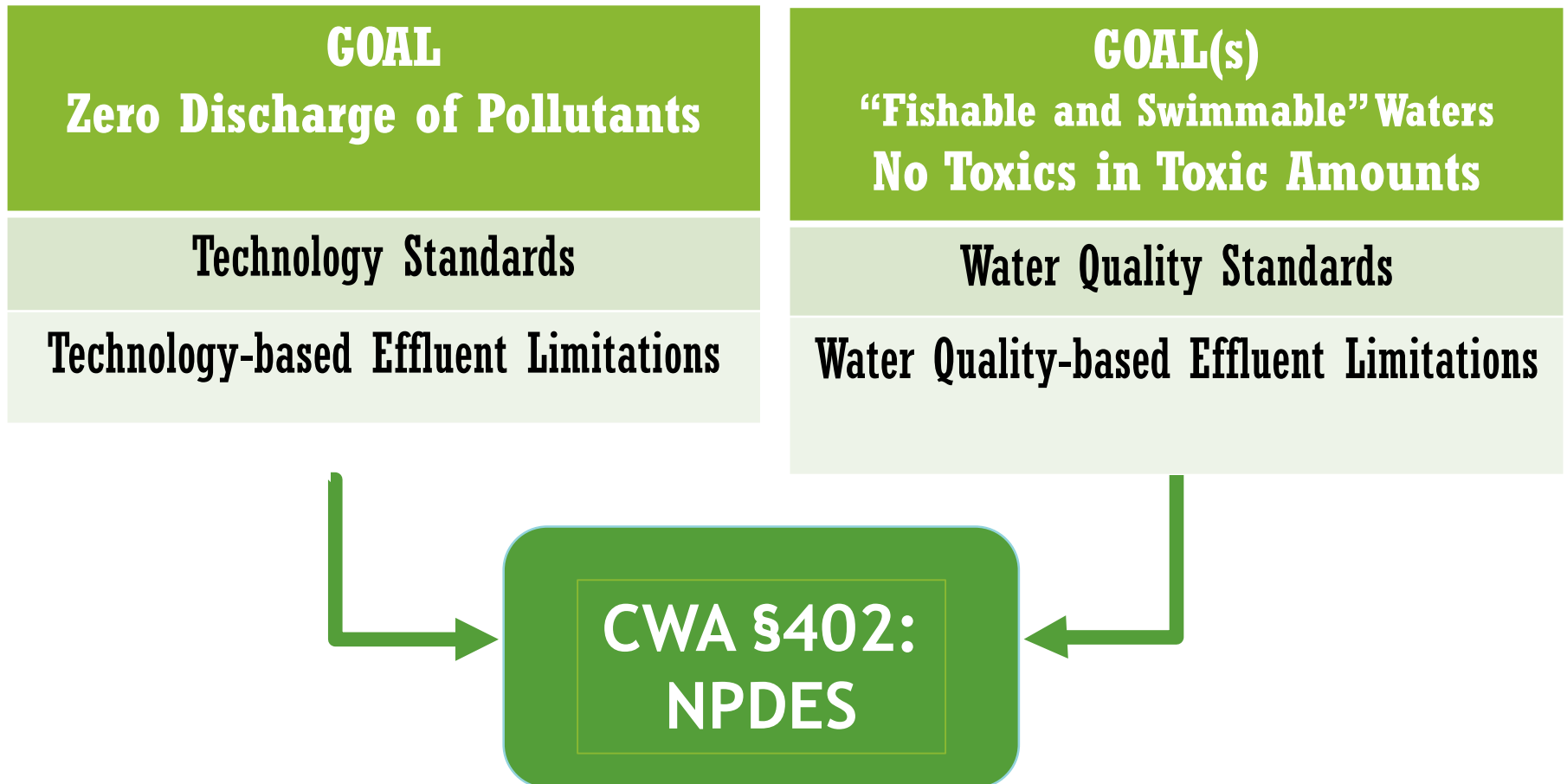
Outline

- **Basics:**
 - Framework
 - Administration
 - Types of Permits
- **Technology-based Effluent Limitations**
- **[TMDLs and] Water Quality-based Effluent Limitations**
 - Relationship between WQS and WQBELS
 - Four Basic Steps to Developing WQBELs
 - Considerations and Finalizing the Permit
- **Other Permit Components**

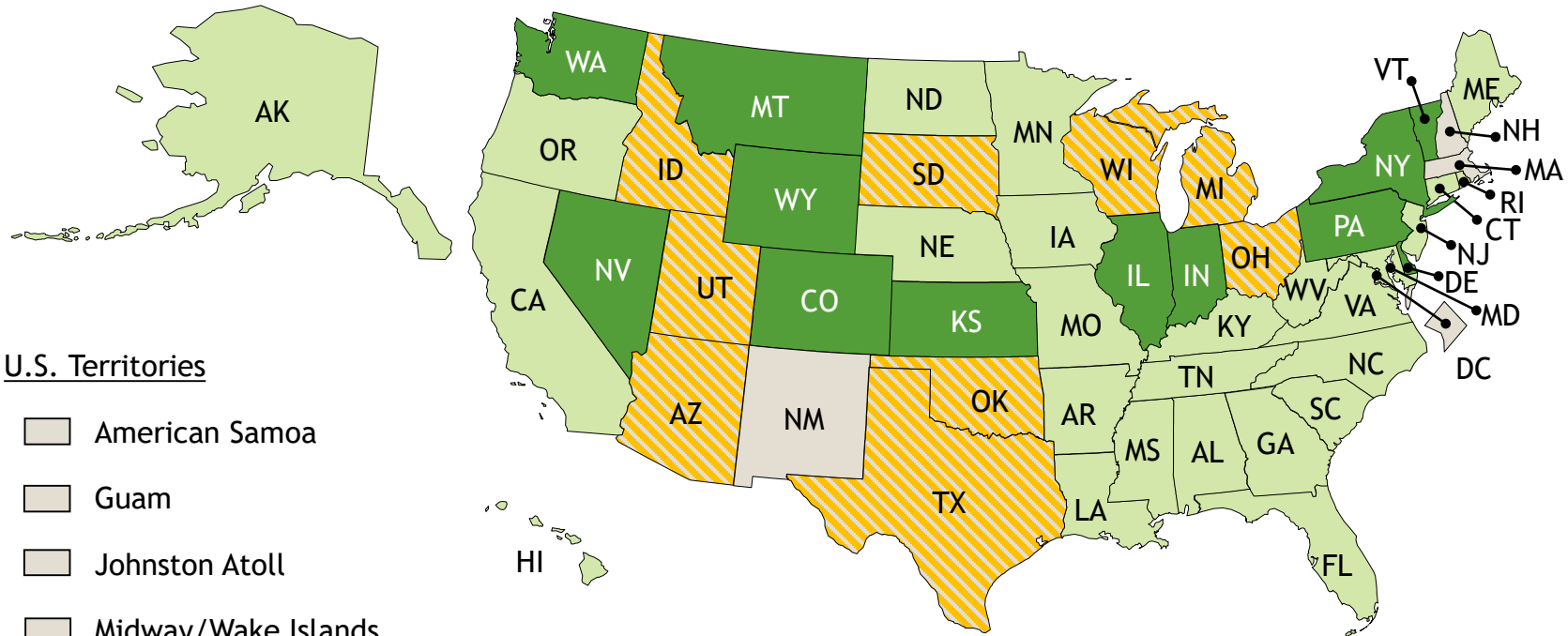
Bridging Water Quality Goals and Actions needed for Restoration



NPDES Framework within CWA







NPDES Program Authorizations



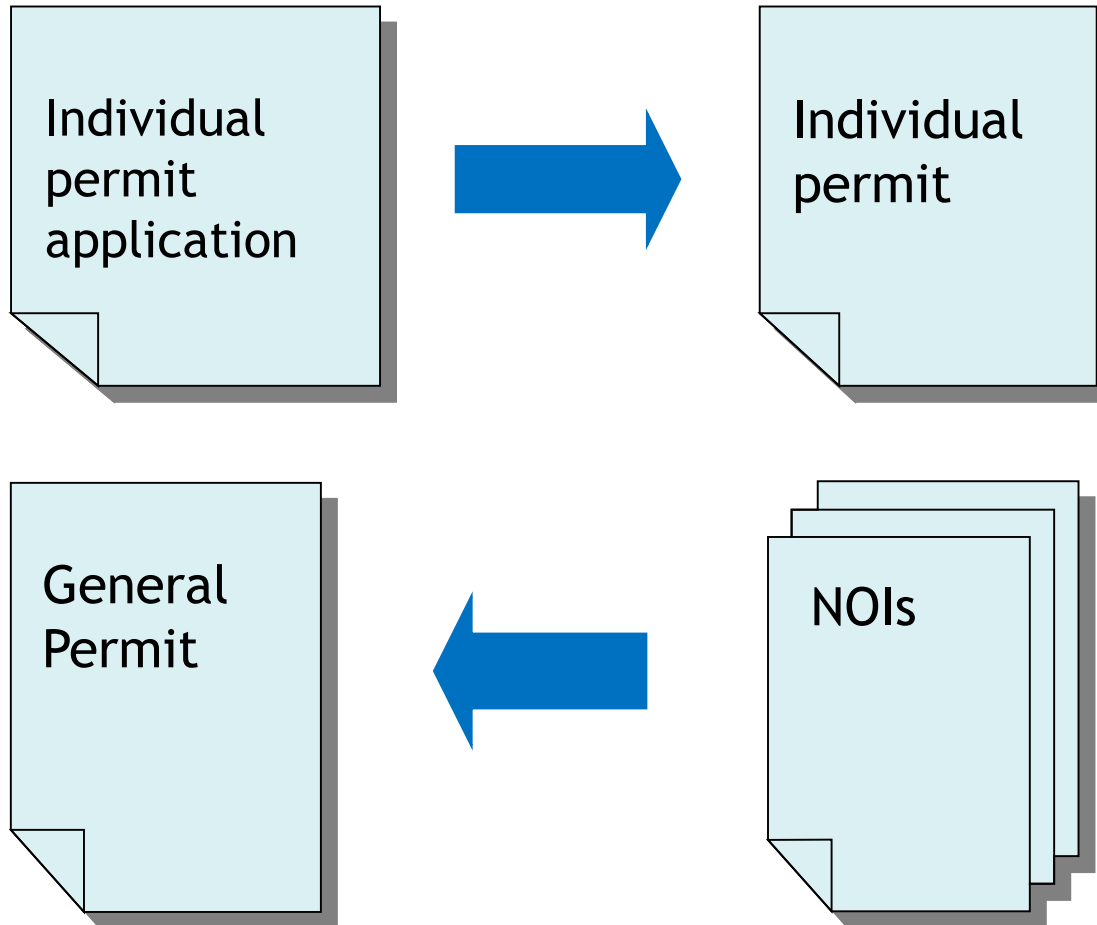
U.S. Territories

-  American Samoa
-  Guam
-  Johnston Atoll
-  Midway/Wake Islands
-  Northern Mariana Islands
-  Puerto Rico
-  Virgin Islands

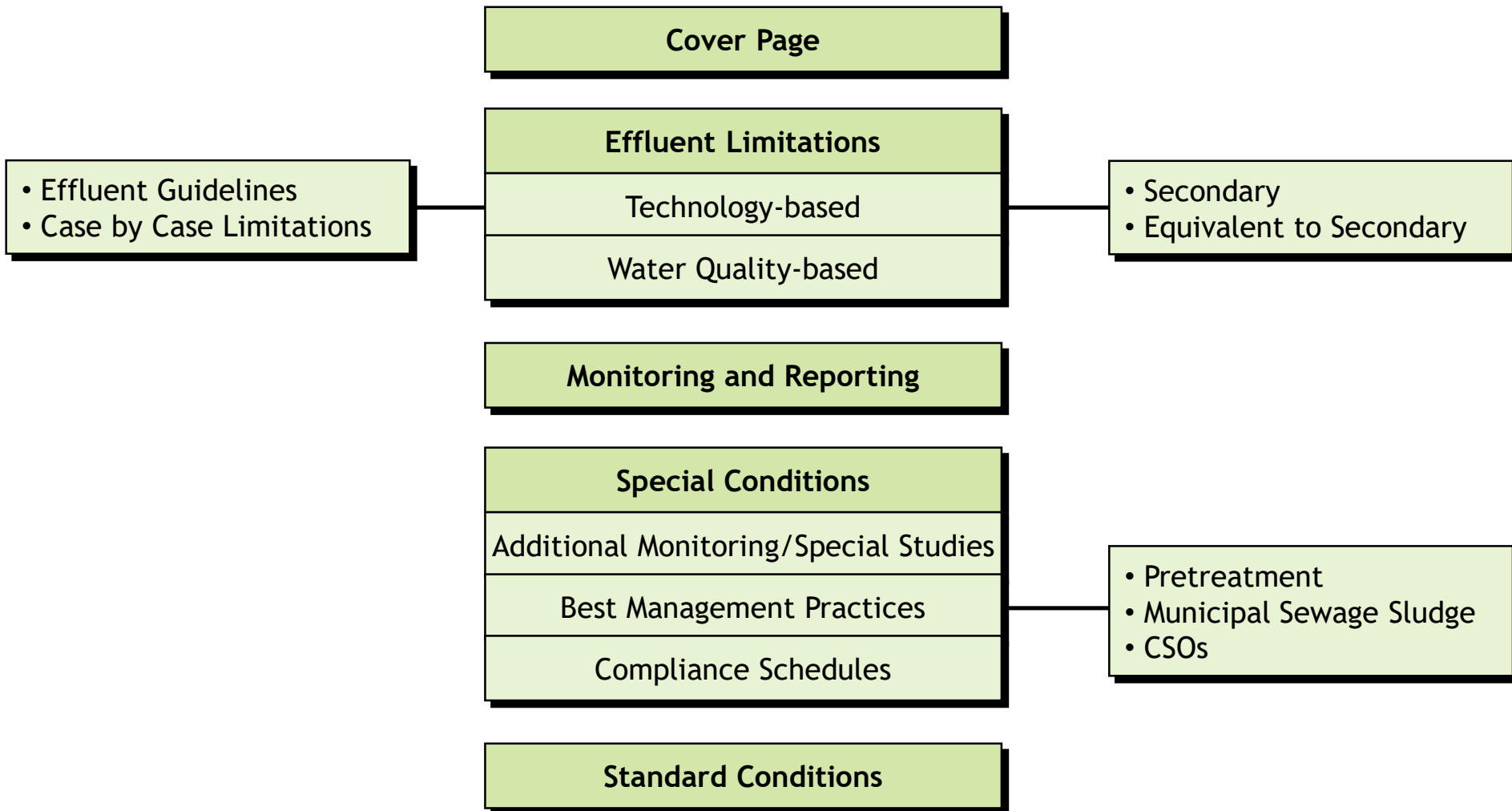
State NPDES Program Status

-  Fully authorized
-  Fully authorized, including an approved biosolids program
-  Partially authorized
-  Unauthorized

NPDES Permit Types: Individual and General

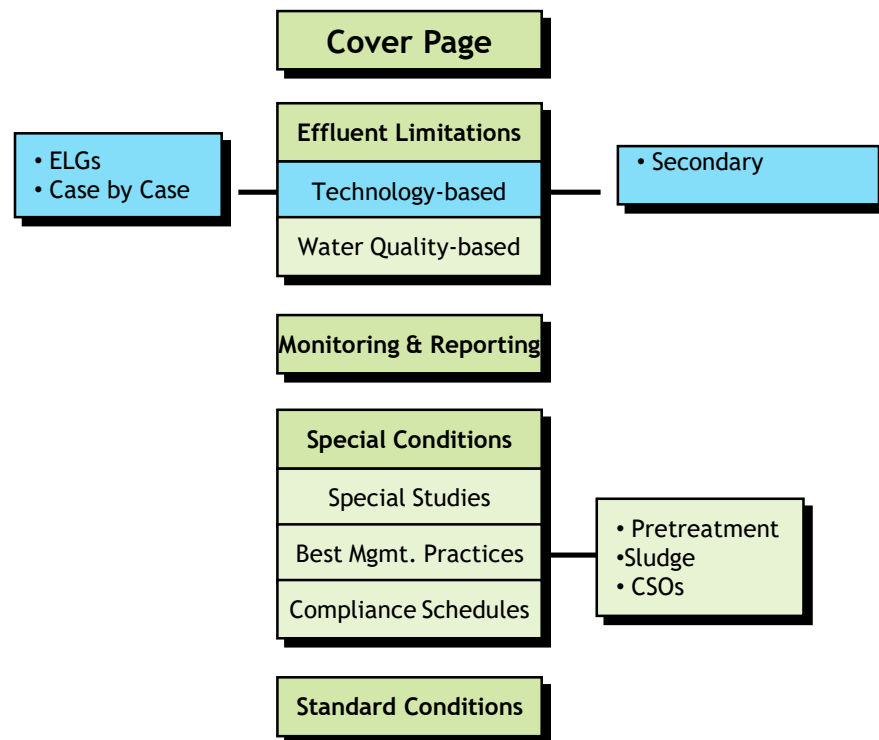


Typical NPDES Permit Components

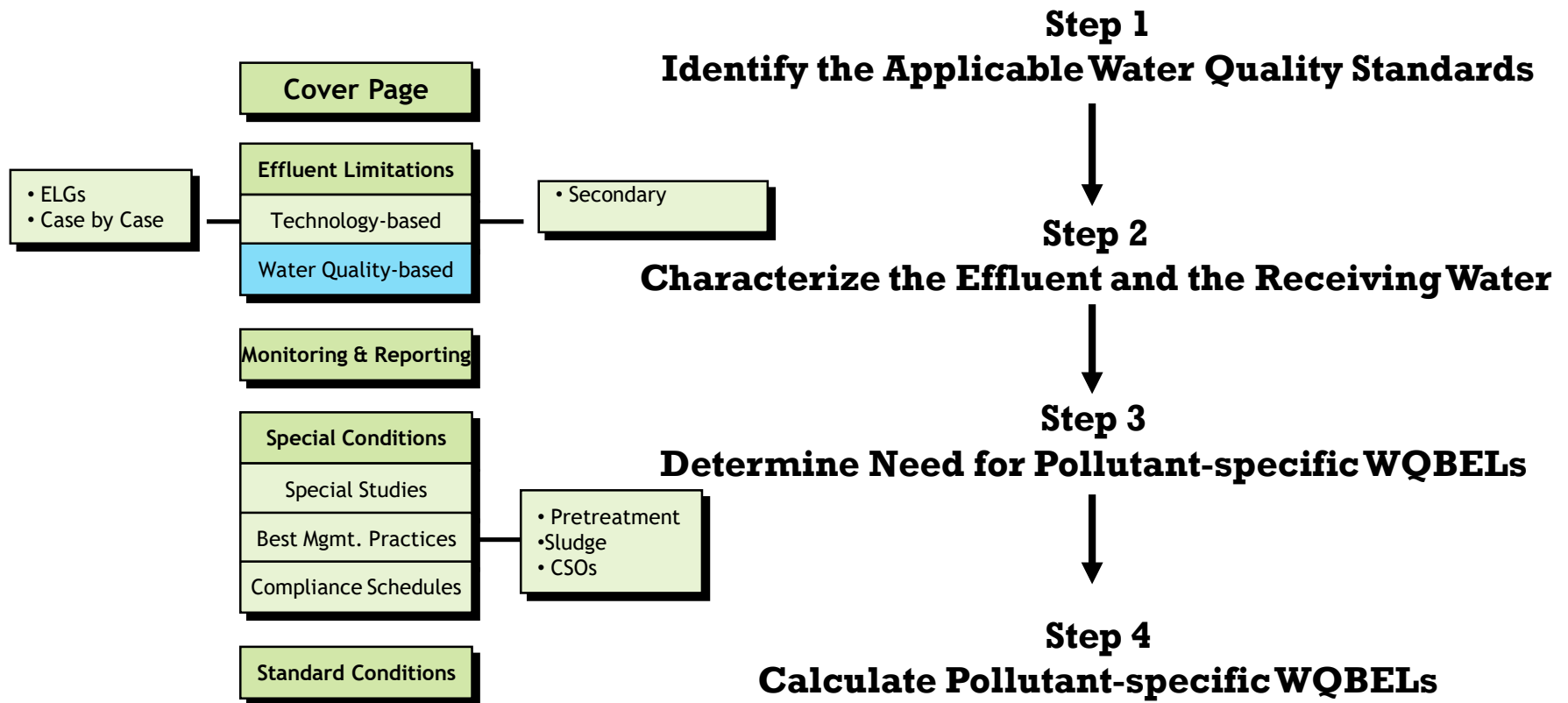


Tech-based Standards to Tech-based Effluent Limitations

- Purpose: to set a national floor
 - Done by industrial sector and subsector
 - Based on off-the-shelf technology
 - Account for economic achievability
 - Do not designate or require specific technology
- Like TMDL WLAs, tech. standards are not self-implementing
 - E.g., X lbs of pollutant per Y amount of production



[TMDLs and] Water Quality-based Effluent Limitations



Step 2 – Characterize the Effluent and the Receiving Water

TMDLs!

Identify Pollutants of Concern

303(d) List!



Select an Approach to Model Effluent and Receiving Water Interaction

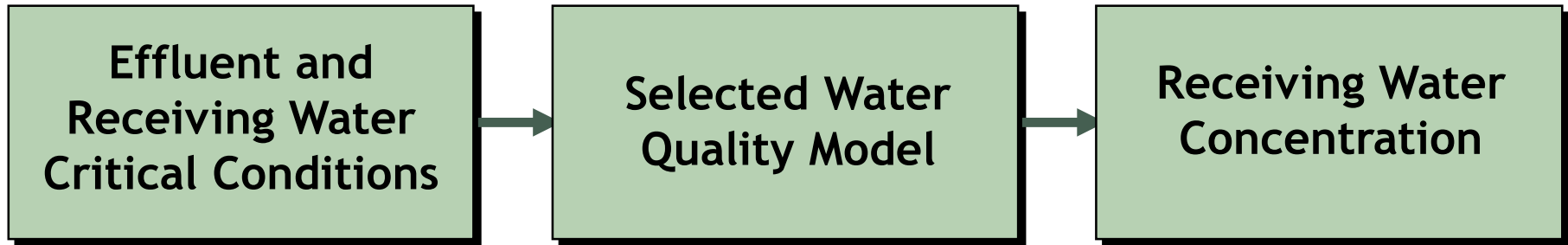


Identify Critical Conditions for Effluent and Receiving Water Modeling



Establish Appropriate Dilution Allowance or Mixing Zone for Each Pollutant of Concern

Step 3 – Determining the Need for WQBELs



- For modeling under **critical conditions**, the permit writer projects:
 - a single expected **receiving water concentration**
 - to compare to each applicable **water quality criterion**
- If expected concentration > criterion then we have **“reasonable potential” and need a WQBEL**

Step 4 - Develop Pollutant-Specific WQBELs

Determine Wasteload Allocations (WLAs)
from applicable WQ criteria



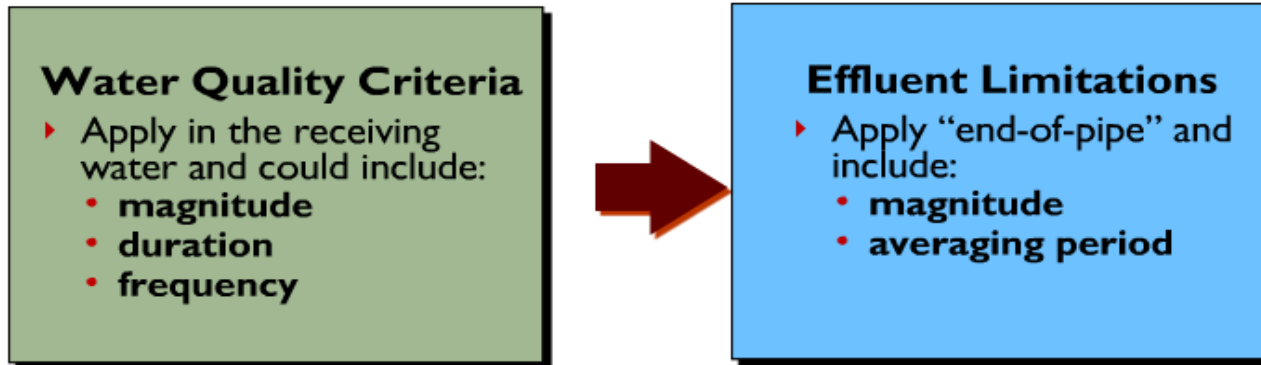
Account for WLA duration and frequency



Calculate WQBELs

Translation

WQBEL Derivation



- 122.44(d)(1)(vii): WQBELS to ensure that:
 - (A) the level of water quality achieved by limits is derived from and complies with all applicable WQS
 - (B) effluent limits developed to protect a narrative WQC, numeric WQC, or both, are **consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the state and approved by EPA pursuant to 40 CFR 130.7 [TMDLs]**
- 122.45(d)(1): **max daily and avg. monthly**
- 122.45(d)(2): **avg. weekly and avg. monthly**
- 122.45(e): **non-continuous dischargers – max rate, freq., total mass**

Final Effluent Limits and Other Considerations

- Compare:
 - 1) TBELs or other existing limitations *with*
 - 2) WQBELs based on individual facility WLAs and/or TMDL WLAs
- The most stringent limitations for each parameter are the new, calculated final effluent limitations
- Final effluent limitations in the permit must meet WQS ***anti-degradation*** policies and ***anti-backsliding*** requirements.

Environmental Concerns and Permitting Considerations

CAFOs

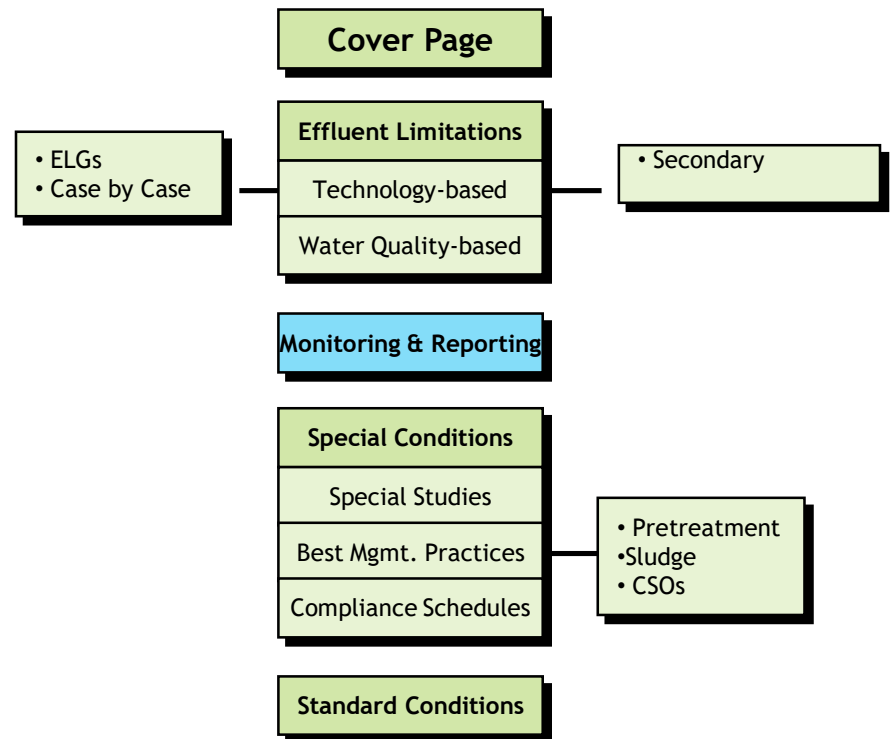
- manure storage and transportation
- **land application of manure – nutrient loading**
- Not always assigned a WLA in TMDLs

Stormwater

- Developing stormwater permit provisions is seldom straightforward
- BMP-based approaches need to be supported by robust analysis demonstrating how WLAs will be attained
- How a TMDL categorizes different stormwater sources will influence difficulty of WQBEL development

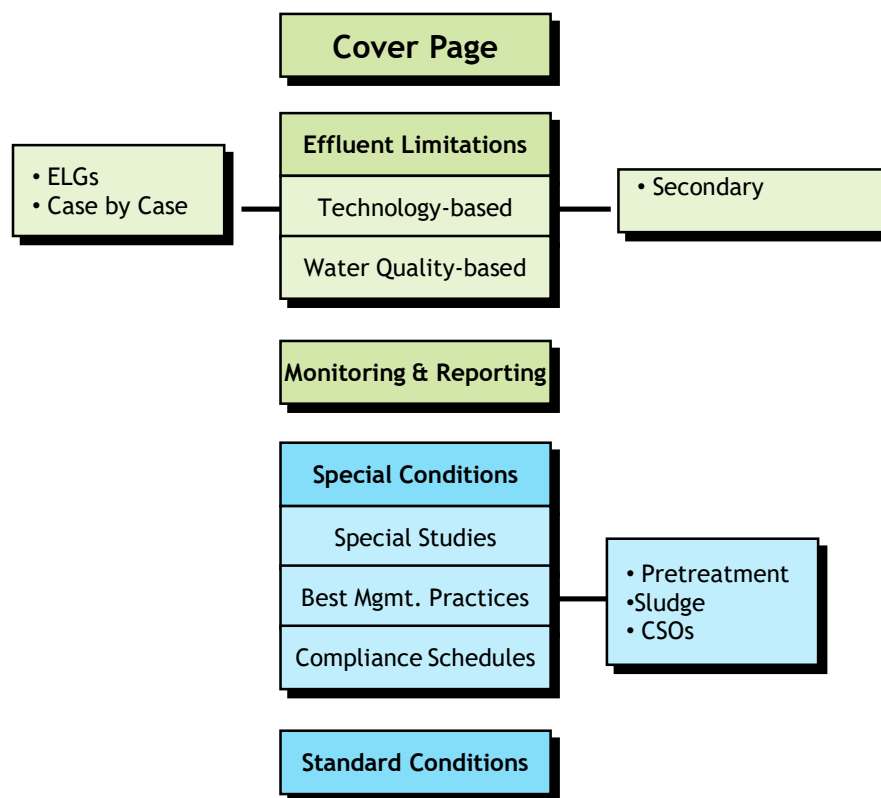
Monitoring Requirements

- Frequency based on type of the discharge and duration of limits (no < than 1/yr)
- Monitoring requirements provide information on the facility's performance, efficiency
- Create compliance records
 - Longer averaging period?
 - Consider interim monitoring such as monthly where the limit is seasonal or annual



Special Conditions and Standard Conditions

- Special Conditions
 - Additional monitoring (e.g., ambient)
 - BMPs used to implement WLAs
 - Compliance schedules
- Standard Conditions
 - Applicable to all permits (122.41)
 - Applicable to specific categories of dischargers (122.42)



NPDES Administrative Process

The administrative process of developing and issuing a permit involves:

- documenting all permit decisions
- coordinating EPA and state, territorial, or tribal review of the draft permit
- providing public notice, conducting hearings (if appropriate), and responding to comments
- defending the permit and modifying after issuance (if required)



For Additional Information:

- National Pollutant Discharge Elimination Program (NPDES):
 - <https://www.epa.gov/npdes>
- NPDES Permit Writers' Course:
 - <https://www.epa.gov/npdes/npdes-training>
 - Week-long courses held 4-5 times a year
 - Check website for scheduled courses
- Web training: “Recorded Webinars and Training” tab
 - TMDLS and NPDES: <https://www.epa.gov/npdes/npdes-training#tmdl>
- Compendium of MS4 WQBEL permitting examples
 - https://www.epa.gov/sites/production/files/2017-06/documents/part3-sw_compendium_wqbels_508.pdf