Restoring Water Quality in Texas Surface Waters

Total Maximum Daily Load Program

Texas Commission on Environmental Quality

Texas TMDL Program

- Texas is required under the federal Clean Water Act to list impaired waters and to take action to restore them.
- A surface water body is considered impaired if it does not meet the criteria for support of one or more of its beneficial uses, as defined in the *Texas Surface Water Quality Standards*.
- Impaired waters are identified every two years on the *Texas Water Quality Inventory and 303(d) List*.
- Two part process is used for restoration:
  1) establish a total maximum daily load, and
  2) develop an implementation plan.

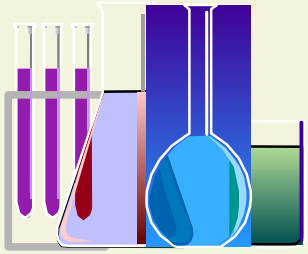
How Are Waters Assessed?

- Waters are assessed against uses defined in the *Texas Surface Water Quality Standards,* 30 TAC 307

- Numeric and narrative criteria are evaluated
- Four general categories of use are defined:
  - Aquatic life use
  - Contact recreation
  - Public Water Supply
  - Fish Consumption/Oyster Waters

How Are the Results Reported?

- The results of the assessment are reported in the *Water Quality Inventory and 303(d) List*
- Report includes:
  - Assessment of surface waters to determine if they meet standards [CWA §305(b) report]
  - Identification of those waters that do not meet standards [CWA §303(d) List]
  - Schedule for implementing TMDLs and other management measures



The Inventory and List

- The Water Quality Inventory and List assigns water bodies to one of five categories:
  - 1. Attaining all uses and no use is threatened
  - 2. Attaining some uses; no use is threatened; and some uses are not assessed
  - 3. Uses are not assessed due to insufficient or no data
  - 4. Uses are not met, but a TMDL is not required
  - 5. Uses are not met or are threatened [303(d) List]; TCEQ will take appropriate action

Category 5: The 303(d) List

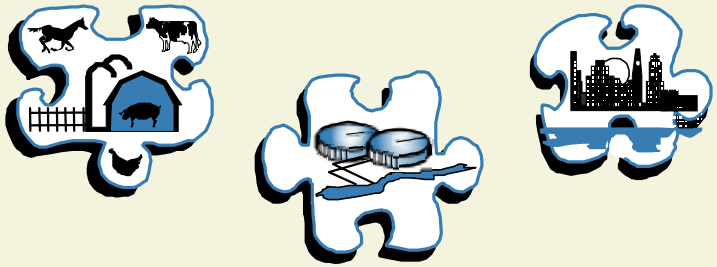
- Category 5 Waters
  - *Category 5a*: A TMDL is underway, is scheduled, or will be scheduled
  - *Category 5b*: A review of the water quality standards will be conducted before a TMDL is scheduled
  - *Category 5c*: Additional data and information will be collected before a TMDL is scheduled

Restoring Impaired Waters

- The best and most appropriate scientific methods are used to evaluate the water body.
- A separate load allocation must be prepared for each pollutant affecting each water body.
- One project may develop many TMDLs for a single water body. Projects may also address similar impairments in multiple water bodies.
- Not all projects result in TMDLs; some analyze use attainability, some determine extent of impairment to determine if a TMDL is needed.

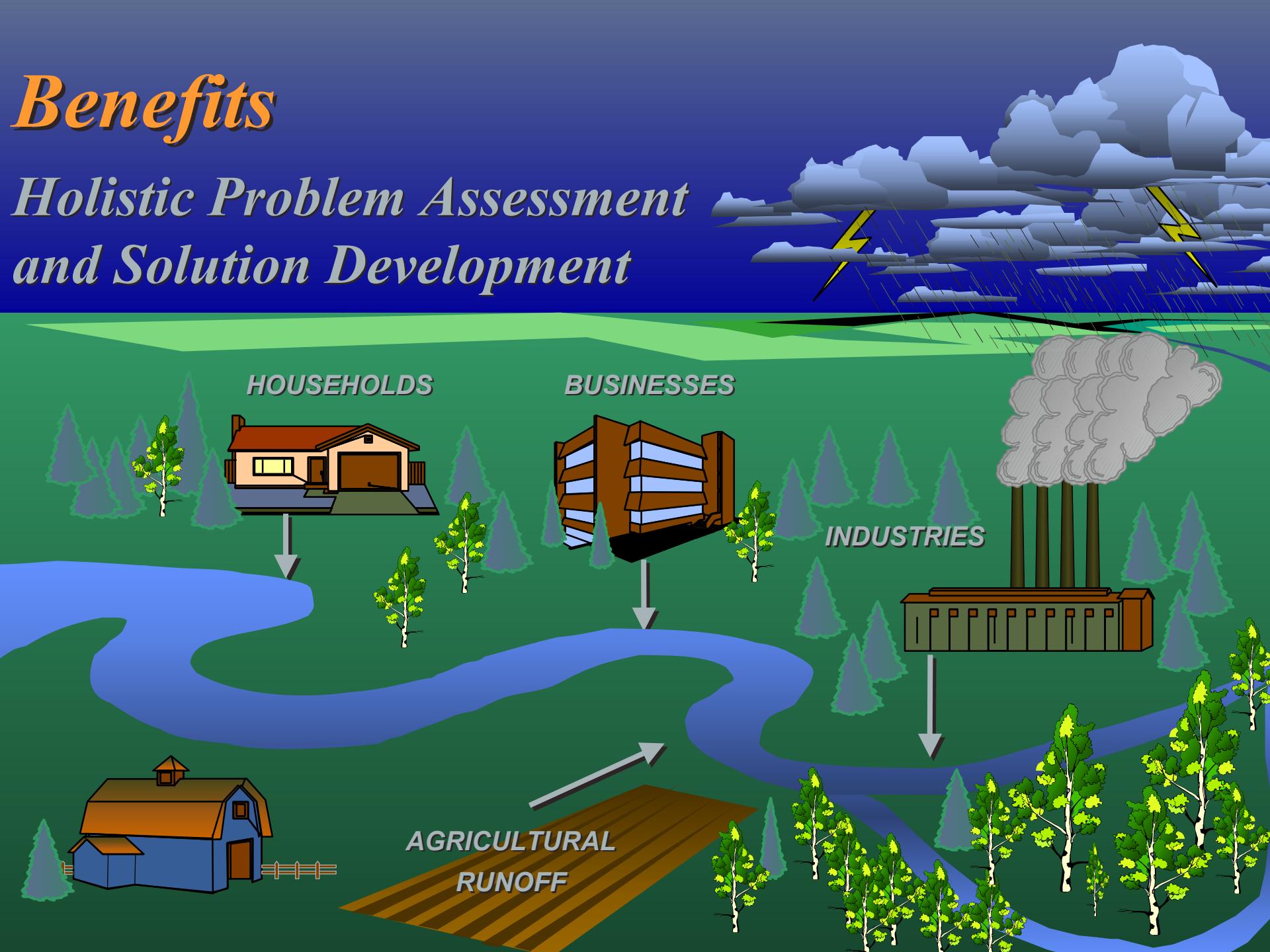
Key Elements of the Program

- **TMDL – Total Maximum Daily Load**
  Determines the maximum amount (load) of a pollutant that a water body can receive and still maintain uses, and allocates this load to sources in the watershed.
- **Implementation Plan**
  A detailed description of the regulatory and voluntary management measures necessary to achieve the pollutant reductions identified in a TMDL.



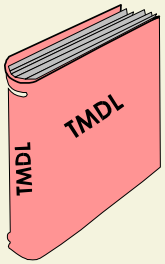
Benefits

Holistic Problem Assessment and Solution Development



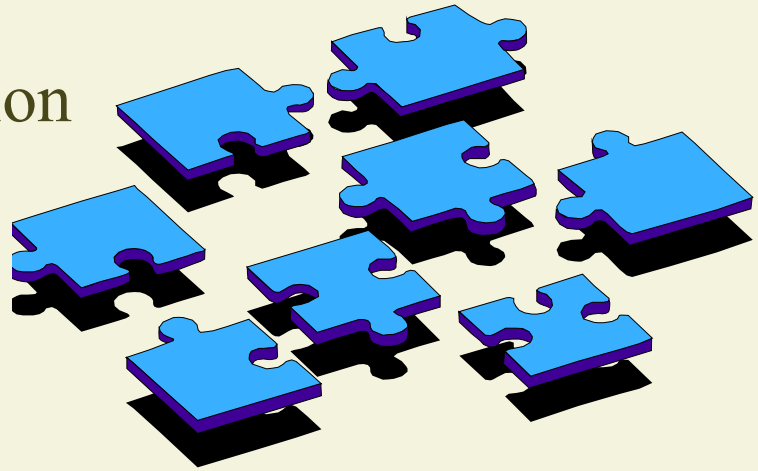
What Is a TMDL?

- A TMDL is a scientific model that:
  - determines the maximum amount (or load) of a particular pollutant that a water body can receive and attain and maintain its standards
  - allocates this allowable load to point and nonpoint sources of pollution in the watershed
- A TMDL is also a document submitted to the EPA. It identifies the pollutant of concern and its sources, and allocates the allowable load.

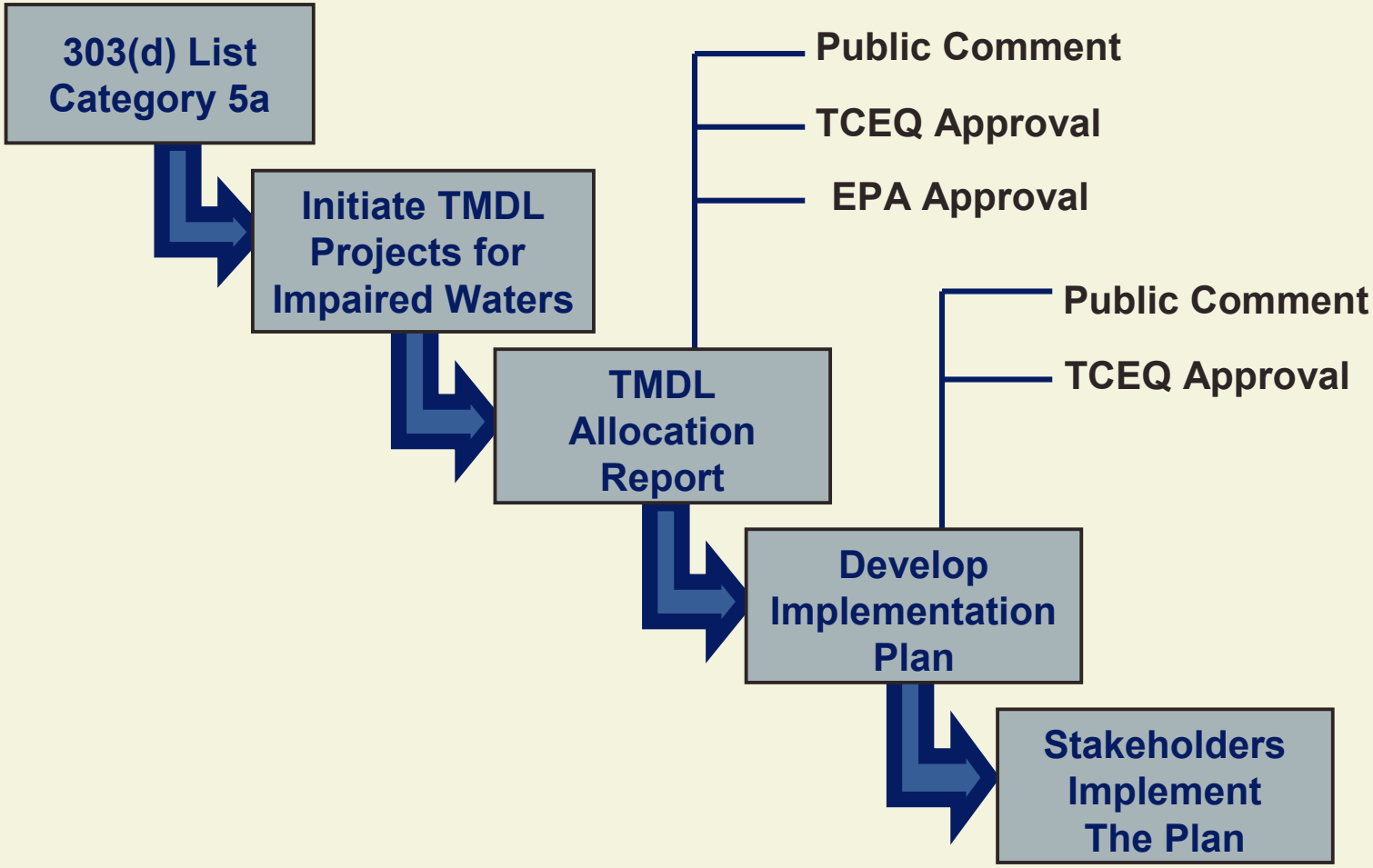


Main Elements of a TMDL

- Problem Definition
- Endpoint Identification
- Source Analysis
- Linkage Between Sources and Receiving Waters
- Margin of Safety
- Pollutant Load Allocation (both point, nonpoint, and natural)



TMDL Development Process



Stakeholder Involvement

- Improve the quality and quantity of contributions to TMDL projects
- Ensure that state government considers the local perspective in its decisions
- Lead to consensus-based solutions
- Encourage open dialogue on water quality issues

Who are Stakeholders?

- Significant contributors of pollutant loadings
- Persons affected by water quality problems
- Persons required to undertake control measures because of statutory of regulatory requirements
- Persons with regulatory responsibilities linked to water quality
- Persons who can help implement actions to fix water quality problems
- Members of the general public who live in the watershed or use the water resource

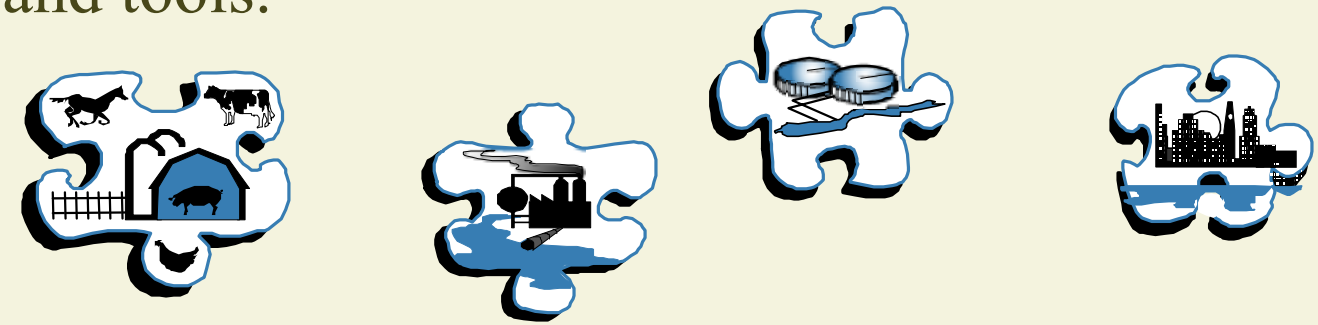
Two Kinds of Restoration Plans

- TMDL Implementation Plans (IPs)
- Watershed Restoration Plans (WRPs)
- Both have the same goal — improving water quality in rivers, lakes, or bays.

- IPs are remedial actions for impaired waters; WRPs may be either remedial or preventive.
- IPs are based on total maximum daily loads; WRPs use other measurable goals for water quality.

What Are WRPs and IPs?

- Watershed restoration plans and TMDL IPs:
  - Define actions needed to reduce pollution and restore water quality
  - Include both regulatory and voluntary actions
  - Are developed in cooperation with regional and local stakeholders
- Are based on the best available scientific methods and tools.



Implementing TMDLs

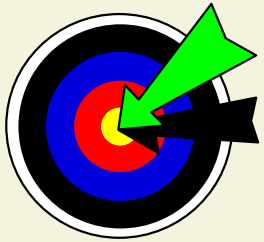
- Implementation plans (IPs) are collaborative and involve a wide variety of stakeholders.
  - Citizens, watershed interest groups
  - State, local, and federal agencies
  - Regulated organizations
- *Control actions* for point source discharges; *management measures* for nonpoint source discharges
- Often, plans are phased in based on progress in achieving water quality improvement.
- Water quality improvement may take years.
- Follow-up monitoring is crucial.

Control Actions

- Point source TMDL allocations affect permits:
  - New, amended, or renewed permitted loads must be consistent with the TMDL allocation.
  - TCEQ may initiate amendments to impose new limits, or may impose them with routine renewals or amendments.
  - Permitted loading from existing facilities may be substantially reduced.
  - New facilities may be required to meet more stringent effluent limits than expected.

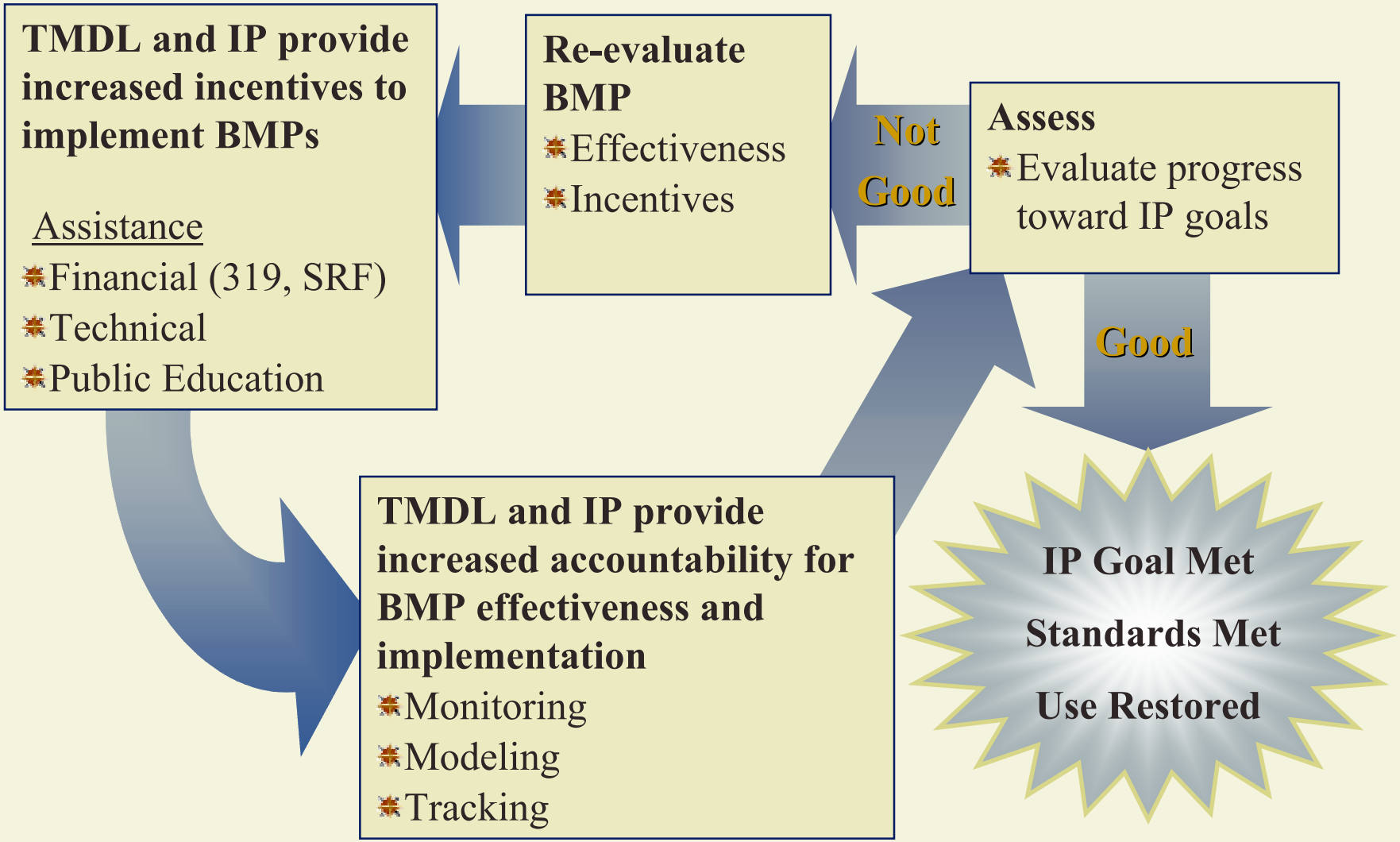
Control Actions, Continued

- Point source TMDL allocations affect permits:
  - In some cases or areas, storm water permits may receive new or more stringent limits consistent with TMDL allocations.
  - Permittees may no longer be eligible for general permits.
  - Additional monitoring and reporting requirements may be needed.
  - Permittees may have the opportunity to negotiate effluent trading agreements in order to meet net load limit for watershed.



Management Measures

- Nonpoint source TMDL allocations may result in implementation of best management practices (BMPs):
  - Management of runoff
    - Detention basins, filter strips, infiltration basins, porous pavement, retention ponds, swales

  - Management of operations to decrease or eliminate pollutants in runoff
    - Spill prevention and control, source controls, education
- Managing nonpoint sources is an iterative process.

Management Measures