



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

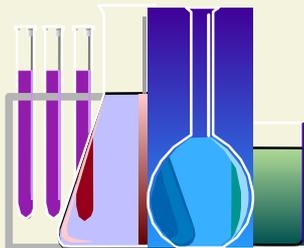


- ▶ Numeric and narrative criteria are evaluated
- ▶ Four general categories of use are defined:
 - ▶ Aquatic life use
 - ▶ Contact recreation
 - ▶ Public Water Supply
 - ▶ Fish Consumption/Oyster Waters



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

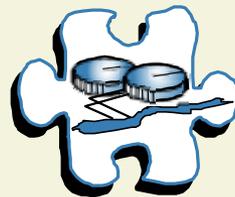
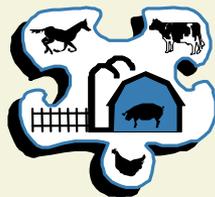


▲ **TMDL – Total Maximum Daily Load**

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.

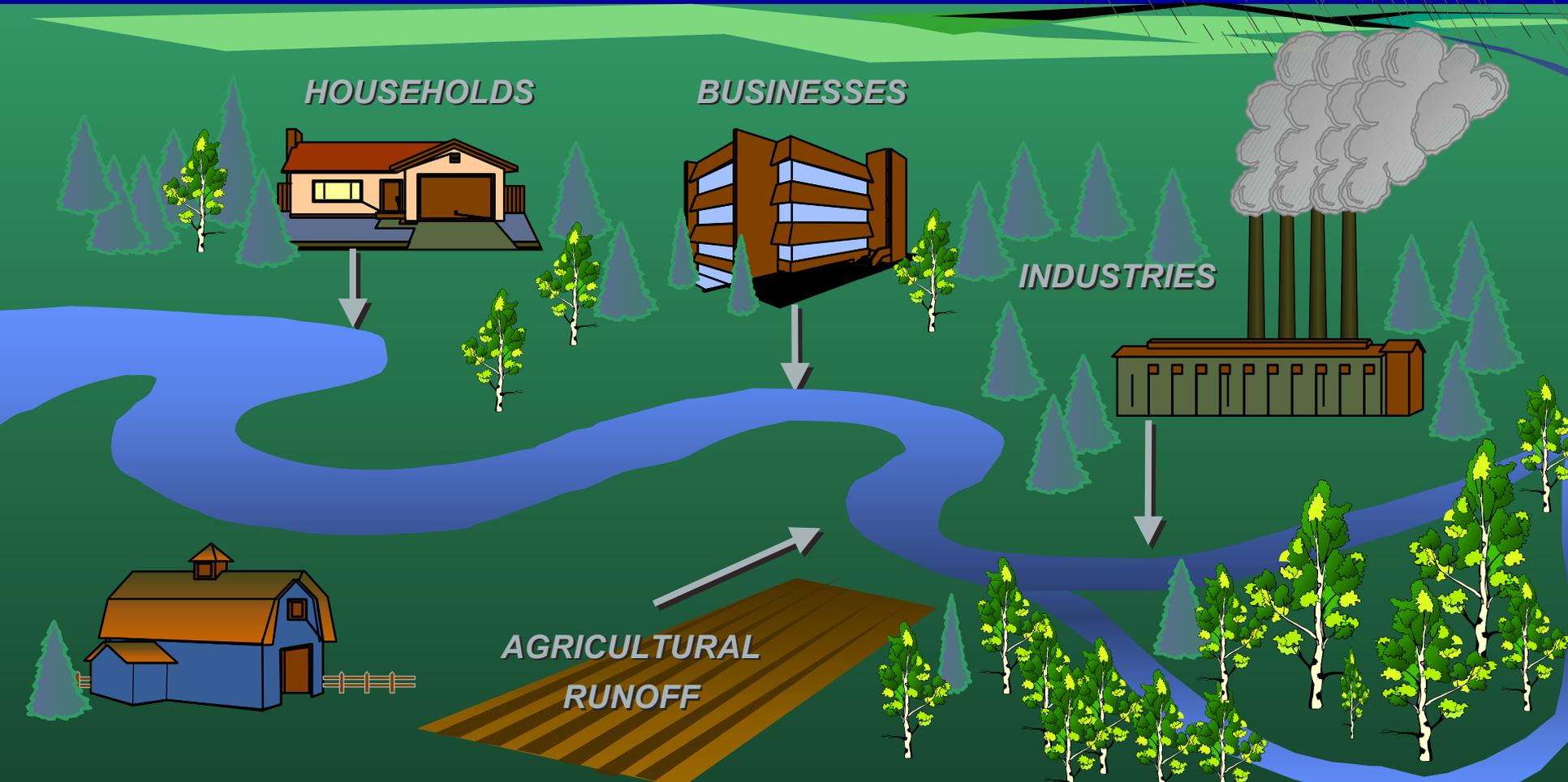
▲ **Implementation Plan**

A detailed description of the regulatory and voluntary management measures necessary to achieve the pollutant reductions identified in a TMDL.



Benefits

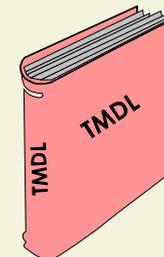
Holistic Problem Assessment and Solution Development



What Is a TMDL?

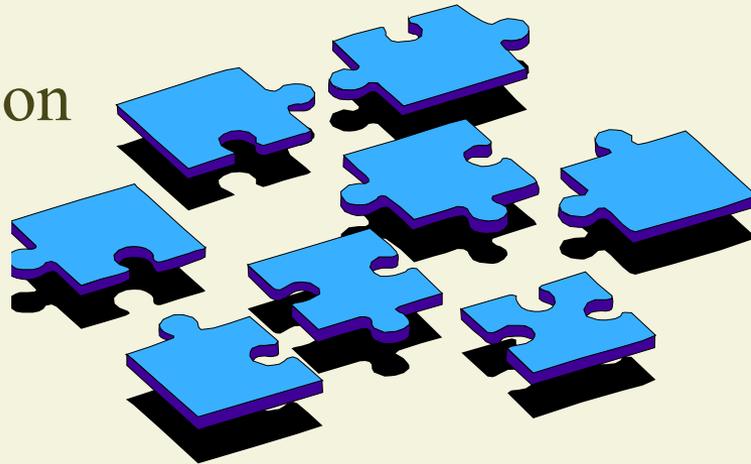


- ▶ A TMDL is a scientific model that:
 - ▶ determines the maximum amount (or load) of a particular pollutant that a water body can receive and attain and maintain its standards
 - ▶ allocates this allowable load to point and nonpoint sources of pollution in the watershed
- ▶ A TMDL is also a document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

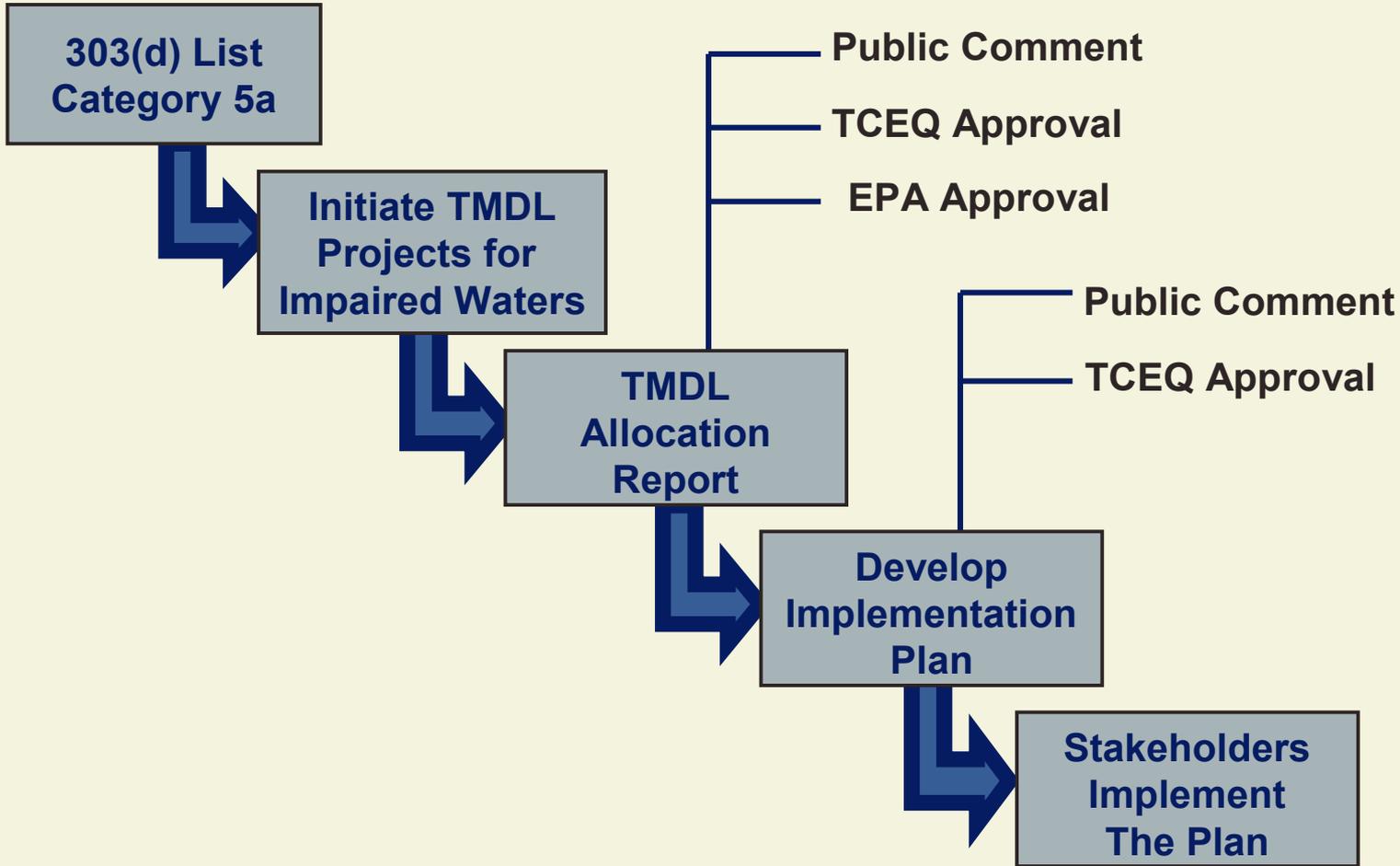


Main Elements of a TMDL

- ▶ 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 or 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

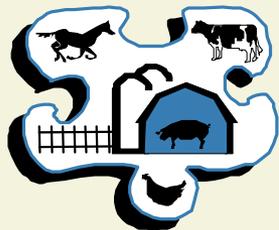
- ▶ TMDL Implementation Plans (IPs)
- ▶ Watershed Restoration Plans (WRPs)
- ▶ Both have the same goal — improving water quality in rivers, lakes, or bays.
- ▶ IPs are remedial actions for impaired waters; WRPs may be either remedial or preventive.
- ▶ IPs are based on total maximum daily loads; WRPs 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

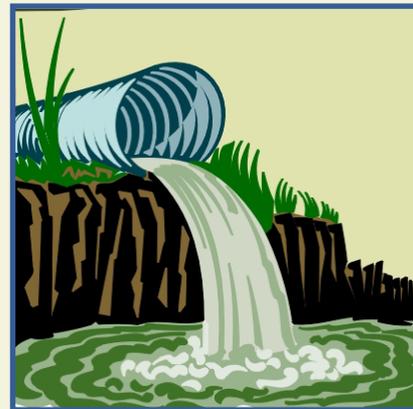


- ▲ Implementation plans (IPs) are collaborative and involve a wide variety of stakeholders.
 - ▲ Citizens, watershed interest groups
 - ▲ State, local, and federal agencies
 - ▲ Regulated organizations
- ▲ *Control actions* for point source discharges; *management measures* for nonpoint source discharges
- ▲ 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

