Restoring Water Quality in Texas Surface Waters

Ron Stein, Project Manager

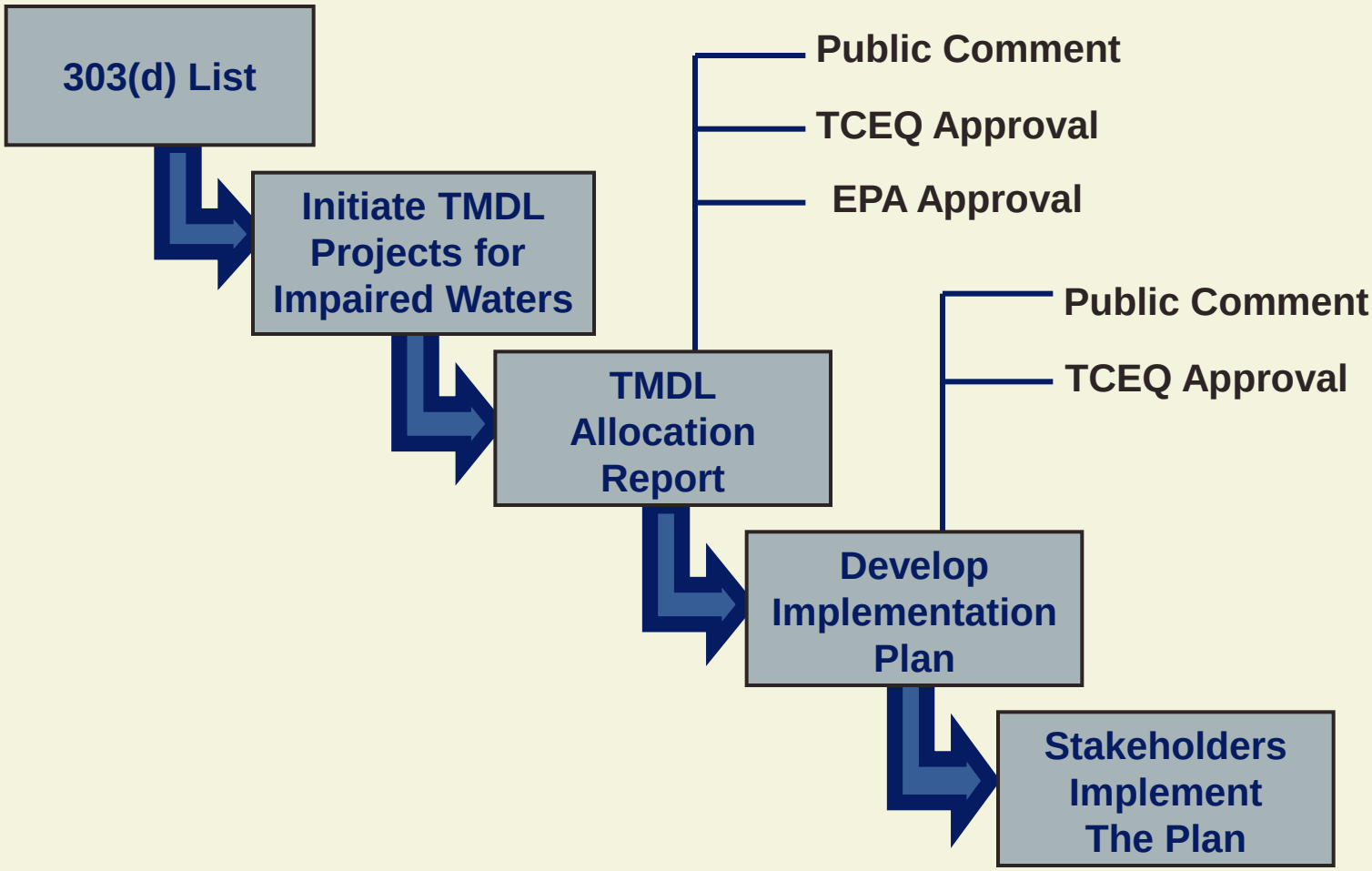
Total Maximum Daily Load Program

Texas Commission on Environmental Quality

Texas TMDL Program

- **Clean Water Act**
  - list impaired waters
  - take action to restore
- **Impaired**
  - *Texas Surface Water Quality Standards* identifies uses and criteria
  - does not meet the criteria for support of its beneficial uses.
  - ***Texas Water Quality Inventory and 303(d) List***
- **Restoration**
  - establish a total maximum daily load
  - develop an implementation plan.

TMDL Development Process

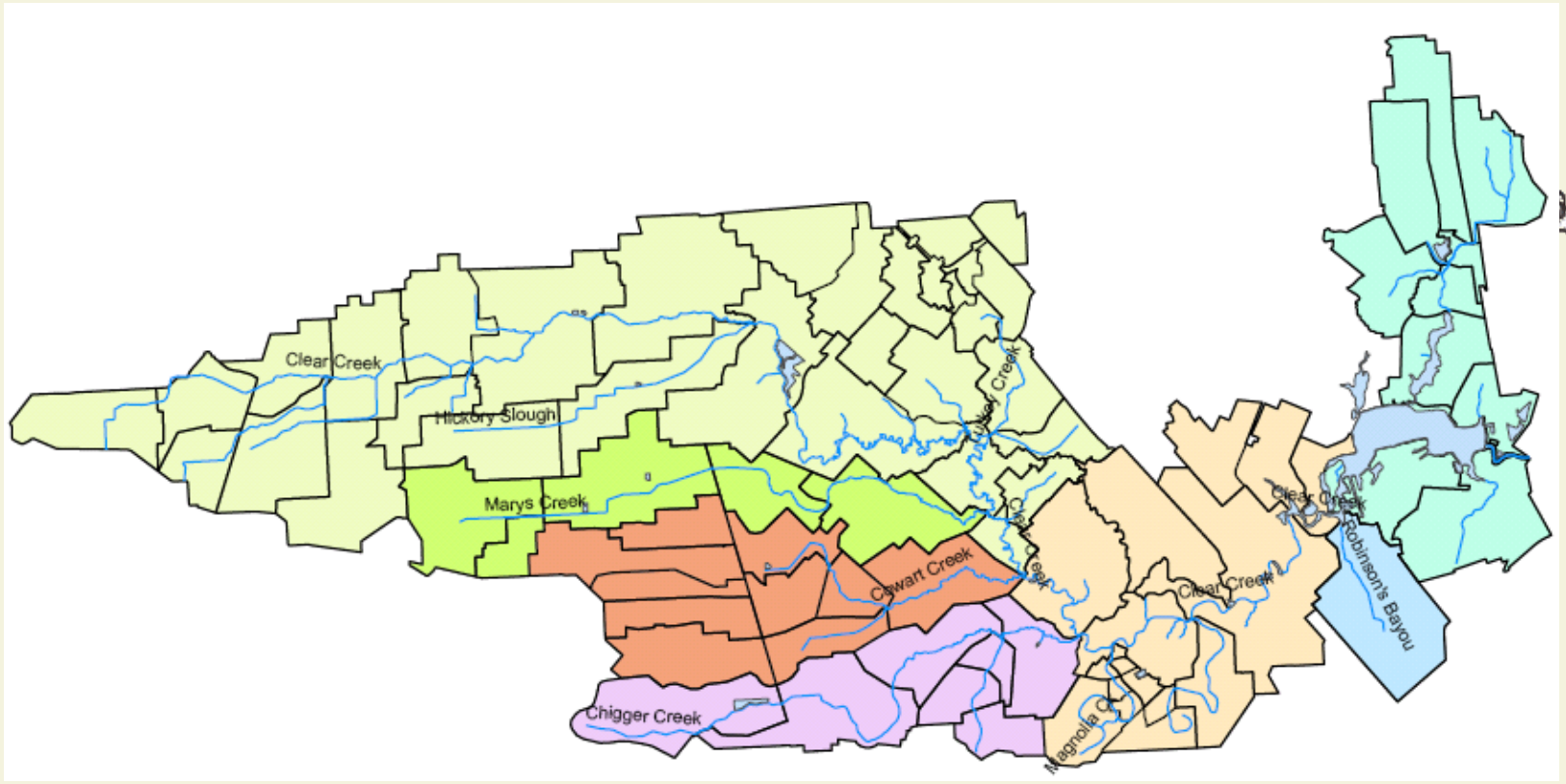


Clear Creek Watershed TMDL

Impaired

- *Texas Surface Water Quality Standards* identifies contact recreation standards for bacteria (E. coli)
- Six water bodies in the Clear Creek Watershed area are listed for exceeding the contact recreation standard
  - Clear Creek Tidal (Segment 1101)
  - Chigger Creek (Segment 1101B)
  - Clear Creek Above Tidal (Segment 1102)
  - Cowarts Creek (Segment 1102A)
  - Mary's Creek/North Fork Mary's Creek (Segment 1102B)
  - Robinson Bayou (2425C)

Clear Creek Watershed TMDL



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 the beneficial uses
  - Allocates this load to pollutant sources in the watershed.
- **Implementation Plan**
  A detailed description of the regulatory and voluntary actions necessary to achieve the pollutant reductions identified in a TMDL.
- **Each phase requires a separate advisory group**

Main Elements of a TMDL

- **Problem Definition**
  - How bad, where, and when
- **Source Identification and Analysis of Loads**
  - What are the sources of the bacteria and how much do they contribute
    - Discharges, Runoff, Wildlife' Sediment in the streams
    - Stakeholders supply local information
- **Source Loads and Receiving Waters Concentrations**
  - What are the affects of the source loads on the water quality

Main Elements of a TMDL

- **Endpoint Identification/Target Load**
  - For the flow conditions in the streams, how much can be discharged and still maintain the standard
- **Margin of Safety**
  - Factor for future growth in the watershed
  - May be explicit or implicit
- **Pollutant Load Allocation** (permitted and non-permitted)
  - How much do permitted and non-permitted sources need to be reduced to meet the target load

Implementing TMDLs

- Implementation plans (IPs) are collaborative and involve a wide variety of stakeholders.
- ***Control actions*** for discharges regulated through permits; ***management measures*** for discharges that are not regulated through permits
- Often, plans are phased in based on progress in achieving water quality improvement.
- Water quality improvement may take years.
- Monitoring progress is crucial.

Control Actions

- **TMDL allocations for discharges regulated through permits**:
  - New or amended permitted loads must be consistent with the TMDL.
    - New facilities or amended permits may be required to meet more stringent effluent limits.
    - Storm water permits may receive new or more stringent limits.
    - 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 to meet net load limit for watershed.

Management Measures

- **TMDL allocations for discharges that are not regulated through permits**
  - Managed through the use of best management practices (BMPs):
  - Management of runoff from sources without a storm water permit
    - Detention basins, filter strips, infiltration basins, porous pavement, retention ponds, swales, etc.
  - Management of operations to decrease or eliminate pollutants in runoff
    - Spill prevention and control, source controls, education, etc.

Benefits of the Process

The TMDL process is designed to determine the source of the problem and to set limits.

- Establish Load Limits

The Implementation process determines the plan that will return the water bodies to their designated uses.

- Reduce bacteria concentrations in the water bodies and achieve levels suitable for contact recreation

QUESTIONS

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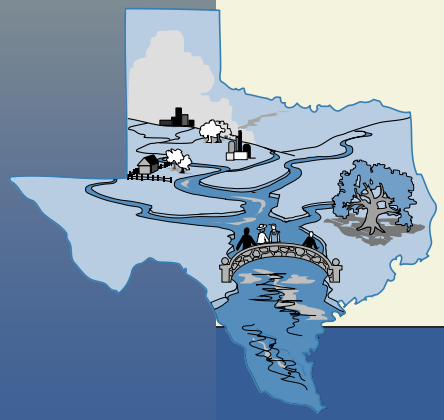
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