

# TMDLs and Storm Water

Ron Stein

**Total Maximum Daily Load Program**  
Texas Commission on Environmental Quality

9/16/14

# Texas TMDL Program

- Texas is required under the federal Clean Water Act to list impaired waters and to take action to restore them.
- Impaired waters are identified every two years on the *Texas Integrated Report of Surface Water Quality* .
- 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*. (307.1-307.10 TAC)

# Texas TMDL 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 broad categories of sources in the watershed.

## ➤ Implementation Plan

- A stakeholder developed plan to improve water quality includes a description of regulatory and voluntary management measures
- that includes a plan for sustaining the implementation effort over time.

# TMDL Pollutants

303(d) Parameter	Count	Percentage
Bacteria	344	36.44
Bacteria (Oyster Waters)	15	1.59
Chloride, Sulfate, Total Dissolved Solids	100	10.59
Dioxin in Edible Tissue	90	9.53
Depressed Dissolved Oxygen	130	13.77
Impaired Aquatic Life	21	2.22
Mercury in Edible Tissue	75	7.94
Metals in Water	5	0.53
PBCs in Edible Tissue	115	12.18
pH	37	3.92
Sediment Toxicity	6	0.64
Water Toxicity	5	0.53

# TMDL Allocations

- Waste Load Allocations – Regulated Sources
  - Load allocation for Waste Water Treatment Plants
  - Load allocation for all permitted stormwater sources
- Load Allocations – Unregulated
- Margin of Safety
  - Set aside for unexpected

# TMDL Allocations

$$\text{TMDL} = \text{WLA}_{(\text{WWTP})} + \text{WLA}_{(\text{PSW})} + \text{LA} + \text{MOS}$$

- $\text{WLA}_{(\text{WWTP})}$  – Waste Load Allocation for WWTP Discharges
- $\text{WLA}_{(\text{PSW})}$  – Waste Load Allocation for Permitted Storm Water Discharges
- LA – Load Allocation
- MOS – Margin of Safety
- Expressed in units per day

# TMDL Allocations

- Load allocation for Waste Water Treatment Plants
  - Individual facilities receive load allocations based on target concentrations
  - Based on full permitted flow
  - Updated quarterly through Water Quality Management Plan

# TMDL Allocations

- Load allocation for permitted stormwater
  - Aggregate allocation
    - For municipal, industrial, and construction storm water permits combined
  - Loads are not assigned to individual permits
  - Determination of allocation
    - Based on proportion of urbanized area in watershed covered by MS4
    - Sometimes based on watershed model

# Implementation Plans

- Water quality improvement plans developed by stakeholders in the affected watershed.
- Implementation plans are collaborative and involve a wide variety of stakeholders.
  - Citizens, watershed interest groups
  - State, local, and federal agencies
  - Regulated organizations

# Implementation Plans

## ➤ Coordination Committee

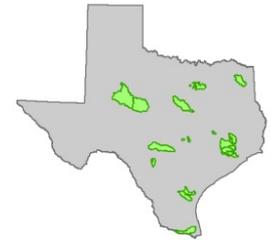
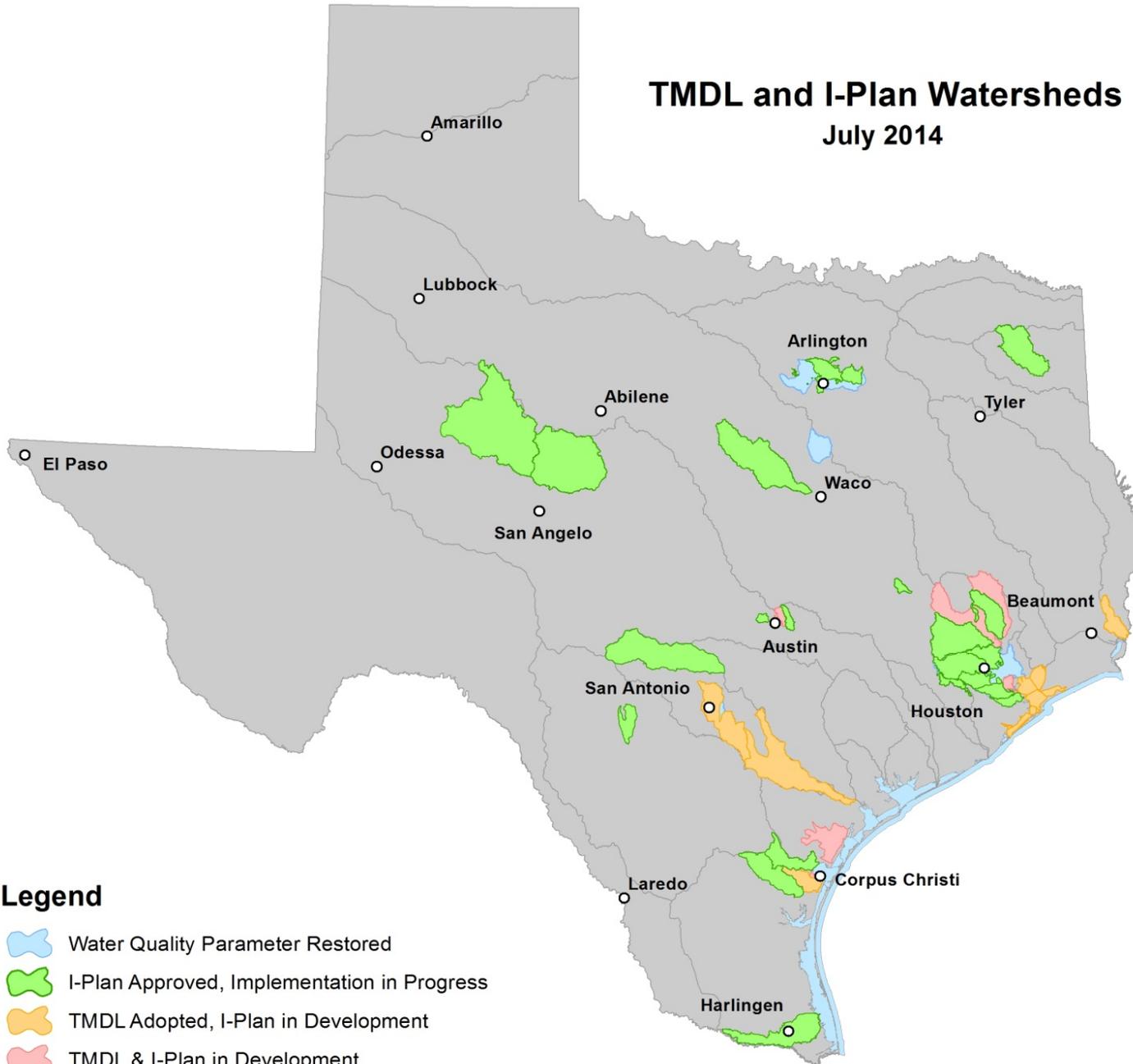
- Balanced representation of interests in the watershed
- Responsible for final plan and submitting it to the TCEQ for approval
- Identify and organize Work Groups
  - To develop implementation actions
- Develop the Water Quality Improvement Plan
- Promote Plan to gain cooperation in the watershed
- Obtain letters of support from organizations in the watershed
- Submit plan to TCEQ for approval

# Implementation Plans

- Plans describe the activities that will be implemented over a specific time period by the stakeholders to improve water quality.
- Strategy for continuing the effort is crucial.
  - Stakeholders meet annually to review progress
  - The stakeholders revise the plan as needed

# TMDL and I-Plan Watersheds

July 2014



## Legend

-  Water Quality Parameter Restored
-  I-Plan Approved, Implementation in Progress
-  TMDL Adopted, I-Plan in Development
-  TMDL & I-Plan in Development

# Typical Storm Water Management Measures

## ➤ Management of runoff (BMPs)

- Detention basins, filter strips, infiltration basins, porous pavement, detention ponds, swales
- Create and maintain an online library of best practices
- Organize and conduct training sessions
- Develop recognition program
- Retrofit existing BMPs
- Inspect existing BMPs

# Typical Storm Water Management Measures

- Management of operations to decrease or eliminate pollutants in runoff
  - Spill prevention and control, source controls, education
  - Street sweeping
  - Storm drain marking
  - Low impact development

# Typical Storm Water Management Measures

## ➤ Sanitary Sewer Overflows

- Reporting
- Cleaning
- Video surveys
- Consider Sanitary Sewer Overflow Initiative
- Develop, conduct FOG reduction program

## ➤ Outreach and Education

- Various activities

# Typical Storm Water Management Measures

## ➤ Illicit Discharges

- System Mapping
- Detection
- Elimination

## ➤ Monitoring

- Additional instream monitoring
- Outfall monitoring to identify sources
- BMP Effectiveness sampling
  - Up steam & down stream
  - Inlet & outlet

# Implementation Plans

It is the folks in the watershed who contribute to the development of the Implementation Plan that determine what will be required to manage the loads from all sources including storm water.

So get involved.



# For More Information On TMDLs

TCEQ TMDL Program Website:

<http://www.tceq.texas.gov/waterquality/tmdl/index.html>

Ron Stein

[rstein@tceq.texas.gov](mailto:rstein@tceq.texas.gov)

(512) 239-4507



# QUESTIONS?

## Communities Working Together

**Taking Care of Our Rivers, Lakes, and Bays**

**Take Care  
OF  
Texas**  
TakeCareOfTexas.org

TCEQ Total Maximum Daily Load Program

