



Addressing Recommendations from the Joint Task Force on Bacteria TMDLs



Total Maximum Daily Load Program
Texas Commission on Environmental Quality

Recreational TMDL Issues



- ▲ Large number of recreational use impairments
 - ▲ 2004 303(d) List – 183 Impairments
 - ▲ Draft 2006 303(d) – 294 Impairments
- ▲ Many different tools being implemented to develop bacteria TMDLs
- ▲ Stakeholder concern that approaches should use the best methods and data available

Bacteria TMDL Task Force



- ▲ Joint effort of TSSWCB and TCEQ
- ▲ Initial meeting September 26, 2006
- ▲ Final document June 4, 2007
- ▲ Task force members
 - Dr. Allan Jones (Chair)
 - Dr. George DiGiovanni Dr. Raghavan Srinivasan
 - Dr. Larry Hauck Dr. Hannadi Rafai
 - Dr. Joanna Mott Dr. George Ward
 - 50 additional expert advisors and agency personnel

Bacteria TMDL Task Force



- ▲ Examining approaches that other states use to develop and implement bacteria TMDLs
- ▲ Recommending cost-effective and time-efficient methods for developing TMDLs
- ▲ Recommending effective approaches for developing implementation plans
- ▲ Evaluating the variety of models and bacteria-source-tracking methods available for developing TMDLs and implementation plans, and recommending under what conditions certain methods are more appropriate
- ▲ Developing a roadmap for further scientific research needed to reduce uncertainty about how bacteria behave under different water conditions in Texas

Bacteria TMDL Task Force - Report



- ▲ **Bacteria Fate and Transport Models**
 - Load duration curves (LDC) Mass balance approaches
 - Spatially explicit methods Mechanistic approaches
- ▲ **Bacteria Source Tracking (BST)**
 - Method descriptions Regulatory expectations and capabilities
 - Method comparisons Future direction
- ▲ **Research and Development Needs**
 - Characterization of sources
 - Characterization of kinetic rates and transport mechanisms
 - Enhancements to fate and transport models
 - Bacteria source tracking
 - Control measure effectiveness
 - Quantification of uncertainty and communication of risk

Recommended Approach – Three Tiers



- ▲ **Tier 1 – One year**
 - Required for all TMDLs

 - Form TMDL stakeholder advisory group
 - Develop GIS inventory for watershed
 - Calculate load duration curves (LDC)
 - Analyze data

Recommended Approach – Three Tiers



- ▲ Tier 2 – One-to-two years
Most bacteria TMDLs – May be adequate for I-Plans

Implement targeted monitoring

Library-independent BST and some library dependant

Develop simple LDC, GIS and/or Mass balance models

Analyze data

Recommended Approach – Three Tiers



- ▲ Tier 3 – Two-to-three years
Normally for I-Plan development – Some complex TMDLs

Assure extensive stakeholder involvement

Perform extensive library-dependent BST

Complete mechanistic modeling

Analyze data

Bacteria TMDL Task Force



- ▲ Joint meeting and work session – June 29, 2007

▲ Actions

Adoption of task force recommendations

Support for the development of bacteria TMDL guidance

Formation of statewide bacteria workgroup

Support for ongoing water quality standards revision process

Resume TMDL efforts in areas where activities were suspended pending the outcome of the Task Force

Sandies\Elm Creeks Project



▲ Tier 1

- Form TMDL stakeholder advisory group
- Develop GIS inventory for watershed
- Calculate load duration curves (LDC)

▲ Tier 2

- Implement targeted monitoring
- Library-independent BST and some library dependant
- Develop simple LDC, GIS and/or Mass balance models

▲ Tier 3 - ????????

Bacteria TMDL Task Force



▲ Website

<http://twri.tamu.edu/bacteriatmdl/>


