Watershed Planning & Watershed-Based Plans

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Texas Water Resources Institute

- Est. in 1952 and designated by TX Legislature & Governor in 1964 as the state’s official water resources institute
  - Authorized by Water Resources Research Act of 1964
  - Represents Texas as part of the National Institutes for Water Resources Research
Texas Water Resources Institute

- Mission
  - We work to foster and communicate research and educational outreach programs focused on water resources science and management issues in Texas and beyond.

- What We Do
  - **Restore & Protect:** use science and stakeholder involvement to restore and protect water quality
  - **Sustain & Enhance:** increase the value and smarter use of municipal, industrial and ag water supplies to meet growing demand
  - **Engage & Educate:** provide training to citizens, students, and professionals regarding critical water issues and management strategies
TWRI Services

- Grant Writing & Program Management
- Communications
  - tx H2O – semi-annual print/E-magazine
  - Conservation Matters – monthly E-newsletter
  - Texas+Water – E-newsletter in partnership with Meadows Center for Water and Environment
- Professional Training
- Watershed Planning & Assessment
- Student Training & Support

twri.tamu.edu
THE WATERSHED-BASED PLANNING APPROACH
The Watershed Approach

- Flexible framework for voluntarily managing water resource quality and quantity within a specific drainage area or watershed
  - Doesn’t stick to traditional political boundaries

- Includes stakeholder involvement and management actions supported by sound science and appropriate technology
Watershed-Based Planning

- A comprehensive approach that combines:
  - Science
  - Community Input
  - Strategic Planning

To get the water quality improvements or resource protection desired
A Watershed-Based Plan

- Provides assessment and management information for a geographically defined watershed
  - Includes:
    - Analysis
    - Actions
    - Participants
    - Resources
Why is it important to write a Watershed-Based Plan?

- Watersheds serve as logical landscape units for environmental management
- Approaching NPS pollution problems in a watershed framework helps communities evaluate and prioritize problems affecting ground and surface waters
- Watershed planning connects the community’s decision-making to sensible data collection and defensible analysis
- Recording those decisions in a WPP increases the probability that the problems will be addressed
EPA Guidance for Developing Watershed-Based Plans

What Makes Watershed-Based Planning Different?

- Geographically defined
- Iterative
- Holistic
- Integrated
- Collaborative
How do you develop a WBP?

1. Build Partnerships
2. Characterize the Watershed
3. Finalize Goals and Identify Solutions
4. Design an Implementation Program
5. Implement Watershed-Based Plan
6. Measure Progress & Make Adjustments
1. Build partnerships

- Identify key stakeholders
- Identify issues of concern
- Set preliminary goals
- Develop indicators
- Conduct public outreach
2. Characterize the watershed

- Gather existing data & create a watershed inventory
- Identify data gaps & collect additional data if needed
- Analyze data
- Identify causes & sources of pollution that need to be controlled
- Estimate pollutant loads
3. Finalize goals & identify solutions

- Set overall goals & management objectives
- Develop indicators/targets
- Determine load reductions needed
- Identify critical areas
- Develop management measures to achieve goals
4. Design implementation program

- Develop implementation schedule
- Interim milestones to track implementation of management measures
- Develop criteria to measure progress toward meeting watershed goals
- Develop monitoring component
4. Design implementation program, continued...

- Develop information/education component
- Develop evaluation process
- Identify technical & financial assistance needed to implement plan
- Assign responsibility for reviewing & revising plan
5. Implement the WBP

- Implement management strategies
- Conduct monitoring
- Conduct information/education activities
6. Measure progress & make adjustments

- Review & evaluate information
- Share results
- Prepare annual work plans
- Report back to stakeholders & others
- Make adjustments to program
## 9 Key Elements of a WBP

<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Identification of causes &amp; sources</td>
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<tr>
<td>B</td>
<td>Estimate of needed load reductions</td>
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<tr>
<td>C</td>
<td>Description of management measures</td>
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<tr>
<td>D</td>
<td>Estimate of technical &amp; financial assistance</td>
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<td>E</td>
<td>Information/education component</td>
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<td>F</td>
<td>Schedule for implementation</td>
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<td>G</td>
<td>Description of measurable milestones</td>
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<td>H</td>
<td>Criteria developed to determine if load reductions are achieved</td>
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<tr>
<td>I</td>
<td>Monitoring component to evaluate effectiveness</td>
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Texas Watershed-Based Planning

Navasota River
Below Lake Limestone
Watershed Protection Plan

Update to the
Arroyo Colorado
Watershed Protection Plan

Lavaca River
Watershed Protection Plan

Attoyac Bayou
Watershed Protection Plan

*Does not include TMDLs for pesticides, legacy pollutants, or metals.

WC = Watershed Characterization
WPP = Watershed Protection Plan
TMDL = Total Maximum Daily Load
Plan Implementation

- Assist local groups implement completed plans
  - Identify sources of funding
  - Develop project proposals
  - Document implementation success
  - Track water quality trends
    - Volunteer monitoring
- Administer grants

Management Milestones

- Repair or replace 25 failing septic systems
- Develop conservation plans or water quality management plans for 45 agricultural operators
- Decrease feral hog populations by 20%
- Reduce illicit dumping at bridges
Top 10 Watershed Lessons:

1. The best plans have clear visions, goals & action items.

2. Good leaders are committed & empower others.

3. Having a coordinator at the watershed level is desirable.
Top 10 Watershed Lessons:

4. Environmental, economic & social values are compatible.

5. Plans only succeed if implemented.

6. Partnerships equal power.

7. Good tools are available.
Top 10 Watershed Lessons:

8. Measure, communicate & account for progress.

9. Education & involvement drive action.

10. Build on small successes.
Questions?

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