

## North Central Texas Water Quality Project



### Nine Elements of a Watershed Protection Plan

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## North Central Texas Water Quality Project



### Nine Elements of Watershed Protection Plans

1. Identify the sources and causes of pollution
2. Estimate the necessary load reductions
3. Describe Point Source and Non-Point source management measures
4. Assess the technical and financial assistance needed
5. Design an informational/ educational component
6. Develop a schedule of implementation
7. Set interim measurable milestones for progress
8. Establish criteria to determine load reductions
9. Create a monitoring component

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### Element 1: Identify Causes of Concern

- Point Source Pollution
  - Wastewater Treatment Plant Discharges
  - Industrial Discharges
  - Confined Animal Feeding Operations (CAFO)
- Non-Point Source Pollution
  - Stormwater
  - Agricultural Run-off
  - Sediment
  - Nutrients
  - Toxic chemicals

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### Element 1: Identify Causes of Concern

- Pollution loads and sources were identified by Tarrant Regional Water District and the Texas A&M University Spatial Sciences Laboratory using the following techniques:

#### Modeling:

- SWAT Modeling- Watersheds
- WASP Modeling- Reservoirs
- QUAL2E- Streams

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### Element 2: Estimate Load Reductions

Load Reductions based on:

- SWAT model outputs
- Effectiveness of Best Management Practices (BMP) tied to land use and changes

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### Element 3: Nonpoint Source Management

Best Management Practices Implementation

- Structural
  - Filter strips
  - Grassed Waterways
  - Rain Gardens
  - Constructed Wetlands
- Behavioral
  - Nutrient Management (Urban and Agricultural)
  - Pet Waste Clean up
  - Wise use of pesticides

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### Element 3: Point Source Management

- Infrastructure upgrades to WWTP's
- Permitting programs
- Stormwater development planning

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### Element 4: Assess Technical and Financial Assistance Needed

#### Technical:

- AgriLife Extension
- TCEQ
- SWCD
- USDA-NRCS
- TRWD
- TPWD

#### Funding:

- EPA
- TCEQ
- TSSWB
- USDA-NRCS
- Local Grants
- Local Government
- TRWD
- Others

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### Element 5: Design Education Component

- Mass Media
- Demonstration sites
- Meetings and workshops
- Onsite technical assistance
- Citizen monitoring programs
- Training and certification programs

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### Element 6: Develop a Schedule of Implementation

- Nonpoint source structural improvements
- Point source discharge (based on improved standards)
- Educational programs
- Monitoring Programs

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### Element 7: Set Interim Measurable Goals

#### Watershed

- Implementation of BMP's

#### Reservoir

- Water Quality improvement

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### Element 8: Establish Criteria to Determine Load Reductions

#### Watershed

- Number and type of structural Best Management Practices established

#### Reservoir

- Achievement of TCEQ Standards
- 303(d) status

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#### **Element 9: Create a Monitoring Program**

##### Watershed

- Quarterly Water Quality Monitoring of Strategic Locations

##### Reservoir

- Quarterly Monitoring of Ambient Water Quality in Eagle Mountain Reservoir

##### Educational

- Behavioral changes resulting from education programs

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#### **Nine Elements of Watershed Protection Plans**

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