

## North Central Texas Water Quality Project

### Urban and Reservoir Best Management Practices

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### Urban/ Issues of Concern

- Sediment
- Bacteria
- Nutrients
- Chemicals



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### Why is Stormwater a Concern?

- Water following a rain event that does not infiltrate the surface
- Potential to introduce new pollutants into surface water
- TCEQ regulates stormwater

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### Why is Stormwater a Concern?

- Storm water can pick up pollutants and deliver them to other areas
  - Lake
  - Stream
  - River
  - Wetland
  - Coastal Water
- Discharged Untreated



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### Why is Stormwater a Concern?

- Construction soil loss increases 20 times compared to regular land use
- Runoff leads to expensive erosion loss repairs
- Effects surface water bodies by allowing sediment and pollutants to enter

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### Urban Best Management Practices

- Construction Site Management
- Sand Filter
- Detention Ponds
- Illegal Dumping Prevention
- Septic System Maintenance
- Residential Fertilizer Management
- Rainwater Harvesting
- Bioswales/Rain Gardens
- Pet Waste Management
- Soil Testing
- Constructed Wetlands

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### Construction Site Management

- Seed Roadways and Dirt Piles
- Construction Sediment Control
- Permeable Paving Surfaces
- Storm Drain Blockage



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### Sand Filters

- Sand filters trap sediment keeping it out of storm drains



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### Detention Ponds

- Detention ponds trap excess run off to prevent flooding excess stormwater from entering watershed



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### Illegal Dumping Prevention/Clean up

- Enforcement of anti dumping laws and clean up programs assist in keeping watersheds clean



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### Septic System Maintenance

- Maintaining septic systems prevents the entry of bacteria and nutrients into stormwater run-off



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### Residential Fertilizer Management

- Controlling amounts of lawn fertilizer and lawn clippings
- Prevents the runoff of nutrients and vegetation into storm drains



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### Rainwater Harvesting

- Can prevent flooding and erosion
- Additional water supply
- Slows run-off and allows water to infiltrate into the ground

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### Bioswales/Rain Gardens

- Swales constructed in low-lying areas slow runoff and encourage groundwater infiltration. Rain gardens detain run-off and allow for infiltration.



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### Pet Waste

- Picking up yards and parks prevents stormwater from passing over pet waste and picking up bacteria and nutrients



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### Soil Testing

- Determines soil type, texture, pH and nutrient content of urban soils to determine what actions are needed



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### Constructed Wetlands

- Constructed wetlands retain stormwater and provide a natural filter and wildlife habitat



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### Reservoir BMP's

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### Hypolimnetic Aeration

- Mixing of colder water layer with air
- Reduces anoxic release of phosphorus from sediments

### Hypolimnetic Release

- Release of colder, nutrient rich waters from reservoir
- Reduces opportunity for eutrophic conditions

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### Alum Treatment

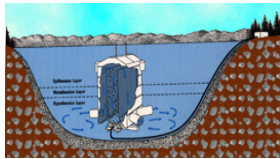
- Alum addition to floc phosphorus and reduce availability to algae

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### Water Column Mixing

- Water column mixing- disrupts blue-green algae cycle



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### Dredging

- Removes sediment

