

## North Central Texas Water Quality Project

### Urban and Waste Water Best Management Practices

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## North Central Texas Water Quality Project

### 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 of concrete and asphalt.
- Impervious surfaces accelerate the flow of stormwater
- Potential to introduce new pollutants into surface water
- Erosion of existing urban soils

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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



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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

- Rainwater harvesting
- Constructed wetlands
- Bioswales/ rain gardens
- Septic system maintenance
- Residential fertilizer management
- Illegal dumping prevention
- Construction site management
- Pet waste management
- Sand filter

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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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### Swales/ 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 pH and nutrient content of urban soils to determine what actions are needed



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### Wastewater Treatment Plant Best Management Practices

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### Eagle Mountain Wastewater Plants



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### Waste Water Treatment Plant Nutrient Removal

- Level I- Current NPDES Permit Levels and Infrastructure
- Level II
  - Denitrifying filters
  - Alum addition for phosphorous removal
  - Additional solids handling capacity
- Level III
  - Level II
  - Begin feeding a carbon source (methanol) for denitrification
  - Increase alum feed rate