Meeting Overview

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Review and Discussion of Plum Creek Load Duration Curves
Review and Discussion of Potential Pollution Source Assessment

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Progress on the Watershed Protection Plan Development

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Next Steps

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Texas Cooperative Extension
Role of Work Groups

- Work groups are an extension of the steering committee that discuss and work on specific topical areas.
- Make recommendations and develop components of the WPP for their topic.
- Provide leadership in implementation of practices.
Work Group Tasks

- Identify pollutant sources.
- Gather data and information and identify gaps.
- Estimate pollutant loads
- Set Goals and Objectives
- Identify BMPs that could be implemented to reduce pollution.
- Identify Outreach and Education that is needed
- Develop an Implementation Schedule.
Work Groups

1. Outreach and Education
2. Urban Stormwater and NPS
3. Agriculture NPS
4. Wastewater Infrastructure/Industry
5. Water Quality and Habitat
Load Duration Curves (LDC)

Used for analyzing trends and sources of contaminants
GBRA monitoring site 17406 (near Uhland)

Flow Duration Curve (01/01/1980 to 04/04/2006)

- Stream flow rates (Y axis) vs. percent of days the stream flow exceeded a value on the Y axis (X axis)
- Stream flow data was based on adjusted USGS 8172400 flow data

40% of the time there has been no flow at this site.
GBRA monitoring site 17406 (near Uhland)


- LDC gives the target loads during different flow conditions (high, mid range, and low flow conditions)
GBRA monitoring site 17406 (near Uhland)


EColi Daily load (cfu/day)

Percent of days load exceeded

LDC
Monitored data

GBRA monitoring site 17406 (near Uhland)
A model of monitored data can be created to obtain the average trend in loads.

Restoration plans can use this model to estimate the average decrease needed in loads during different flow conditions.

Relative reduction in load in mid-range flow regime, based on current trend = 59%
LDC analysis for TCEQ site 12647 near Lockhart
Monitored loads for 12647 fall close to the target loads (given by LDC) for varying range of flows.

Stream flow data obtained from USGS 8172400, since very good compliance between USGS flow data and 12647 flow data for the same monitoring dates.
Waste water treatment plant Lockhart 2 is always below its permitted load limit. However, permitted load is indifferent to lower stream load limits during low flow and no-flow conditions.
LDC analysis for GBRA site 12640 near Luling
GBRA Site 12640 (near Luling) Load Duration Curve (monitoring data 1996 to 2006)

- **Load Duration Curve (at water quality standard)**
- **Load Duration Curve (with 10% margin of safety)**
- **Highest Measured Concentration**
- **Actual EColi Loads as Sampled**
- **Measured Ecoli (from FC) Loads**

**Preliminary reduction in load in mid-range flow regime, based on current trend = 58%**
Load Duration Curve for Total NO3-N+NO2-N (standard = 2.76 mg/l)

- TP_LDC
- TP_monitoredLoads
- TP_ModelOfMonitoredLoads
Load Duration Curve for Total Phosphorus (standard = 0.8mg/l)

- TP_LDC
- TP_monitoredLoads
- TP_ModelOfMonitoredLoads