



Water Quality Modeling in Louisiana





Modeling Projects

- **TMDL Modeling** = Watershed based models to determine allowable loading based on a given criteria and critical conditions (LAQUAL)
- **Permit /Antidegradation Support Modeling** = Evaluate impact of increased loading from an individual discharge (LAQUAL)
- **Nonpoint Source Pollutant Modeling** = Evaluate nonpoint loading and BMP removal efficiencies (SWAT)
- **Natural Background Modeling** = Evaluate natural background conditions for criteria evaluations



TMDL Modeling

- Conducted in all 12 basins throughout the state under consent decree
- Currently focused on revising 8 DO TMDLs based on revised criteria in the Barataria and Terrebonne basins
- Currently using LAQUAL



TMDL Modeling

TMDL Revisions

- Bayou Lafourche (020401)
- Bayou Segnette (020701)
- Bayou Des Allemands (020301)
- *Bayou Terrebonne (120301)*
- Intercoastal Waterway (120109)
- Upper Grand River and Lower Flat River (120107)
- *Lower Grande and Belle River (120201)*
- Bayou Black (120202)



Permit / Antidegradation Support Modeling

- Focused on:
 - Waterbodies with TMDLs
 - Impaired waterbodies
 - Outstanding Natural Resource waterbodies (ONRW, Tier III)
- Plan to develop a baseline model for the Tchefuncte River to evaluate the impact of new discharges
- Typically use LAQUAL



Nonpoint Source Pollutant Modeling

- Evaluate sources of nonpoint loads
- Evaluate BMPs effectiveness
- Determine optimal location of BMPs
- Determine monitoring sites
- Previously used AnnAGNPS
- Currently using SWAT



Natural Background Modeling

- Conducted to support DO criteria evaluations
 - Lower Mississippi River Alluvial Plains (LMRAP)
 - Southern Plains Terrace and Flatwoods (SPTF)
 - Terrace Uplands (TU)
- Used existing calibrated models
- Removed all man-made loading



CONTACT INFORMATION

Jennifer Sheppard, Water Quality and General Permits Manager

Phone: 225-219-3197

Email: jennifer.sheppard@la.gov

Chuck Berger, Water Quality Modeling /TMDL Technical Advisor

Phone: 225-219-3366

Email: chuck.berger@la.gov

LDEQ's TMDL Webpage:

<http://www.deq.louisiana.gov/portal/Default.aspx?tabid=130>