



Brazos River Authority

Modeling Peer Review

Modeling Facts

- Computer generated models are used to assess how the natural environment react to changes
- Models are not 100% accurate
- When paired with other analyses like land use analysis, sanitary surveys and bacterial source tracking, models can be a valuable tool in identifying sources of water quality impairments and in evaluating the effectiveness of potential control mechanisms

Purpose of Peer Review

- Verify model selection
- Confirm literature values selected are good and in line with what is being used elsewhere in the state
- Have panel of modeling experts validate that processes being used are in accordance with general modeling practices

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Participants - Academic

- George H. Ward, Jr., Ph.D.
 - Associate Director of the Center for Research in Water Resources at the University of Texas
 - Research Focus
 - Stream, River And Lake Water Quality Analysis
 - Surface-Water Hydrology
 - Modeling Of Rivers, Lakes And Estuaries
 - Lake And Reservoir Hydromechanics And Temperature Structure
- Neal E. Armstrong, Ph.D., PE, BCEE
 - First Vice Provost for Faculty Affairs at the University of Texas
 - Research Focus
 - River, lake, and estuary water quality problem analysis
 - Water Quality management/policy
 - Water quality modeling of rivers, lakes, and estuaries
 - Pollution ecology

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Participants – Academic, Continued

- R. Srinivasan, Ph.D.
 - Director Spatial Science Laboratory at Texas A&M University
 - Research Focus
 - Advanced spatial analysis
 - Spatial data handling
 - Using spatial models to address natural resource issues
- Raghupathy Karthikeyan, Ph.D.
 - Assistant Professor in the Department of Biological and Agricultural Sciences at Texas A&M University
 - Research Focus
 - Water quality engineering
 - Bioresources technology
 - Ecological engineering
 - Environmental hydrology

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Participants - TCEQ

- Linda Brookins – Special Assistant to the Deputy Director of the Office of Compliance and Enforcement
- Patrick Roques – Section Manager for the Water Quality Monitoring and Assessment Section
- Laurie Curra – Team Leader Watershed Management Team
- Allison Woodall – TCEQ Project Manager
- Sidne Tiemann – Water Quality Standards Team
- James McCaine – Technical Specialist for the On-Site Sewage Facilities Program
- Charles Marshall – Technical Specialist for the Water Quality Assessment Team
- Andrew Sullivan – Technical Specialist for the Total Maximum Daily Load Program

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Model Selection

- All participants agreed that model selection and approach were appropriate for both the lake and coves given the available data

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Literature Values

- All participants agreed that selected literature values were appropriate and frequently used in models for Texas lakes and coves

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Overall Conclusion of Peer Review

- Experts validated the process being used and model selection and literature value selection are in accordance with general modeling practices