AGENDA

TRINITY RIVER PCB TMDLs PUBLIC MEETING

NORTH CENTRAL COUNCIL OF GOVERNMENTS
616 SIX FLAGS DRIVE
CENTERPOINT II (TOM VANDERGRIFF CONFERENCE CENTER)
WILLIAM J. PITSTICK EXECUTIVE BOARD ROOM , FIRST FLOOR

Monday, May 11, 2009
1:00 P.M. – 3:00 P.M.

1. Welcome & Introductions

2. 319 Grant Funding for TMDL Implementation Projects

3. Overview of Trinity River PCB TMDL Project

- TMDL Overview and Process
- PCBs Review
- PCB Conceptual Model
- Data Collection Summary (March 2008 – August 2008)
- Preliminary Data Results (March 2008 – August 2008)
- General Data Observations
- Next Steps

4. Open Discussion of Ongoing TMDL Project Work

5. Meeting Conclusion

- Next Meeting Plans

6. Adjourn

The TCEQ web page for this TMDL project may be found at:
http://www.tceq.state.tx.us/implementation/water/tmdl/77-trinity_pcbs.html
The web page includes the project overview, meeting information,
meeting summaries, and project documents.

NCTOG Offices Locator Map Available at www.nctcog.org/aa/locator_map.asp

Attendees:

Susan	Alvarez	City of Dallas
Darrel	Andrews	Tarrant Regional Water District (TRWD)
Mike	Bastian	CH2M HILL
Bill	Brown	City of Arlington
Sam	Brush	North Central Texas Council of Governments
Robert	Chambers	Freese & Nichols
Glenn	Clingenpeel	Trinity River Authority
Beatriz	Dongell	CH2M Hill
Ronna	Edwards	Upper Trinity River Water District
Mark	Ernst	Tarrant Regional Water District
Moss	Fennell	HNTB
Derek	Ivie	North Texas Tollway Authority
Curry	Jones	U.S. EPA Region 6
Terry	Jones	Exelon Power
Angela	Kilpatrick	Trinity River Authority
Rod	Kinard	Oncor
Randy	Loftis	Dallas Morning News
William	Madison	City of Dallas
Cathy	Matthews	City of Fort Worth
Tracy	Michel	North Central Texas Council of Government
Craig	Mobley	U.S. Geological Survey
Tim	Raines	U.S. Geological Survey
John	Rath	
Bob	Ressl	City of Arlington
David	Rutledge	Luminant (formerly TXU)
Robert O.	Scott	Tarrant Coalition for Environmental Awareness
Sala N.	Senkayi	U.S. EPA Region 6
T.	Sury	City of Grand Prairie
Christopher	Tolar	Texas Department of Transportation
Elizabeth	Turner	City of Dallas
George	Walters	U.S. Air Force (ASC/ENVR)
Paul	White	City of Dallas
Christy	Yorek	Lockheed Martin
Krystal	Zwinggi	North Central Texas Council of Government

Support Staff:

Dania Grundmann – Texas Commission on Environmental Quality (TCEQ)
Katherine Nelson - TCEQ
Earlene Lambeth – TCEQ
John Mummert – TCEQ – Region 4
Rob Cook – TCEQ – Region 4
Mark Palmie - TCEQ
Randy Palachek– Parsons Corporation
Kirk Dean – Parsons Corporation

Administrative Issues

The third informal public meeting of the Trinity River Polychlorinated Biphenyls (PCBs) Total Maximum Daily Load (TMDL) Project was held on May 11, 2009. The meeting was scheduled by the TCEQ to update the public stakeholders on the development of TMDLs that are addressing PCBs in the Trinity River watershed. The goal of the TMDL project is to determine the allowable loads of PCBs that the impaired stream segments of the Trinity River located in the Dallas-Fort Worth Metroplex can receive and still meet the fish consumption use. The meeting included a presentation on the Texas Nonpoint Source Pollution Program, a discussion of the TMDL process, history of PCB impairment in the area, sampling results and other pertinent project information. The meeting was well attended and self-introductions were made by all meeting attendees.

Nonpoint Source Pollution Grant Cycle

Mark Palmie presented information regarding the Texas Nonpoint Source (NPS) Pollution Program (Clean Water Act §319(h)) grant program. Mark explained that one of the highest priorities of the NPS program is to fund projects that are designed to restore water quality from NPS pollution in watersheds where stream segments are listed on the Section 303(d) list of the Clean Water Act. The NPS funds are administered through the Texas State Soil and Water Conservation Board (agriculture and silviculture projects) and the TCEQ (urban and other types of NPS pollution).

The NPS program has been allowed to work with entities that have a municipal separate storm sewer system (MS4) permit but cannot fund a project that is covered in a MS4 permit. The Environmental Protection Agency (EPA) provides 60% of the federal funds and requires a 40% match. Matching sources could be cash (most common source is salaries or fringe benefits), in-kind (3rd party services) or state revolving fund loans. Subcontactors are allowed under the states' §319(h) NPS grant program.

Mark encouraged stakeholders to apply for "incremental" 319 funds that would be available in the Trinity River watershed when the due Trinity River PCB Implementation Plan is completed. He said it was important when applying for the funding to demonstrate pollutant load reductions of pollutants of concern (i.e., nitrogen, phosphorus, sediments, PCBs, bacteria, etc) and water quality restoration. This could be demonstrated long-term through in-stream base-line monitoring efforts or short-term through trends or by calculating pounds of pollutant loadings being reduced through the project being funded. Mark said that modeling is another way to demonstrate pollutant load reductions through a §319(h) NPS project effort.

The annual §319(h) NPS grant cycle had approximately $5.5 million available in FY09 for projects throughout the state. Mark encouraged stakeholders to begin planning and preparing to apply for the funds now before the grant application cycle begins in the fall. Mark said the NPS Team may be available to discuss potential projects. He indicated they may be able to suggestions if the applicant has difficulties for meeting the 40% match requirement. He said the last cycle success rate for funding was approximately

50% because the 319 program was able to fund 15 of approximately 30 proposed applications.

Mark would like stakeholders to provide contact information if they would like to be notified when the grant application cycle is posted in the fall. You can call or e-mail your contact information to Mark Palmie at the TCEQ at (512) 239-0849 or mpalmie@tceq.state.tx.us.

Question: Are you saying you have to put in a monitoring and modeling component when applying for grant funds?
Answer (Mark): No. Although, we have projects that have used both, modeling and monitoring. They used the monitoring component to help calibrate the model. It is not required to include both monitoring and modeling. But it can be helpful. There are different types on models that can be used. EPA has provided a STEPL model that is an Excel based spreadsheet. EPA has asked us to provide pollutant load reductions on the program level. This may not be required for every project. For example if you are applying for education and outreach funding, it may be difficult to determine the pollutant load reductions as a result of the project. But, it may help in the competitive ranking process if you can calculate load reductions.

Question: What is the length of time monitoring is required?
Answer (Mark): That varies on the project. It is important to collect enough data to establish a base-line to quatify later load reductions from implemented Best Management Practices (BMPs). Some grant recipients begin monitoring efforts before construction of BMPs begins or after construction is complete. There is not a set requirement and there is some flexibility. Again, It is good to begin planning the project early. You can contact us if you have questions

Question: Is there a web site that gives a description of what projects were funded last cycle?
Answer (Mark): Some recent §319(h) NPS grant projects may be listed on the project web page located at: http://www.tceq.state.tx.us/nav/eq/nonpointsrcpgm.html. We are working on providing more project information on our web page. At the same site you are able to see some "tools" that can provide additional information on modeling and databases of BMPs.

Polychlorinated Biphenyls (PCBs)

The next presentation was by Dr. Kirk Dean with Parsons Corporation, the consultant contracted for the TMDL project. PCBs impairments were listed on the 2002 303(d) list as a result of a fish consumption advisory and an aquatic life closure issued by the Texas Department of State Health Services (DSHS) in 2002. The Texas Department of State Health Services (TDSHS) determines human health risks associated with fish consumption. At the present time, there is a fish possession ban and fish consumption advisory issued by the TDSHS for portions of the Trinity. The impaired areas are approximately 150 miles in length and begin near downtown Fort Worth in Tarrant

County, and extend downstream, to the discharge of Cedar Creek Reservoir in Henderson/Navarro counties and include the following segments:

- Lower one mile of Clear Fork Trinity River Below Lake Benbrook, Segment 0829
- Lower twenty-two miles of West Fork Trinity River Below Lake Worth, Segment 0806
- All twenty-seven miles of the Lower West Fork Trinity River, Segment 0841
- All one hundred miles of the Upper Trinity River, Segment 0805.

Kirk also reviewed with the group the basic information about PCBs and explained that the 209 compounds (congeners) collectively known as PCBs have varying toxic effects, limited water solubility, and tend to be associated with sediments in aquatic systems. PCB congeners are also known to partition into fish tissue (due to the fat content of the fish). The production, distribution and new use of products with these compounds were banned in 1976 by the Toxic Substances Control Act (TSCA). One of the main uses of PCBs was in electrical transformers. PCBs were sold in the United States under the trade name Aroclor.

Kirk explained that the goal of the TMDL is to reduce the amount or "load" of the PCBs from the Trinity watershed so that the river can support its designated uses. The TMDL will allocate the allowable load to the general areas such as permitted continuous sources, permitted non-continuous, and unregulated nonpoint sources. The allowable load may then be further refined during the next phase of the TMDL called the Implementation Plan.

Kirk explained that the modeling approach involves development of a multiple box analytical model based on a mass balance. The data inputs for the model will include flow, in-stream PCB concentrations in dissolved and particle-associated phases, in-stream suspended solids concentrations, sediment PCB concentrations, estimates of PCB loads coming in from regulated point and unregulated nonpoint sources, and PCB concentrations in fish tissues reported from the TDSHS.

Monitoring Data

Kirk provided a log scale graph depicting the partitioning of PCBs between the dissolved and suspended sediment phases in water. The graph included ambient, stormwater and wastewater treatment plant (WWTP) effluent samples. He noted the relationship between particulate and dissolved phase concentrations is not perfect but strong, as predicted by theory and seen in most other systems that have been studied.

Kirk reported that the total PCB levels (calculated as the sum of concentrations exceeding the detection limits) measured between March and August 2008 exceeded water quality criteria in 13 of 18 samples from the Trinity River.

Kirk explained his observation that the low head dams appear to impact the instream total PCB levels by trapping a lot of the fine sediments. Monitoring sites just downstream of the dammed areas had lower levels of PCBs in sediments.

Generally speaking, PCB measurements taken from tributaries draining urban areas were much higher than creeks in rural or suburban areas such as Parsons Slough or Big Fossil Creek. It was noted that the first round of samples were collected (see PCB Levels in Water table) in March 2008 when flows were moderate to high and yielded higher total PCB concentrations than the second round of samples collected in summer 2008 when flows were low. Kirk reported that the average river concentration was 1.85 ng/L PCBs.

Question: Are the stormwater samples averages or single samples?
Answer (Kirk): Those are single samples. Each sample is about 200 liters composited continuously over approximately 3-4 hours.

Question: Is this one or two storms?
Answer (Kirk): These are from multiple storms. In general, they are completely different storms. However, in one case we were able to sample two sites on the same day (same storm).

Question: I noticed that you looked at the PCB concentrations (on sediment) normalized for organic carbon. Did you look at normalizing the stormwater samples for flow or rainfall?
Answer (Kirk): No, we did not have a good measure of flow. I would like to look at that relative to the predicted volume of runoff based on rainfall. I did notice that, for the sites where we sampled two storms, when we had more intense rain we also measured higher PCB concentrations in runoff.

The stormwater sumps in central Dallas appeared to be holding the water long enough to allow some of the suspended sediments to settle out – but still had very high levels of PCBs. It does appear in reviewing the graphs of storm water sampling results there are still sources of PCBs in the central area of Dallas. PCB levels decline from central Dallas into the suburban areas. PCB levels in stormwater from older, more densely developed urban areas are much higher that those in-stream, but low in stormwater from rural and suburban areas.

The total PCB levels in wastewater effluent were generally lower than ambient levels in the Trinity River. PCB levels in tributary bed sediments were generally higher in older urban areas of Fort Worth and Dallas.

Modeling and TMDL Development

The in-stream modeling that Parson's is using is a multiple-box mass balance analytical model. Kirk said that the in-stream segmentation and hydraulics are based on the TCEQ Qual-TX models. A generalized watershed loading function (GWLF) model is being used to estimate the watershed runoff, suspended sediments, and PCB loads from the tributaries.

Kirk reported that Parson's contracting role is about over and they expect to have the modeling complete late this month and a final modeling report ready for the TCEQ and stakeholders this summer.

Question: Do we have any sediment concentrations in the sumps in Dallas?
Answer (Kirk): Yes, it is in the presentation.

Question: I was wondering about the sumps as well. Were the water sampling results from water stored in the sumps or flowing from the river at the time?

Answer (Kirk): We only sampled the sumps when the pumps were running (pumping water from the sumps to the river). We were collecting right in front of the bar screen where the water is pumped to the river. It is not just standing water.

Question: I was looking at the mass balance model and there were atmospheric losses? Does it evaporate into the air?
Answer (Kirk): Yes, PCBs will volatize from water into the air, and they can also move from the air back into the water. These processes are tough to measure. Lacking PCB concentration measurements in air, most probably we will pool all the atmospheric exchange mechanisms and use that as a calibration parameter for the model.

Question: Is your mass balance model going to take into account the measured sediment concentrations and predict the water quality concentrations?
Answer (Kirk): Yes, we did more sediment sampling because it is less expensive to collect sediment than water and also because while a water sample is just a snap shot of PCB concentrations in time, – sediments are more long-term indicators of PCB levels. Fish take up PCBs in a couple of different ways, either directly from the dissolved water phase via their gills, or through their food. In the past, people could not reliably measure PCBs in the dissolved phase at these low concentrations.

Question: We have not used PCBs actively for 30-40 years, what can we do? How can we stop it? How can we clean it up? What are we going to do with the TMDL?
Answer (Kirk): That is always a good question when dealing with a legacy contaminant such as PCBs. There are probably still transformers containing PCBs in the environment that have not been switched out. Maybe not a lot but until recently they were in use. Also, if the PCBs are bound in soils, each time we have a rainfall it carries a portion of those into the river. We can possibly use sediment controls to address that issue.

Question: The data suggests that there are on-going current sources; can you tell us what it is that makes you think that?
Answer (Kirk): I do not mean current sources of people using PCBs but secondary or legacy sources. Secondary sources include: PCBs that are bound in soils and then washed into the system; or PCBs already buried in the sediments that are re-suspended as sediment deposits are eroded during a large flow event. Legacy sources include old but

in-service PCB-containing electrical equipment. We also measured PCBs in wastewater treatment plant effluents and we are not sure where those are coming from.

Question: Are there any RCRA or clean up sites up-stream from this watershed?
Answer (Kirk): One such site is Air Force Plant 4, located on Lake Worth. However, when we sampled downstream of the area we did not find any elevated PCB levels. Another known contaminated site is the old Riverside Wastewater Treatment Plant in Fort Worth and the levels in the river below that site were low as well. Another PCB-contaminated site is on monitored was downstream of Mountain Creek Reservoir. Levels of PCBs in samples collected in Mountain Creek downstream of the reservoir were low. The easy suspects did not turn out to be significant.

Question: Kirk, the analysis is based upon concentration. Do you have similar plots for loadings?
Answer (Kirk): We are still working on the hydraulics and expect to have those shortly.

Kirk also reported that we have sites that were sampled on two dates but were not able to afford repeated sampling from the same sites to quantify the temporal variability in PCB concentrations.

Comment: I believe we need to look at the transport of the PCBs with the continued flushing of the system.

Comment: Unless we take the sediments and put it into a controlled landfill we should really think about managing the whole system and not transport it.

Question: Does wetlands have any measurable impact on the sediments for the dissolved PCBs?
Answer (Kirk): Wetlands could be fairly effective at removing PCBs.

Question: Can you give us the schedule of the TMDL report?
Answer (Kirk): Parson's will prepare the basis of the technical TMDL report and give it to the TCEQ.

Timeline
Dania Grundmann then reported her expectations for the TMDL project timeline:

- July/August 2009 – Draft technical report completed
- Late summer 2009 – Present load allocations at public meeting
- Winter 2009 – Develop TMDL report
- Early 2010 – Initiate TMDL adoption process, conduct public meetings and comment period.

Dania also said that an error had been corrected to Data Set #2 that was posted on the project web page in January.

Kirk also said another thing that was running parallel with the modeling is "fingerprinting" of the 209 congeners as a helpful tool in allocation.

Please visit the project web page: http://www.tceq.state.tx.us/implementation/water/tmdl/77-trinity_pcbs.htmlfor all data results associated with this project and other project information. The web page also includes the project overview, meeting information, previous meeting summaries, and project documents.

Dania Grundmann said that if anyone had further questions to contact her at dgrundma@tceq.state.tx.us or (512) 239-3449. The meeting was adjourned.