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TEXAS STATE SOIL & WATER CONSERVATION BOARD

Protecting and Enhancing Natural Resources for Tomorrow

June 29, 2009

Re: USEPA Review of Plum Creek Watershed Protection Plan

VIA EMAIL watson.jane@epa.gov

Jane Watson
U.S. Environmental Protection Agency, Region 6
1445 Ross Ave, Ste 1200, 6WQ-E
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Dear Dr. Watson:

The Texas State Soil and Water Conservation Board (TSSWCB) is pleased to renew our request for federal consistency review of the *Plum Creek Watershed Protection Plan* (Plum Creek WPP) by the U.S. Environmental Protection Agency Region 6 (USEPA). The WPP was developed with funding provided through a Clean Water Act (CWA) §319(h) Nonpoint Source Grant from the TSSWCB and the USEPA to the Texas AgriLife Extension Service (TSSWCB project 04-17).

The Plum Creek WPP was delivered in-print to USEPA on February 19, 2008 for federal consistency review. A digital document version of the Plum Creek WPP is downloadable as a 6.2 MB PDF at <http://plumcreek.tamu.edu/WPP.aspx>. Additional copies of the printed document version are being sent under separate cover.

The TSSWCB believes that the Plum Creek WPP is consistent with and satisfies the nine elements fundamental to a potentially successful watershed-based plan, as described in *Guidelines* promulgated by USEPA in 2003. The Plum Creek WPP is a coordinated framework of prioritized and integrated strategies driven by environmental objectives that, when implemented, will holistically protect and restore water quality – key concepts of the Watershed Approach. Our consistency review of the Plum Creek WPP was based on our understanding and interpretation of 1) those *Guidelines*, 2) the *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* (USEPA 2008), 3) *The Best Watershed-Based Plans in the Nation* (USEPA 2006), and 4) the *EPA Region 6 Process for Review of Watershed-Based Plans in lieu of TMDLs* (USEPA 2007). Subsequent to our review, we received the draft *EPA Region 6 Guide for Review of Watershed-Based Plans*; nonetheless, a further review of the Plum Creek WPP, judged against this draft *Guide*, continues to support our assertion that the Plum Creek WPP is consistent with and satisfies the nine elements fundamental to a watershed-based plan.

As a reminder, on July 11, 2006, USEPA, TSSWCB and the Texas Commission on Environmental Quality (TCEQ) met in Waco to select a priority watershed to focus our collective efforts on in order to achieve a high-caliber water quality restoration success. Plum Creek was selected as this Tri-Agency Priority Watershed.

Stakeholder Engagement – Plum Creek was identified on the 2004 Texas Water Quality Inventory and 303(d) List as not supporting contact recreation use due to excessive levels of indicator bacteria; additionally, portions of the stream were identified as having concerns for nutrient levels above screening values. In late 2005, the TSSWCB-led Southeast and South Central Texas Regional Watershed Coordination Steering Committee selected Plum Creek as an ideal candidate for the development of a WPP. TSSWCB and AgriLife Extension established the Plum Creek Watershed Partnership, composed of local stakeholders, in April 2006 to direct the watershed planning process. As the facilitator for this process, we (TSSWCB and AgriLife Extension) conducted the science behind the WPP (i.e., water quality monitoring and modeling) and then provided guidance to stakeholders as they made decisions on how best to manage their water resources. An extensive and intensive stakeholder process ultimately allowed us to garner widespread buy-in such that the implementation of the Plum Creek WPP will achieve our mutual water quality goals. The Partnership's Steering Committee approved the Plum Creek WPP in February 2008.

Note that the Plum Creek WPP went through multiple draft iterations which were reviewed by the Partnership, as well as, USEPA Region 6 and Headquarters' staff. We sincerely appreciate USEPA efforts to review and provide comment on draft versions of the Plum Creek WPP. We believe that the bulk of USEPA comments were addressed and appropriately dealt with through the public comment and review process. Comments received from the general public, the Partnership, and USEPA were incorporated into the final Plum Creek WPP published in February 2008. If after reviewing the final WPP, you do not feel USEPA comments on the draft were adequately addressed, we would be pleased to discuss those comments point-by-point.

Element A – Causes and Sources of Water Quality Issues – Load Duration Curves (LDCs) were used to understand general pollutant loading and to estimate load reductions needed to achieve water quality standards in Plum Creek. LDCs were developed for three index sites on the mainstem of Plum Creek for *E. coli*, total phosphorus, and nitrate. Through this LDC analysis, it was found that Plum Creek needed load reductions that ranged from 15-65% for *E. coli*, 0-49% for phosphorus, and 1-80% for nitrates depending on location in the watershed. The methodology used in the LDC analysis is described in Appendix E of the WPP and specific results of the LDC analysis, by pollutant and index site, are presented in §5 of the WPP.

The Spatially Explicit Load Enrichment Calculation Tool (SELECT) was developed and piloted in the Plum Creek watershed to identify pollutant source contributions. SELECT is essentially a less sophisticated watershed loading model that does not incorporate fate and transport mechanisms for pollutants of interest; as opposed to a highly sophisticated model such as the Soil and Water Assessment Tool (SWAT). Primary pollutant sources contributing to bacteria and nutrient loads were quantified and include generalized urban stormwater runoff, pets, failing septic systems, permitted wastewater discharges, livestock (primarily grazing cattle, but also horses, sheep and goats), row crops (nutrients only), wildlife (deer), and invasive species (feral hogs). The methodology used in the SELECT analysis is described in Appendix F of the WPP and maps of subwatersheds showing priority areas to target implementation based on sources are provided in §6 of the WPP.

The methodologies used for both the LDC and SELECT analyses, along with the variety of input variables and data, were significantly vetted by stakeholders as sound science on which they based their decisions for how best to manage their water resources. This approach has been adopted by several other stakeholder groups across the state who are developing their own WPPs.

Additionally, the TSSWCB believes that this approach (LDCs plus SELECT analysis) is consistent with the tiered approach recommended by the Task Force on Bacteria Total Maximum Daily Loads (TMDLs) jointly established by TSSWCB and TCEQ. In June 2007, TSSWCB and TCEQ adopted the principles and general

process recommended by the Task Force. While the Task Force was charged specifically with examining the approaches used to develop and implement bacteria TMDLs, the recommendations are appropriate to any watershed planning process that addresses bacteria impaired waters in the State.

Element B – Load Reductions Expected – Through an analysis of various best management practice effectiveness studies from across the nation, combined with the LDC and SELECT analyses of pollutant load reductions needed and pollutant source contributions, the stakeholders correlated the load reductions they expect to achieve to the management measures they agreed to implement. Specifically, the Plum Creek WPP provides estimates for changes in bacteria and nutrients as a result of management measures to be implemented. It is important to note that expected load reductions described in Table 10.3 of the WPP are predicated on the full implementation of all management measures prescribed in the WPP and classified by source category. The TSSWCB believes that any seeming shortcomings to the methodology used to estimate load reductions expected are adequately addressed through Elements H and I and the concept of adaptive management inherent in the Watershed Approach.

Element C – Management Measures to be Implemented – The Plum Creek WPP identifies and rationalizes specific and feasible management measures to reduce bacteria and nutrient loadings. To achieve pollutant load reductions, the Partnership identified the following key strategies:

- Place stormwater control measures through city programs and public outreach,
- Enhance street sweeping programs and public grounds maintenance,
- Cities will implement and/or continue on-going efforts to replace old sewer pipes and upgrade overflow management systems, where necessary and appropriate,
- Implement pet waste management strategies, especially at public parks,
- Direct resources towards increased inspections and repair capabilities on septic systems,
- Explore wastewater treatment facility upgrades and implement voluntary monitoring of bacteria in effluent prior to mandated permit changes from TCEQ and USEPA,
- Enhance technical and financial assistance to farmers and ranchers for development of site specific management plans that reduce bacteria and nutrient losses from livestock and cropland,
- Cooperate with local, regional and state entities on feral hog control,
- And support education and training programs to encourage public awareness and involvement in implementation of the Plum Creek WPP.

Tables 10.1 and 10.2 of the WPP provide a quick reference list of specific management measures to be implemented along with the responsible party, estimated costs and interim milestones.

Element D – Technical and Financial Assistance Needed – The Plum Creek WPP does a good job of estimating implementation costs of those strategies that are known to be effective and will have a positive impact on water quality. Tables 10.1 and 10.2 of the WPP provide realistic and precise estimates, based on stakeholder input, for each management measure. Technical and financial assistance needed for implementing water quality management plans (WQMPs) on agricultural land are fleshed out. The monitoring and education/outreach components also have realistic costs. Commitment to implement any WPP must be continually cultivated by a watershed coordinator – fundamental technical assistance. With the Plum Creek WPP, AgriLife Extension has established themselves with landowners and entities, through the CWA §319(h) grant to develop the WPP, as this facilitating entity.

We must recognize, though, that through adaptive management we are able to begin implementing those things we know will positively impact water quality while at the same time collecting more data and conducting feasibility studies to confirm the applicability of recommended strategies. Over time, this may result in modifications to recommended strategies and the associated costs.

Additionally, we must note again that expected load reductions, anticipated to achieve water quality restoration, are predicated on the full implementation of all management measures prescribed in the WPP. This carries a hefty price tag for the Plum Creek WPP. To that end, the WPP does a good job at identifying a diverse portfolio of funding sources to be relied upon for implementation including municipal and county funds; the State Revolving Fund and other monies managed by the Texas Water Development Board; CWA §319(h) nonpoint source grants from both TSSWCB and TCEQ; other funding streams from TCEQ, such as CWA §106 and the Clean Rivers Program; and the U.S. Department of Agriculture (USDA) Environmental Quality Incentives Program (EQIP) and other federal Farm Bill monies.

We are pleased to highlight significant fiscal resources that are flooding into the Plum Creek watershed to support implementation of the WPP. Through TSSWCB and TCEQ, USEPA has funded several multi-faceted FY2008 CWA §319(h) projects and both agencies have included proposed projects in our FY2009 CWA §319(h) grants. Additional USEPA funds, specifically CWA §106 monies, have flowed to the watershed through TCEQ. The Texas Parks and Wildlife Department recently approved a \$500,000 grant to the City of Kyle to be used for the purchase of parkland and development of the Plum Creek Preserve and Nature Trail. The Texas Department of Transportation is completing the construction of a CWA §404 wetlands mitigation site on Plum Creek. Finally, USDA-Natural Resources Conservation Service recently announced that over \$3.7 million from the American Recovery and Reinvestment Act of 2009 would be used to rehabilitate several floodwater-retarding structures in the Plum Creek watershed revitalizing the flood protection and water quality benefits of the structures.

Element E – Education and Outreach Component – The Plum Creek WPP calls for education and outreach strategies that are targeted to specific audiences critical to implementation success and are clearly related to on-the-ground implementation measures. While the Plum Creek WPP may not adequately describe methods to evaluate behavior change, effects of the education and outreach strategies will ultimately be captured in the evaluation of programmatic and environmental (water quality) criteria (Element H). Table 10.2 of the WPP provides a quick reference list of specific education and outreach activities to be implemented along with the responsible party, estimated costs and interim milestones. We must point out that Plum Creek was used as the pilot watershed to develop and test the Texas Watershed Steward Program (TSSWCB project 05-05); the Texas Watershed Steward Program was developed as a critical statewide program fundamental to the State's efforts to implement the *Texas Nonpoint Source Management Program*.

Elements F and G – Implementation Schedule and Interim Milestones – The Plum Creek WPP implementation schedule covers a reasonable timeframe (10 years) and is sequenced with linked short-, mid- and long-term milestones. The implementation schedule and interim milestones are quickly referenced in Tables 10.1 and 10.2 of the WPP. Again, founded on adaptive management, the Plum Creek WPP is a dynamic plan that will evolve as strategies are implemented and new data are gathered that result in a deeper understanding of watershed dynamics. This living document will be amended to describe modifications/updates to goals and milestones, document successes in achieving goals and milestones and successes in achieving water quality improvement and load reductions. Vigilant efforts by the watershed coordinator will be needed to work with landowners and entities to track milestone achievement and keep the implementation of the Plum Creek WPP on schedule.

Element H – Criteria to Evaluate Water Quality Improvement – The Plum Creek WPP includes a blend of quantitative and qualitative criteria, sprinkled throughout the document, which measure a variety of environmental, social, and programmatic indices and correlate to the various management measures in the implementation schedule. The water quality criteria are linked to the monitoring component. Other criteria, such as the number of WQMPs developed/implemented, will be correlated to load reductions and water quality improvement through the USEPA Grants Reporting and Tracking System (GRTS), if CWA §319(h)

monies are used for implementation (as they are in TSSWCB project 08-07); otherwise water quality improvement from the suite of strategies will be observed through the monitoring component of the WPP and quantified through the general water quality criteria in this component.

Element I – Monitoring Component – The Plum Creek WPP concludes that the coordinated, routine water quality monitoring currently conducted at the three index sites is fundamentally adequate to assess ultimate success of the WPP because this is the same monitoring that is used to develop the State’s CWA §305(b) *Water Quality Inventory* and CWA §303(d) *List of Impaired Waters*. On the other hand, the Plum Creek WPP does call for additional targeted water quality monitoring allowing us to gain a better comprehension of those watershed dynamics not currently well understood, such as the fundamental nature of bacteria fate and transport. This is, again, the concept of adaptive management. To that end, TSSWCB project 03-19 implements an intensive, short-duration water quality monitoring regime, in cooperation with the Guadalupe-Blanco River Authority (GBRA), that allows us to more closely pinpoint the timing and sources of high pollutant levels, as well as, track the performance of ongoing restoration efforts. This special targeted monitoring will help us to validate the conclusions from the LDC and SELECT analyses. As funding for that project runs dry, we must examine additional monitoring needs to correlate implementation to water quality restoration. We should note that GBRA, with their own monies, is working with TCEQ to install a continuous water quality monitoring station on Plum Creek and integrate that site into TCEQ’s continuous water quality monitoring network.

Executive Order 13112 regarding Invasive Species – While TSSWCB, and USEPA, fostered the development of the Plum Creek WPP to restore and protect water quality under the auspices of the federal CWA, the implementation of the WPP will help achieve other important federal and state goals, namely invasive species control (feral hogs). Both of these priorities are consistent with the priorities identified by stakeholders during the development of the Plum Creek WPP. The TSSWCB believes that the implementation of the Plum Creek WPP, especially when CWA §319(h) monies are used, will assist USEPA in meeting its mandate under this Executive Order. Additionally, the TSSWCB believes that the implementation of the Plum Creek WPP positively contributes to the USEPA Office of Wetlands, Oceans, and Watersheds’ (OWOW) *Strategic Action Plan for Invasive Species*, specifically by addressing certain strategic goals:

- control invasive species, both aquatic and terrestrial, affecting aquatic ecosystems, and,
- create education and outreach opportunities,

and certain priority actions:

- Monitoring – encourage the inclusion of invasive species in existing monitoring programs,
- Education and Outreach – control the spread of invasive species and promote public understanding using education and outreach tools,
- Review OWOW Project Funding – review all uses of OWOW funding to explore using OWOW assistance agreements to target invasive species problems impacting aquatic systems, and,
- Economic Impact – estimate the economic impacts of invasive species affecting the aquatic environment.

Integrated Report Category 4b – The TSSWCB believes that in some watersheds, the development and implementation of a WPP may be a more viable approach to achieving restoration of water quality than through the establishment of a TMDL. To that end, the *EPA Region 6 Process for Review of Watershed-Based Plans in lieu of TMDLs* (USEPA 2007) outlines a process by which the State may submit a WPP in lieu of a TMDL. Based in part on conversations with USEPA Region 6 and Headquarters staff, TSSWCB believes that the Plum Creek WPP may be a good candidate for which to use this “4b option” to address the bacteria impairment. However, the significance and complexity of whether any WPP may serve in lieu of a TMDL necessitates close coordination between watershed stakeholders, the State and USEPA; we intend to

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reinvigorate discussions with TCEQ and USEPA to explore the national guidance and regulatory mechanisms governing the process of utilizing the Plum Creek WPP in lieu of a TMDL.

In conclusion, the TSSWCB affirms that the Plum Creek WPP is consistent with and satisfies USEPA's nine elements fundamental to a potentially successful watershed-based plan. And, the TSSWCB is pleased to resubmit the Plum Creek WPP to the USEPA for federal consistency review. The TSSWCB is committed to supporting the long-term successful implementation of this WPP to restore and protect water quality across the Plum Creek watershed. If I can provide further clarification on our consistency review of this WPP, please do not hesitate to contact me at (254) 773-2250 x 232 or awendt@tsswcb.state.tx.us.

Respectfully,



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Statewide Watershed Coordinator

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