

# Final Report



## Development of Interpretive Materials for Nonpoint Source Pollution Displays

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## Acknowledgements

Tetra Tech would like to acknowledge the staff of the Kentucky Division of Water Nonpoint Source Section, especially Rosetta Fackler, the production department at Post Printing, and the organizations that helped distribute the brochures to citizens in their local area. Their assistance has been extremely valuable and largely responsible for the success of this project.

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## **Executive Summary**

This project was limited in scope to producing two large, fold-out informational brochures designed for multiple purposes:

- Provide interpretation for watershed models depicting various nonpoint pollution issues
- Serve as a stand-alone awareness and education brochure regarding NPS issues
- Raise the level of understanding on NPS pollution and best management practices

Tetra Tech worked with the KY Division of Water and other partners to create, design, publish, and distribute 60,000 copies of each of the two the brochures. One of the brochures focuses on nonpoint source pollution problems and management practices in urban areas, the other deals with NPS problems and BMPs for rural areas.

Half of the brochures (30,000 of each) were distributed to public agencies, watershed organizations, university staff, and other partners after publication. The other half of the brochures were sent to the KY Division of Water for distribution at events where the watershed models are displayed.

## **Introduction and Background**

The purpose of the project was to produce two full-color, fold-out brochures on nonpoint source pollution to provide interpretation for KY Division of Water watershed models and serve as free-standing information/awareness handouts for multiple audiences.

The Kentucky Division of Water commissioned the creation of the watershed models dealing with nonpoint source pollution during 2001. The project entitled "2001: A Water Odyssey" resulted in the development of a 250 ft model of a watershed, a giant floor map of Kentucky's watersheds, wall panels, photos, and other educational materials and three-dimensional representations of landscapes, common polluted runoff issues, and suggestions for dealing with them.

These materials were displayed at the 2001 Kentucky State Fair, where they were viewed by some 300,000 people over a two-week period. The models and other materials at the State Fair were part of an interactive, multi-media exhibit, but are now available as stand-alone educational support materials for display at state parks, schools, and other venues.

The Kentucky Division of Water expressed interest in developing two interpretive publications that would combine text, photos, and graphics into a take-home brochure on the issues addressed by the models (i.e., the large watershed model and four tabletop models) and a large wall poster associated with the watershed model. Tetra Tech proposed to develop these two brochures in consultation with the creators, the Kentucky Division of Water, and other partners identified by the Division of Water. The final product would be two six-panel, full color, fold-out brochures with text, photos, and graphics approved by the Division of Water. The photographs would consist of close-up scenes from the models, to make the connection that they were intended to explain the scenes, which depict various NPS pollution-generating activities.



Tetra Tech produced 60,000 prints of each brochure. They were distributed by project partners to watershed groups, agricultural organizations, local governments, schools, and individuals attending events featuring the models.

## **Materials and Methods**

Because the two brochures produced under this project were intended to interpret the watershed models produced by the KY Division of Water under a separate project, Tetra Tech was able to use photographs of scenes from the models in the brochures to display nonpoint pollution behaviors. This aspect provided a good deal of focus and guidance on how the brochures should be structured, i.e., the selection of nonpoint source pollution generating behaviors was based on the models, and the best management practices discussed were to be tied directly to those behaviors.

Tetra Tech staff traveled to Frankfort KY to photograph the models, which were stored in a warehouse not far from the KY Division of Water office building. The models, which are fairly large, had to be moved from the warehouse to the outside yard to be photographed, due to lighting and other conditions. Upon initial inspection, it appeared that some model components had been slightly damaged prior to the photography session – e.g., some trees were broken off or unglued on the forestry model.

Using the list of behaviors depicted by the models, Tetra Tech staff developed lists of best management practice recommendations that addressed each of the behaviors. This information would be presented along with a photograph from the models depicting the behavior. In addition, the project team decided to present other pertinent NPS and water quality information in the brochures, along with the NPS-inducing behaviors and associated BMPs. This information included:

- General introduction to nonpoint source pollution and its relationship to land use/management
- A “Did You Know?” section on key water use, water quality, and water quality pollution facts
- Summary 305(b) report information, both within the text and on a state map
- A state map showing water quality status for major water bodies and regional land use
- A “What Can You Do?” section to promote individual and collective action
- Two lists of web-based resource links, one by topic, and another with key organizational contacts

This information, along with the photographs from the models and other photographs acquired (or taken) by Tetra Tech, was sent to the production staff for initial composition of the draft brochures. The project team – mostly staff from Tetra Tech and the KY Division of Water – reviewed the drafts, provided editorial and other suggestions, and worked together to develop the final versions of the brochures.

## **Results and Discussion**

The intended audience for the brochures included people who view the watershed display models and people who own or manage property, or otherwise have an impact on land use or management practices (stream corridor vegetation management, onsite wastewater treatment system maintenance, lawn care, construction site oversight, etc.). Information on audience knowledge was derived from the report on the “2001: A Water Odyssey” project conducted by the Kentucky State Fair Board (Darst, 2001) and the Kentucky Environmental Education Council, which noted that (2005):



*Though water pollution is identified as a leading source of concern by those surveyed, Kentuckians are not able to correctly identify runoff from fields, pavements and lawns as the leading source of water pollution in the Commonwealth. Only 17% of respondents identify runoff as the leading source of water pollution (compared to 21% in 1999). In 2004, a whopping 56% incorrectly identify factory waste as the leading source of water pollution (KEEC, 2005).*

The brochures produced under this project were welcomed by several of the groups involved in its distribution. For example, here are some comments received after initial distribution:

- “I received the brochures and am greatly appreciative. I plan to use them at my county presentations. I might need to order more once I get out and begin the effort. I really appreciate your cooperation in getting them to me.” – Angela Kessans, Salt River Basin Coordinator
- “I received the brochures and will use them for our classes on watershed management. Thanks.” – Russ Barnett, University of Louisville
- “The content inside the brochure does a good job with the images of the models and the text associated with the NPS pollutant category. The terminology is specifically non-technical, but clear enough to be used to promote a “fix” for the issues addressed by the brochure.” – Ken Cooke, Kentucky Water Watch

The brochures, which are fairly large – 14 inches x 17 inches – are very attractive, and feature full color photographs, a detailed map of the state depicting water quality and land use/cover information, and other elements as described above. The inside section (after full unfolding) can be used as a wall poster on NPS problems and related BMP approaches.

## **Conclusions**

This project was limited to the production of the brochures on nonpoint source pollution for rural and urban areas. The brochures have been distributed throughout the state, and a stock of 60,000 is available for use with the watershed display models in the future.

A key conclusion from this project is the need to have interpretive materials available for distribution with any sort of display or model being used to convey information on water quality, nonpoint source pollution, or other environmental topics. Members of the public who are unfamiliar with environmental issues may not be able to intuitively decipher what models or displays are trying to depict. Using photographs of model/display elements or scenes is an appropriate way to “bridge the gap” between the model and existing knowledge or experiences of the viewer.

## **Literature Cited**

Kentucky Environmental Education Council. 2005. The 2004 Survey of Kentuckians’ Environmental Knowledge, Attitudes and Behaviors. Survey conducted by the Kentucky Environmental Education Council and the University of Kentucky Survey Research Center. Released, January 2005

Darst, Stephanie. 2001. Project Final Report for Grant Number C9994659-95. 2001: a water odyssey. Workplan Number 95-21; Memorandum of Agreement Number M-01078868. Project period April 15, 2001 to December 31, 2001. Filed by Stephanie Darst, Kentucky State Fair Board. On file with the Kentucky Division of Water, 14 Reilly Road, Frankfort KY.



## Appendix A: Financial and Administrative Closeout

### Workplan Outputs

The primary outputs for this project workplan were the two brochures on nonpoint source pollution. One brochure focused on urban issues, the other focused on rural issues. Below are the project milestones and the projected/actual dates for delivery. There were no budget revisions during this project. No equipment was purchased for this project. There were no special grant considerations applied to this project by US EPA or the KY DOW.

Milestone	Expected	Expected	Actual	Actual
	Begin Date	End Date	Begin Date	End Date
1. Acquire all graphics to be used in the brochures.	Mar. 04	May 04	Jul 04	Aug 04
2. Develop text for both brochures.	May 04	June 04	Sept 04	Oct 04
3. Produce draft version of each brochure for review by the focus group and the KY DOW.	July 04	Aug. 04	Dec 04	Dec 04
4. Incorporate mark-ups/edits into each brochure.	Aug. 04	Sep. 04	Jan 04	May 04
5. Submit final drafts to the focus group and the KY DOW for review and final approvals.	Sep. 04	Oct. 04	March 04	June 04
6. Supply on hand 60,000 copies of each brochure.	Sep. 04	Oct. 04	June 04	June 04
7. Contact project partners to arrange for brochure distribution.	Oct. 04	Dec. 04	April 04	May 04
8. Distribute brochures through project partners to watershed groups, agricultural organizations, local government, schools, and whenever the models are displayed regarding distribution.	Dec. 04	Feb. 05	June 04	June 04
9. Upon request of the Division of Water, submit Annual Report and/or participate in the Cabinet sponsored biennial NPS Conference.	Mar. 04	Feb. 05	June 04	June 04
10. Submit three copies of the Final Report and submit three copies of all products produced by this project.	Jan. 05	Apr. 05	June 04	June 04

Best Available Copy

### Original Project Budget

Budget Categories	Section 319(h)	Non-Federal Match	Total Budget	Final Actual Expenditures
Personnel	19,000	28,000	47,000	53,646
Supplies				
Equipment				
Travel	800		800	38
Contractual				100
Operating Costs & Fee	8,200		8,200	3,378
Other (Printing costs)	14,000		14,000	12,838
<b>TOTAL</b>	<b>42,000</b>	<b>28,000</b>	<b>70,000</b>	<b>70,000</b>
	60%	40%	100%	

### Cumulative Actual Expenses:

Budget Categories	319(h) Dollars	Match	Total
Personnel	18,483	35,163	53,646
Supplies			
Equipment			
Travel	38		38
Contractual	100		100
Operating Costs	3,290	88	3,378
Other	12,838		12,838
<b>TOTAL:</b>	<b>34,749</b>	<b>35,251</b>	<b>70,000</b>

*All project resources were spent; there were no excess project funds to reallocate.*