Developing Watershed Implementation Plans: Creating a Formula for Success in the Salt & Licking River Basins

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Submitted by the Kentucky Waterways Alliance

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Acknowledgements

This project would have been impossible without the dedicated members and supporters of the watershed groups who participated in these projects. Their time, offered so generously, was imperative to the project.

It is not feasible to mention everyone who contributed to this ambitious project, so we ask forgiveness if anyone is overlooked.

The leaders and conveners of these groups deserve special recognition for their perseverance. These include Emily Anderson, Shanda Cecil, April Haight, and Beth Stuber.

Due to the length of the project and unrelated circumstances, several people coordinated this project at Kentucky Waterways Alliance. Staff member Hilary Lambert worked long and hard to draft the first Guidebook with assistance from Pamla Wood, and board member Bruce Scott did a complete redraft. Katie Holmes worked with early watershed groups. Pamla and Sarah Lynn Cunningham substituted for her while a replacement was found. Tessa Edelen carried the projects to fruition with some support from Pamla. Judy Petersen and a good number of Division of Water employees, especially Lajuanda Haight-Maybriar and Brooke Shireman, provided ongoing and astute oversight and assistance. Barry Kew, Corey Wilson and the University of Kentucky's Landscape Architecture department created the storyboards.

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1.0 Executive Summary

The purpose of this project was to write a guidebook for creating a watershed-based plan, a guidebook specific to Kentucky. Plans created according to the guidebook would be able to incorporate the EPA's nine elements ('a through i'), and also be tailored to address state issues. To this end, four community watershed groups in the Salt and Licking Basins were selected to use a draft version of the *Watershed Planning Guidebook for Kentucky Communities,* testing the guidebook while writing their own watershed-based plans. In the Licking River basin, the watersheds selected were Stockton Creek (aka Town Branch) of Fleming Creek, Dry Creek of Triplett Creek, and Hancock Creek of the South Fork of the Licking. In the Salt River basin, Darby Creek of Harrods Creek was selected. Watershed candidates were solicited in these basins because of the timing of the statewide Watershed Framework Management.

Community groups from each of the watershed areas met regularly for over two years to draft watershed plans. The groups were made up of local residents, elected officials, local, state, and federal agencies employees, and other interested organizations. Meetings were used to draft parts of the plan, discuss problems, find information, and for outreach and education. Technical consultants were hired by most of the groups to collect and/or analyze data. The experiences of these groups, gathered by surveys completed at the end of each chapter, were used to revise the draft Guidebook in content, style, and layout.

As part of this project, community roundtable meetings were held both as the project started and as it ended, to obtain feedback from local communities on watershed issues. Under the direction of Barry Kew, Assistant Professor of Landscape Architecture at UK, a series of storyboards were created to serve as a visually oriented education and outreach tool.

The first edition of the *Watershed Planning Guidebook for Kentucky Communities* was created based on experience gained while developing four watershed-based plans. Three of these plans were accepted by the Kentucky Division of Water. These three groups also obtained funding for watershed plan implementation.

2. Introduction and Background

This project was first proposed in 2003, when watershed implementation planning in Kentucky was in its very early stages. At that time, it became clear that the task of watershed planning is complicated and requires guidance. Specifically, it is not easy to combine multi-partner, grassroots-type engagement with effective planning principles, combined with the additional rigors of scientific inquiry necessary for achieving results, efficiency of resource use, and proof of achievement.

Thus the idea became to provide a published watershed planning guidebook to the public that would be understandable yet thorough, and to work with four watershed groups in Kentucky as case studies. In this way, watershed planning would be extended to these watersheds *and* a guidebook would be improved and finalized by comprehensive observation and usage. At the time the project was conceived, EPA had not yet released a national, draft guidance for watershed planning.

Part of the mission of the Kentucky Waterways Alliance is to work with local groups to protect and restore waterways. This project offered an opportunity to refine and develop that capability.

Specifically, the purposes of this project were:

1. To encourage better watershed management by engaging local citizens and interagency representatives in developing local watershed implementation plans (WIPs) to mitigate water quality problems in eligible watersheds,
2. To provide focused planning assistance, technical support and funding in the Salt and Licking river basins to local groups that were willing to develop and seek funding to implement WIPs,
3. To develop and provide a new WIP Guidebook, and
4. To create suitable technical and educational materials to assist in the planning process.

When this project was conceived, there were only a few "watershed plans" in Kentucky. These were very limited plans with minimal attention to implementation. The federal EPA had just issued the "a through i" criteria for watershed plans. Plans had been completed in other states, but they varied considerably in their breadth.

Many people working in watershed planning wanted more direction and more understanding, including Kentucky Division of Water (KDOW) staff, nonprofit organizations, watershed groups, consultants, and concerned citizens. As a result, it was determined a guidebook with examples and models was needed.

Years have passed, and the EPA has since released an extensive guidebook. Yet there is still the need for a Kentucky-specific guidebook and planning model. Some of the questions remain unanswered, even after years of work. For example, must a watershed plan always meet the "a

through i" criteria, even if no 319(h) funds are involved? Or how much of a plan can be created by laypeople and how much expertise is necessary?

3. Materials and Methods

3.1 Description of the project area

While the guidebook developed during this project addresses the entire Commonwealth, there were four particular watersheds in Kentucky where planning and guidebook testing took place. Watershed candidates were solicited in the Licking River and Salt River basins because of the timing of the statewide Watershed Framework Management. In the Licking River basin, the watersheds selected were Stockton Creek (aka Town Branch) of Fleming Creek, Dry Creek of Triplett Creek, and Hancock Creek of the South Fork of the Licking. In the Salt River basin, Darby Creek of Harrods Creek was selected. The experience and input from the communities in these four watersheds served as the template for the guidebook revision which will ultimately serve the entire state of Kentucky.

These sites were selected as priorities due to impairment status, input from the basin coordinators, and local interest in planning. They are all relatively small watersheds (HUC-14 or a series of HUC-14s in the case of Darby Creek) located, generally, in the eastern half of the state. Each of the four communities developed local watershed teams of stakeholders and partners that spent roughly two years creating a comprehensive WIP. In each of these plans, there are a variety of maps and very specific information about the geography, landscape, land use history, and water quality of each respective area.

Here is a brief description of each of the watershed groups:

- Darby Creek: Darby Creek Watershed is located in Oldham County. The watershed team consisted of concerned local citizens, elected officials, and partner organization personnel including the County Extension and Natural Resources Conservation Service. The watershed facilitator for this group was the county engineer, Beth Stuber. Third Rock Consulting was hired to collect and analyze water quality data. Originally, the University of Louisville Stream Institute was involved in the project, but had to withdraw.

- Dry Creek: Dry Creek Watershed is located in Rowan County. The watershed team consisted mostly of Morehead State University staff. The watershed facilitator was April Haight, the MSU Environmental Education Center director. She and three MSU professors collected and analyzed all of the data for the project.

- Hancock Creek: Hancock Creek Watershed is located in Clark County. The watershed team consisted of concerned citizens. The watershed facilitator was Shanda Cecil, the director of the Strodes Creek Conservancy. Water quality data used for this project were collected prior to the start of this project. Tetra Tech was hired to analyze these data.

- Stockton Creek: Stockton Creek Watershed (also known as Town Branch) is located in Fleming County. The watershed team consisted of concerned citizens, local officials, and other local leaders. The watershed facilitator was Emily Anderson of the Fleming County Conservation District. Redwing Consulting was hired to collect and analyze water quality data. Originally, Andrea Zimmer from Region 4 USEPA provided some assistance in the methods used to analyze the data.

3.2 Methods

This grant was multi-fold in purpose, thus it was also multi-fold in methods and results. The original draft guidebook was created by Kentucky Waterways Alliance staff member, Hilary Lambert, who convened a workgroup to develop it. In addition to KWA and KDOW staff, the workgroup included representatives of many of the natural resource agencies within the Cabinet, US EPA Region 4, Tennessee Valley Authority, Tetra Tech, and the University of Kentucky Landscape Architecture Department. Considerable time and effort was expended and an initial draft was produced. However, after further consideration, the initial draft was not accepted by KDOW. KWA board member, Bruce W. Scott, then stepped in and re-wrote the draft guidebook working with KDOW staff using other states guidebooks as examples.

The draft guidebook was used to help the four watershed teams write their individual WIPs. At the same time, it was being tested by these teams and revised based largely on their experiences and the experiences of the grantees, grantor, and others working with these teams. The methods, therefore, for the overall project were to facilitate and manage watershed teams in the four communities, create WIPs, obtain feedback on the guidebook, and produce a revised guidebook. Each WIP addressed local watershed concerns as well as the nine USEPA components ('a through i').

<u>Organizational Methods</u>

To manage this process, the Kentucky Waterways Alliance provided one watershed coordinator for the watershed teams. It should be noted that the person responsible for this role changed during the grant. In each watershed, a watershed facilitator was also employed with grant funds. This was to provide critical local knowledge and to improve community buy-in.

The facilitation and administration of the watershed teams was conducted jointly by the watershed coordinator and watershed facilitator and included organizing meetings (public watershed meetings were held every four to eight weeks in most cases), drafting parts of the WIP, soliciting ideas and suggestions from the watershed team, identifying other funding opportunities, and outreach activities. KDOW provided regulatory and technical expertise and guidance in the form of basin coordinators and nonpoint source section staff. All water quality data collected for this project were collected as per a KDOW-approved Quality Assurance Project Plan (QAPP). The Hancock Creek group used water quality and habitat data previously collected by the Strodes Creek Conservancy, and so did not create a QAPP for this project.

Each WIP created by the groups follows the draft *Watershed Planning Guidebook for Kentucky Communities*. The guidebook, even in its draft form, did a good job of explaining the iterative

and complex process required for watershed planning. It was used as both a reference material and an instruction manual. This means that each of the four WIPs is presented in a series of five chapters outlining existing information about the watershed (including information not known), data collection (or existing data being used for the project), analysis of these data, Best Management Practices (BMPs), a plan for implementing BMPs, and a plan for evaluation of implementation of the WIP. Those chapters are called:

1. Get Organized
2. Look Around
3. Analyze This
4. Get Your Act Together
5. Check It Out

Refer to the draft guidebook for more information on these chapters.

The draft guidebook also contained appendices to assist users in the process of watershed planning. Note that the first edition of the guidebook, produced after these plans were submitted, has different chapter breakouts and overall content.

The WIP process used by the groups also included two cycles of Community Roundtables, in an effort to outreach to the local communities about watershed planning and watershed issues in general. Feedback from the public was gathered at the beginning of the process to learn what people understood about the watershed in question, how they used the waterways, and what specific watershed issues were important to them. Various types of outreach activities were also conducted with each group throughout the administration of the grant. Additionally, a series of storyboards were created. The storyboards serve as a way to visually communicate watershed issues, particularly nonpoint source pollution and erosion. They consist of five large poster boards with professional graphics depicting causes and sources of water pollution. They have been used in a variety of settings to illustrate the basics of watershed planning.

WIP Data Methods

The data collection for each of the watersheds was performed according to an approved QAPP for that specific watershed. The methodology for sample collection was not specialized. Each individual WIP details the exact methods used, dates samples were collected, and analysis techniques. Generally, each team tested for total phosphorus, total Kjeldahl nitrogen, total suspended solids, pH, dissolved oxygen, conductivity, turbidity, flow, temperature, fecal coliform and *E. coli*, and habitat assessment.

Three of the watershed teams sampled during the Primary Contact Recreation Season and Secondary Recreation Season in 2008. Testing was conducted six times at eight locations, in most instances; two samples were taken as storm events. The Hancock Creek team did not collect new data for this project, but performed analysis on existing data. The Dry Creek team consisted of professors and staff at Morehead State University who collected and analyzed their own data. The Darby Creek team hired a consultant to collect and analyze the data. Later they

employed a different lab to perform further testing (the microbial source testing discussed below). The Stockton Creek team also hired a consultant to collect and analyze data for them. The Stockton team experienced some problems with the way certain data were collected, resulting in some data being omitted from the final analysis. Again, additional detailed information about each of the watershed projects is available in those individual plans.
One type of unanticipated data analysis used, in the Darby Creek project, was microbial source tracking. This testing was employed in an effort to isolate the source of bacteria causing high *E. coli* levels in the creek. This is a fairly new type of testing that was performed by a lab at the University of Kentucky which has been studying various animal DNA markers. Unfortunately, the results for this particular test were not definitive. Even at the reduced price connected to this method of DNA testing, it was too expensive in the end to collect multiple samples at multiple locations on multiple dates. The results from this testing can be found in the Darby Creek plan.

After the four watershed teams finished their work, the draft guidebook was revised based on their experiences. As each watershed plan chapter was completed, the team members from all four watershed groups took a survey about that guidebook chapter. These comments were compiled after the plans were finished and used in the guidebook revision process. The experiences of KWA and KDOW personnel involved in the project also informed the revision. The KWA and KDOW personnel then began the process of revising the guidebook through a series of work meetings. KDOW personnel had already written a new approach to the 319 data requirements that was put into the guidebook. Other areas of the guidebook needing revision were discussed, and chapter revisions were assigned. Everyone served as editor in both content and layout. More information was added in topic areas that were found problematic by the watershed teams (data analysis methods, for example), chapters were reorganized to be more intuitive and easy to use, advice for working with subcontractors was added, and a *Watershed Basics* section was added as a sort of primer on watershed issues.

4.0 Results and Discussion

Water quality data and BMPs for each watershed can be found in the individual WIPs. There are no formal data for the overall project. The significant end results of this project are the four WIPs, the storyboards, and the first edition of the *Watershed Planning Guidebook for Kentucky Communities.* The watershed coordinator and watershed facilitators also sought additional funding through grants for the watershed groups during the course of the grant. The Dry Creek, Hancock Creek, and Stockton Creek WIPs were accepted by KDOW. Each of these groups also has obtained additional funding for implementation projects based on their WIP. The Darby Creek WIP was not accepted by KDOW. The reason cited was the lack of fulfillment of certain data requirements for the plan. Notes on the specific issues can be found in Appendix D of the Darby Creek Watershed plan. It is hoped that in the future the Darby Creek Watershed Team will continue their watershed planning efforts.

The draft guidebook was overhauled based on the collective experiences of each of the four watershed teams including the stakeholders and partners, watershed coordinators, watershed facilitators, and KDOW staff. Updated materials and resources (new websites or KDOW

programming) and comments and suggestions gathered from KWA board and staff, other KDOW staff, and other concerned parties were also used to guide revisions.

Each watershed team used their data to create a list of BMPs intended to serve as the basis for a subsequent implementation plan. The lists of BMPs are extensive and contain practices that pertain to agriculture, stormwater, public education and outreach, city and county ordinance review, sewer and septic maintenance and education, and others. The pollutant load reductions to be expected for each BMP in specific sub-watershed areas were not calculated for these plans. All three of the groups that will continue with implementation will calculate these reductions as part of their implementation process.

April Haight of the Dry Creek Watershed team, Shanda Cecil of the Hancock Creek team, and Emily Anderson of the Stockton Creek team, along with watershed coordinator Tessa Edelen, all sought additional funding through the application of various grants. The 5 Star grant (2009) written for the Dry Creek Group to do a constructed wetland in cooperation with the KY Transportation Cabinet. This grant was not successful. The River Network MillerCoors grant (2010) was written for the Stockton Creek group to fund continued water quality monitoring. This grant was not successful. The NiSource grant (2010) was written for the Hancock Creek group to create a walking trail to help ameliorate stormwater issues in Winchester. This grant was partially awarded. The money has since been used to plant native trees in riparian areas of the Hancock Creek Watershed.

5.0 Conclusions

5.1 Project Measures of Success:

The measures of success for this project were established with KDOW as milestones, based firmly on the original 319(h) application. These are listed below.

a) Publish and disseminate (print, CD and Internet) the Watershed Implementation Plan (WIP) Guidebook template. Print at least 200 copies and make at least 200 CD's. The WIP Guidebook will be available to any group who is interested in improving local water quality. The WIP Guidebooks will also be used in the selected communities for this project. Before completion of the project we will evaluate and make any necessary revisions to further refine this new water quality planning tool.

Over 200 paper copies of the draft guidebook were printed and distributed to interested parties. It was also made available on the KWA website. The draft guidebook was used by the members of the four watershed teams to write their WIPs. After the four WIPs were written, the draft guidebook was revised based the experiences of the watershed teams. CDs of the guidebook were not made.

b) Manage the completion of a minimum of four WIPs in the Salt and or Licking River Basins. Completed WIPs will be published and disseminated (print, CD and Internet) to key local

officials, community groups and project partners who were actively engaged in the WIP development process. Completed WIPs will also be available on the project partners' web sites.

Four WIP were written, one for each of the watershed groups involved in the project. These were published and disseminated and are available on KWA's website and partners' websites.

c) Identify at least one local measure that could be implemented with little or no funding to improve local water quality that would implement an action step in the WIP and work with the community to get the measure(s) passed and implemented.

Measures for local communities to take to improve water quality with little or no funding were included in the Best Management Practices recommendations of each of the four WIPs. These were items such as ordinance review, training workshops for local officials, educational activities like stream walks and festival days, and stormwater runoff awareness.

d) Identify and apply for at least two potential funding sources to implement action steps in each WIP that will work toward improving local water quality.

The Dry Creek, Hancock Creek, and Stockton Creek groups all sought additional funding through the application of various grants. The 5 Star grant (2009) written for the Dry Creek Group to do a constructed wetland in cooperation with the KY Transportation Cabinet. This grant was not successful. The River Network MillerCoors grant (2010) was written for the Stockton Creek group to fund continued water quality monitoring. This grant was not successful. The NiSource grant (2010) was written for the Hancock Creek group to create a walking trail to help ameliorate stormwater issues in Winchester. This grant was partially awarded. The money has since been used to plant native trees in riparian areas of the Hancock Creek Watershed. The Darby Creek group did not seek additional funding.

Other sources of funding and project ideas are listed in the Best Management Practices section of each of the WIPs.

5.2 Conclusions

The final products of this project, including the First Edition *Watershed Planning Guidebook for Kentucky Communities*, the four watershed plans, and the storyboards are all excellent tools for communities across the state of Kentucky. The process of creating these products touched many lives and will result in greater awareness of watershed issues. In these ways, this project was an enormous success.

Many of the lessons learned by the four watershed teams have been incorporated into the revised Guidebook. Improved guidance on selecting and working with technical advisors and other subcontractors will allow other groups using the Guidebook to be even more successful in writing watershed plans. Hopefully future groups will be able to avoid the frustration and waste of precious funds and time of subcontract miscommunications and failures. Creating

strong relationships with clear expectations will all partners at the beginning of a project of this scope will serve the entire project better.

The Kentucky Waterways Alliance has gained invaluable experience in working with local communities and partners and the complicated nature of watershed-based planning through this project. This will allow KWA to better serve all the communities and waterways of Kentucky in the future.

Appendix A – Financial and Administrative Closeout

From Milestones: This MOA shall 1) encourage better watershed management by engaging local citizens and interagency representatives in developing local WIPs to mitigate water quality problems in eligible watersheds, 2) provide focused planning assistance, technical support and funding in the Salt and Licking River basins to local groups that are willing to develop and seek funding to implement WIPs, 3) develop and provide a new WIP Guidebook and 4) create, where necessary, suitable technical and educational materials to assist in the planning process.

Milestone	Final Status	Actual End Date
1. Submit all draft materials to the Cabinet for review and approval.	Completed	June 2010
2. Submit advanced written notice on all workshops, demonstrations, and/or field days to the Cabinet.	Completed	February 2010
3. Project partners meet to review resources and develop WIP Guidebook	Completed	November 2007
4. Partners meet to review outreach message and develop project specific outreach messages if necessary	Completed	April 2007
5. UKLA review BMPs and resource materials for bacteria/pathogen and sediment/siltation NPS problems and develop (if necessary) education and training materials	Completed	November 2007
6. Submit revised draft WIP Guidebook to Cabinet for approval	Completed	November 2007
7. Submit drafts of outreach messages to Cabinet for approval	Completed	November 2007
8. Partners develop RFP and announcement of funding for WIPs	Completed	March 2007
9. Partners finalize text/format for updated WIP Guidebook	Completed	January 2008
10. Submit draft education and training materials to Cabinet for approval	Completed	November 2007
11. KWA publish storyboards and guidebooks	Completed	January 2008
12. Partners meet w/River Basin Teams to select 4-8 RFPs for funding	Completed	September 2007

13. List of selected watersheds for funding sent to Cabinet for approval	Completed	September 2007
14. Grantees accept awarded grant	Completed	July 2008
15. KWA and contractors work with groups to develop WIPs.	Completed	April 2010
16. Hold a preliminary community roundtable in each of the four participating watersheds to publicize project and get community input	Completed	April 2008
17. Submit draft of each WIP to Cabinet for review and approval	Completed	March 2010
18. Hold a second community roundtable in each of the four participating watersheds to publicize project and get community input once plan has been drafted	Completed	November 2009
19. Publish WIPs after completion of each watershed plan	Completed	June 2010
20. KWA staff continue work with each WIP community to identify implementation steps and write funding proposals	Completed	April 2010
21. Submit BMP Implementation Plan/QAQP as required/necessary	Completed	June 2010
22. KWA and contractors review WIP guide using community feedback and participants' experiences – draft revisions	Completed	May 2010
23. Submit draft of revisions to WIP Guidebook to Cabinet for approval	Completed	May 2010
24. Post revisions to WIP documents on partners Web sites and print copies with remaining print funds	Completed	June 2010
25. Upon request of the Division of Water, submit Annual Report and/or participate in the Cabinet sponsored biennial NPS Conference.	Completed	November 2008
26. Submit three copies of the Final Report and all products produced by this project.	Completed	July 2010

Budget Summary

Detailed Budget – Approved Grant Application

Budget Categories (itemize all categories)	**Section 319(h)**	**Non-Federal Match**	**TOTAL**
Personnel	$88,188	$31,932	$ 120,120
Supplies			
Equipment			
Travel	$8,500	$6,394	$14,894
Contractual	$89,370	$77,620	$166,990
Operating Costs	$3,280	$3,280	$6,560
Other (WIP)	$165,000	$117,000	$282,000
TOTAL	**$354,338**	**$236,226**	**$590,564**
	60.0%	**40.0%**	**100 %**

Detailed Budget (Amendment #1) as approved by KDOW in 2008

Budget Categories (itemize all categories)	**Section 319(h)**	**Non-Federal Match**	**TOTAL**
Personnel	$158,263.90	$62,966.76	$221,230.66
Supplies	0	0	0
Equipment	0	0	0
Travel	$16,208.27	$7,577.95	$23,786.22
Contractual	$17,206.44	$8,604.29	$25,810.73
Operating Costs	$12,059.39	$20,228.00	$32,287.39
Other (WIP)	$150,600.00	136,849.00	$287,449.00
TOTAL	**$354,338**	**$236,226**	**$590,564**
	60.0%	**40.0%**	**100 %**

This budget revision was necessary because there have been significant changes to our project partners. The University of Kentucky Landscape Architect Department (UKLA) is no longer a project partner. UKLA was to assist in developing the Guidebook and lead in formatting and printing the Guidebook and the storyboards. UKLA was also responsible for working with two (2) of the groups and printing the Watershed Plans. KWA agreed to assume these responsibilities, and as a result, personnel and travel budgets have approximately doubled. Also additional dollars were needed for printing. Costs for contractors to help develop Watershed Plans (other) were revised to reflect actual costs when all projects came under contract.

Final Expenditures

Detailed Budget (Amendment #2) as approved by KDOW in 2010

Budget Categories	Section 319 (h)	Non-Federal match	Total	Final Expenditures Total
Personnel	149,551.24	56,559.80	206,111.04	205,258.04
supplies	0	0	0	0
equip	0	0	0	0
travel	12,952.00	7,076.96	20,028.96	20,011.06
Contractual	16,906.44	8,604.29	25,510.73	25,510.73
Operating	17,436.08	11,586.06	29,022.14	29,641.97
Other	157,492.24	152,398.89	309,891.13	310,142.20
Total	**354,338.00**	**236,226.00**	**590,564.00**	**590,564.00**

"Kentucky Waterways Alliance, Inc. was reimbursed $354,338.00. All dollars were spent; there were no excess project funds to reallocate."

No equipment was purchased for this project.

There were no special grant conditions for this project.

Appendix B – Watershed Plans (electronic, disc #1)

The following items were included as electronic files to save space and to be more environmentally friendly by reducing the use of additional paper and ink:

1. Darby Creek Watershed Plan (Word file)
2. Darby Creek Watershed Plan Best Management and Action Item Tables (Excel file)
3. Dry Creek Watershed Plan (Word file)
4. Hancock Creek Watershed Plan (Word file)
5. Hancock Creek Watershed Plan Best Management and Action Item Tables (Excel file)
6. Stockton (Town Branch) Creek Watershed Plan (Word file)
7. Stockton (Town Branch) Creek Watershed Plan Best Management and Action Item Tables (Excel file)

Appendix C – QAPPs (electronic, disc #1)

The following items were included as electronic files to save space and to be more environmentally friendly by reducing the use of additional paper and ink:

1. Darby Creek QAPP (PDF file)
2. Dry Creek QAPP (PDF file)
3. Dry Creek QAPP signature page (PDF file)
4. Stockton Creek QAPP (PFD file)
5. Stockton Creek QAPP signature page (PDF file)

Appendix D – Storyboards (electronic, disc #2)

The following items were included as electronic files (all PDF files) to save space and to be more environmentally friendly by reducing the use of additional paper and ink:

1. Storyboard 1: NPS Introduction
2. Storyboard 2: Developed Areas
3. Storyboard 3: Construction
4. Storyboard 4: Agriculture
5. Storyboard 5: Timber
6. Storyboard 6: Hydrologic and Habitat Modification
7. Storyboard 7: Wastewater

Appendix E – Draft Guidebook (electronic, disc #3)

The following items were included as electronic files to save space and to be more environmentally friendly by reducing the use of additional paper and ink:

1. Draft Watershed Planning Guidebook (PDF file)

Appendix F – Watershed Planning Guidebook for Kentucky Communities, First Edition (cover page). The cover page is also included electronically on disc #3.