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Kentucky Water Resources Research Institute Center of Excellence for Watershed Management Watershed Summit Summary Report

Kentucky Water Resources Research Institute, University of Kentucky

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**Kentucky Water Resources Research Institute
Center of Excellence for Watershed Management
Watershed Summit Summary Report**



**Marriott Hotel, Lexington, KY
September 5, 2012**

Acknowledgements

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1.0 Introduction

Started in 2007, the EPA Region 4 Centers of Excellence for Watershed Management Program works with colleges and universities from across the Southeast to provide hands-on, practical products and services for communities to identify watershed problems and solve them. Each EPA designated Center actively seeks out watershed-based stakeholder groups and local governments that need cost effective tools for watershed scientific studies, engineering designs and computer mapping, as well as assistance with legal issues, project management, public education and planning. More information about priority watersheds in the Southeast is available online at:

<http://www.epa.gov/region4/water/watersheds/index.html>

On March 22, 2011, the U. S. Environmental Protection Agency (EPA) announced the designation of the Kentucky Water Resources Research Institute (KWRRRI) at the University of Kentucky (UK) as a Center of Excellence for Watershed Management. This is the first Center of Excellence to be designated in Kentucky and the seventh in the Southeast. The Kentucky Water Resources Research Institute was created in 1964 by Congress as part of the Water Resources Research Act. Since that time, the KWRRRI has continued to work with faculty and research staff at UK and well as other Kentucky institutions of higher learning various Non Governmental Organizations (NGOs) in addressing water and environmental issues of importance to the Commonwealth of Kentucky.

To become a recognized Center of Excellence, the institution must demonstrate technical expertise in identifying and addressing watershed needs; involvement of students, staff and faculty in watershed research; capability to involve the full suite of disciplines needed for all aspects of watershed management; financial ability to become self-sustaining; ability to deliver and account for results; willingness to partner with other institutions; and support from the highest levels of the organization.

The Kentucky Center of Excellence for Watershed Management (KCEWM) is envisioned to have four basic goals:

- Provide technical support to the Kentucky Watershed Management Framework Process.
- Provide technical support to Watershed Stakeholders
 - Development and implementation of watershed plans
 - Foster collaborations between Center partners and watershed stakeholders
- Provide educational resources through the Kentucky Watershed Academy.
- Serve as a clearinghouse for watershed related information and data.
 - Website
 - Database

2.0 KCEWM Watershed Summit Purpose

As part of its mission to foster collaborations between Center partners and watershed stakeholders, the KCEWM held a watershed summit in Lexington Kentucky on September 5, 2012. The purpose of the summit was to bring together potential Center partners from academia and the environmental NGO community with representatives from various governmental agencies to introduce potential partners to the newly formed KCEWM and to initiate discussions about ongoing and potential watershed management activities across Kentucky. Although not as comprehensive in scope, this summit was meant to build on two previous watershed summits that were held in 2003 and 2004 through a partnership between the Kentucky Environmental and Public Protection Cabinet and the Kentucky Waterways Alliance, Inc. A list of the participants of the 2012 summit is provided in Appendix A.

The intent of the summit was to identify specific watershed issues in each of the major river basins in Kentucky and ways the Center could be most effective in fostering and supporting watershed management activities across the Commonwealth. The meeting agenda is provided in Appendix B. Dr. Lindell Ormsbee, director of the KWRRI, began the meeting with a short presentation that outlined the mission of the Center as well as potential benefits and expectations of Center partners. A copy of the presentation is provided in Appendix C.

2.1 First Breakout Session

Following Dr. Ormsbee's opening presentation, attendees were broken into different groups to facilitate discussions about the vision and planned activities of the Center. The discussion questions for the first breakout session were:

What additional ways could the Center best meet the needs of the partners?

What additional ways could the Center best meet the needs of the stakeholders?

How would you envision yourself or your organization partnering with the Center?

Do you have any other general suggestions for the proposed structure and mission of the Center?

At the end of discussion time, reporters from each group summarized the responses of their group to the rest of the summit attendees. A compilation of the various responses to these questions are provided in Appendix D.

2.2 Panel of Government Agency and NGO Partners

Following the initial breakout session, representatives from government agencies and environmental NGOs were invited to provide a brief summary of their particular agency or NGO and how they are involved in watershed management activities. Potential collaboration opportunities with university faculty and professional staff were also presented. Representative agencies and NGOs included:

- 1) Kentucky Division of Water
- 2) Region 4 EPA
- 3) Kentucky Division of Forestry
- 4) Kentucky River Authority
- 5) Bluegrass PRIDE
- 6) Eastern Kentucky PRIDE
- 7) Kentucky Waterways Alliance
- 8) Kentucky Watershed Watch
- 9) ORSANCO

2.3 Lunch Discussions

At the end of the panel discussion, summit participants were provided lunch and then encouraged to self select a table to pursue potential collaboration opportunities with representatives from various governmental agencies or environmental NGOs. Representatives from each of the different agencies or NGOs were seated at different tables during lunch to facilitate these discussions.

2.4 Second Breakout Session

Following lunch, attendees were again broken into different groups based on river basin to facilitate discussions about specific issues in their basin. The basins are shown in Figure 1. In addition to breakout groups for each basin, a breakout group for the entire state was also provided. The discussion questions for the second breakout session were:

What are the major issues in your basin?

What research, programs, or activities are you pursuing in your basin?

What are the most successful watershed activities in your basin?

In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

Once the second breakout session was completed, reporters from each group summarized the responses of their group to the rest of the summit attendees. A summary of the various responses to these questions by individual basin is provided in Appendix E. A summary of the various responses to these questions as organized by basins is provided in Appendix F.

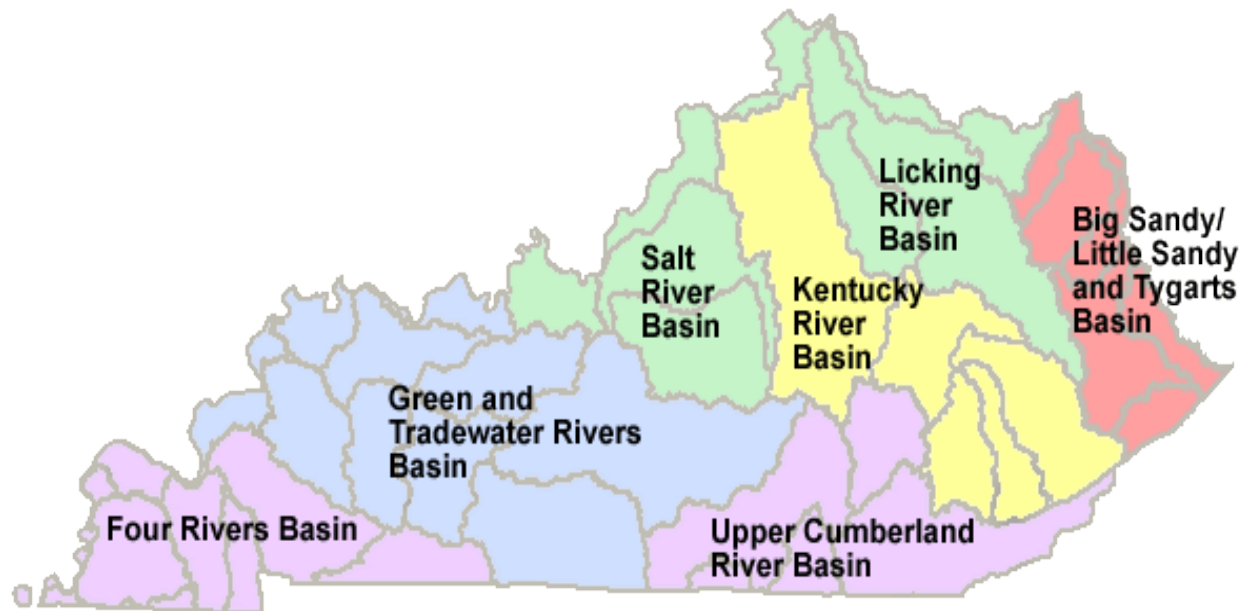


Figure 1. Major River Basins in Kentucky

2.5 Participant Feedback

Following the second breakout session, participants were asked to provide anonymous answers to a series of questions using Turning Point Response Card Technology. The questions and the associated responses are provided in Appendix G.

2.6 Summary and Conclusions

The Kentucky Center of Excellence for Watershed Management held a watershed summit in Lexington on September 5, 2012 to bring together potential partners from academia and the environmental NGO community with representatives from various government agencies. The overall goal was to introduce potential partners and to initiate discussions on ongoing and potential watershed management strategies across Kentucky. The summit also sought to identify specific watershed issues in each major river basin and to explore the most effective approaches for the Center to foster watershed management activities across the Commonwealth.

The 57 participants included 36 representatives from university and college partners (University of Kentucky (20), University of Louisville (4), Northern Kentucky University (3), Morehead State University (2), Hazard Community and Technical College (2), Bluegrass Community and Technical College (1), Eastern Kentucky University (1), Western Kentucky University (1), Kentucky State University (1), and Murray State University (1)). Fifteen government agency participants represented 4 state agencies (Kentucky Division of Water (5), Kentucky Geological Survey (4), Kentucky River Authority (1), and Kentucky Division of Forestry (1)), two federal agencies (US Geological Survey (2) and US Environmental Protection Agency (1)), and one regional agency (ORSANCO (1)). NGOs were

represented by Bluegrass PRIDE (2), Eastern Kentucky PRIDE (1), Friends of Wolf Run (1), Kentucky Waterways Alliance (1), and Watershed Watch (1).

A short presentation outlining the mission of the center was followed by an initial breakout session where groups of attendees discussed their visions and potential activities that the Center could undertake and then reported back to the entire gathering. Thirty-one suggestions for ways that the center could meet the needs of the partners were recorded. These responses represent areas such as data and information access, communication, technical assistance related to maps GIS and sampling, and education. A question regarding ways that the center can best meet the needs of the stakeholders resulted in 22 suggestions including education and training, reporting and information sharing, engaging volunteers, providing contacts with elected officials, state groups and EPA, and assisting groups in organizing and maintaining momentum. Participants indicated several ways that they could partner with the Center such as providing data, educating youth through networking with schools, providing expertise and technical information, and providing information on activities to be publicized on the Center web site. With regard to the structure and mission of the Center, the participants suggested assisting with the basin coordinator positions and establishing outreach and education coordinators for each basin, partnering with other stakeholders (such as cooperative extension and EQC), assisting with stakeholders outside of central Kentucky, tapping into service learning students and providing independent study credit for participation in the annual meeting, and revisiting the watershed framework to formulate structure in the watersheds.

Representatives from government agencies and environmental NGOs provided a brief summary of each group's involvement in watershed management activities, resources or programs that currently exist, and potential opportunities for partner collaboration. Those presenting included the Kentucky Division of Water, Region 4 EPA, the Kentucky Division of Forestry, Kentucky River Authority, Bluegrass PRIDE, Eastern Kentucky PRIDE, Kentucky Waterways Alliance, Kentucky Watershed Watch and ORSANCO. During lunch, participants were encouraged to select a table where they might pursue potential collaboration opportunities with these representatives from the different agencies or NGOs.

A second breakout session was held to facilitate discussions about specific issues in each basin; ongoing research, programs, or activities; the most successful watershed activities in their basin; and ways that the Center could help partners and stakeholders better address critical basin issues. Reporters from each group subsequently summarized their discussions to the whole summit. Some common issues or concerns included: 1) water quality (sediment, pathogens, nutrients, heavy metals, and pharmaceuticals), 2) storm water (development, impervious surfaces, green infrastructure, and ordinances), 3) community education and awareness, 4) flooding, and 5) sampling and data analysis. The most successful watershed programs and activities included: 1) volunteer monitoring efforts, 2) stream restorations and installation of buffer zones, 3) public education and outreach efforts, and 4) local stream cleanups. Suggestions for ways that the Center can help partners and stakeholders included: 1) facilitating communication, information sharing, and education, 2) providing networking opportunities, and 3) leveraging funding and providing cost share programs.

2.7 Future Directions

In the final activity of the summit, participants anonymously provided responses to a series of questions using TurningPoint Response Card Technology to help identify a path forward. The participants found the summit informative and the two breakout sessions and networking opportunity were identified as the

most useful activities. Partners are generally willing to be identified and promoted through the Center's web site. Information sharing, such as notification of opportunities and funding via email and access to a Center database were identified as potentially valuable activities for the Center. Respondents preferred a semi-annual or annual conference held on a weekday. Participants were generally willing to work with stakeholders, inform the Center of their activities, share reports, and share data through the Center. They also indicated that some form of involvement with a Watershed Academy would be beneficial.

A potential approach for initiating future activities would be for Center participants to sponsor workshops for stakeholders in their respective regions of the state to help initiate relationships and cooperation.

APPENDIX A: WATERSHED SUMMIT PARTICIPANTS

<u>LAST NAME</u>	<u>FIRST NAME</u>	<u>ORGANIZATION</u>
Akers	Paulette	KY Division of Water
Albritton	Ben	Univ of Kentucky
Arnold	Craig Anthony	Univ of Louisville
Atwood	David	Univ of Kentucky
Bhuiyan	Tanvir H	U of L
Carey	Dan	KGS
Coakley	Tricia	Univ of Kentucky
Currens	James C	KGS
Davidson	Bart	KGS
Davis	B. Mark	Eastern Kentucky Pride
Erena	Jennifer	Friends of Wolf Run
Fattic	Jana	Western KY Univ
Fennell	Scott	Northern KY Univ
Fryar	Alan	Univ of Kentucky
Graddy	Hank	Watershed Watch
Griffin	Mike	USGS
Guertal	William	USGS
Haight	April	Morehead State Univ
Haight-Maybriar	Lajuanda	KY Division of Water
Hamilton	David	KY River Authority
Hanley	Carol D	Univ of Kentucky
Higgins	Steve	Univ of Kentucky
Idstein	Peter	Univ of Kentucky
Jacobs	Mark	Northern Kentucky Univ
Jenkins	Stephanie	Univ of Kentucky
Jones	Alice	EKU
Kannan	Miriam S	NKU
Kipp	Jim	Univ of Kentucky
Larson	Eric W	Univ of Kentucky
Lee	Brian	Univ of Kentucky
Marlenson	Elizabeth	Bluegrass PRIDE
Mayfield	Heather	ORSANCO
McAllister	Malissa	Univ of Kentucky
McCulley	Rebecca	Univ of Kentucky
McMaine	John	Univ of Kentucky
Medlin	Rex	Hazard Community TC
Medlin	Lana	Hazard Community TC
Morgan	Maggie	KY Division of Water

Mynhier	Charles Etta	Univ of Kentucky
Newbold	Amy	EPA Reg 4
Oliver	Christie	Univ of Kentucky
Ormsbee	Lindell	Univ of Kentucky
Osborne	Ashley	Univ of Kentucky
Petersen	Judy	KY Waterways Alliance
Renz	Meredith	Univ of Kentucky
Reynolds	Dale N	KY Division of Water
Rockaway	Thomas	Univ of Louisville
Shanshan	Li	Univ of Louisville
Sofyan	Agus	BSCTC/BSWW
Stivender	Pattie	Bluegrass PRIDE
Tsegaye	Teferi	KY State Univ
Webb	John	KY Division of Water
Wendroth	Ole	Univ of Kentucky
West	Stewart	KY Division of Forestry
Whiteman	Howard	Watershed Study Institute
Wright	Rita	Morehead State Univ
Zhu	Junfeng	KGS

APPENDIX B: WATERSHED SUMMIT MEETING AGENDA

Kentucky Center of Excellence for Watershed Management Watershed Summit

September 5th, 2012

8:00 a.m.-4:30 p.m.

Marriot Hotel, Lexington Kentucky


Agenda

- 8:00 a.m. Registration
- 8:30 a.m. Welcome
Dr. Lindell Ormsbee, Kentucky Water Resources Research Institute
- 8:45 a.m. History and Vision of the Center
Dr. Lindell Ormsbee, Kentucky Water Resources Research Institute
- 9:45 a.m. Breakout Session 1: Vision and Activity of the Center of Excellence
- What additional ways could the Center best meet the needs of the partners?
What additional ways could the Center best meet the needs of the stakeholders?
How would you envision yourself or your organization partnering with the Center?
Do you have any other general suggestions for the proposed structure and mission of the Center?
- 11:30 a.m. Panel of Government Agency and NGO Partnerships
- 12:15 p.m. Lunch
- 1:30 p.m. Breakout Session #2: River Basin Partnerships and Activities
- What are the major issues in your basin?
What research, programs, or activities are you pursuing in your basin?
What are the most successful watershed activities in your basin?
In what ways could the Center help partners and stakeholders better address the critical issues in their basin?
- 3:30 p.m. Discussion, Summary and Future Work Items

APPENDIX C: OVERVIEW OF KCEWM PRESENTATION

Kentucky
Center of Excellence
for
Watershed Management
at the
Kentucky Water Resources Research Institute

Watershed Summit
09/05/12




EPA Region 4: EPA Center of Excellence for Watershed Management Program

- Began in 2007
- Partnership with universities and state environmental protection agencies
- Developed to support watershed stakeholders in identifying and solving watershed problems at the local level
- <http://www.epa.gov/region4/water/watersheds/index.html>

Other Centers

- Alabama A&M
- Auburn University
- Clemson University
- University of Florida
- University of Georgia
- University of Tennessee
- North Carolina State University
- Florida Agricultural and Mechanical University



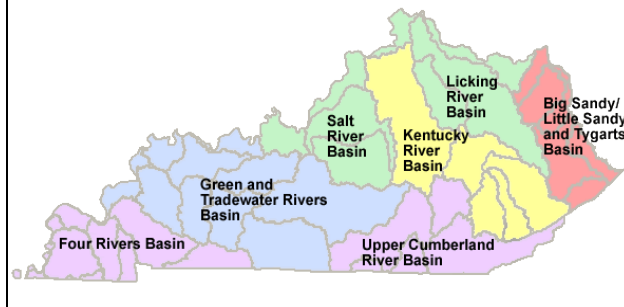
Kentucky Center of Excellence for Watershed Management

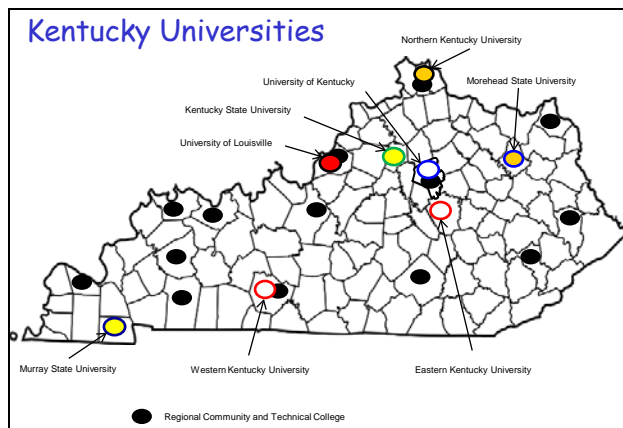
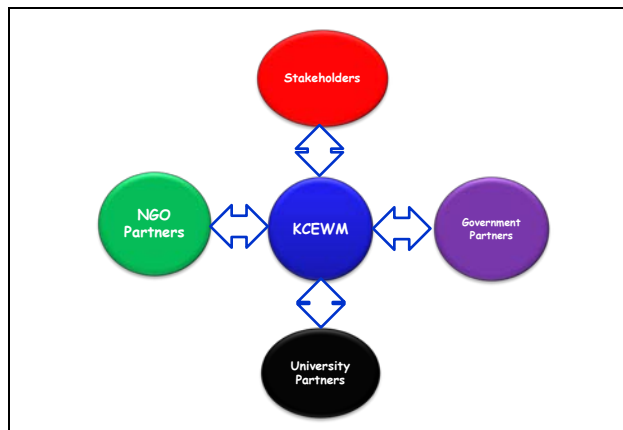
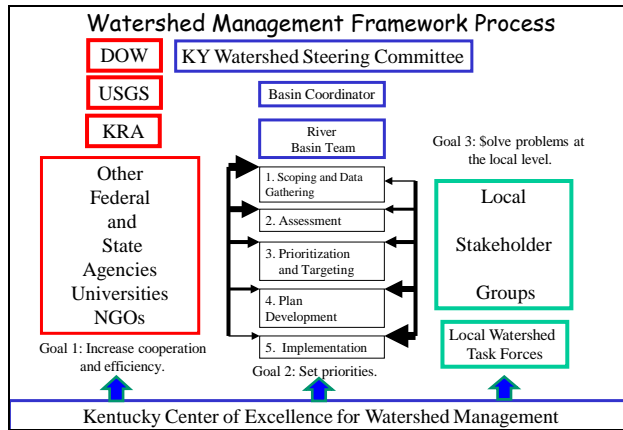
- Created in 2011 at the University of Kentucky through the Kentucky Water Resources Research Institute (KWRI)
- KWRI was created in 1964 by Congress to help address water quantity and quality issues in the Kentucky
 - Foster focused research
 - Support the training of water professionals
 - Stimulate technology transfer

Center Goals

- Provide technical support to the Kentucky Watershed Management Framework Process.
- Provide technical support to Watershed Stakeholders
 - Development and implementation of watershed plans
 - Foster collaborations between Center partners and watershed stakeholders
- Provide educational resources through the Kentucky Watershed Academy.
- Serve as a clearing house for watershed related information and data.
 - Website
 - Database

KY DOW Kentucky Watershed Management Program





Federal Gov. Organizations

- US EPA
- US Geological Survey
- US Army Corp of Engineers
- US Fish and Wildlife
- US Forest Service
- US Department of Agriculture
- Tennessee Valley Authority
- ORSANCO

State Gov. Organizations

- Kentucky Energy and Environment Cabinet
 - Department of Environmental Protection
 - Division of Water
 - Division of Waste Management
 - Department of Natural Resources
 - Division of Conservation
 - Division of Forestry
- Kentucky Department of Fish and Wildlife
- Kentucky River Authority

Partner NGOs

- Kentucky Waterways Alliance
- Sierra Club Water Sentinels
- Watershed Watch of Kentucky
- Kentucky Stormwater Association
- Kentucky Rural Water Association
- The Nature Conservancy
- Eastern Kentucky PRIDE
- Bluegrass PRIDE
- Cumberland River Compact

Center Involvement

- By Geographical Location
 - Statewide
 - Regional
- By Expertise
 - Education
 - Community Engagement
 - Hydrology
 - Chemistry
 - Biology
 - Law/Economics
 - Social Sciences
 - Etc

Center Advisory Board

- Basin Coordinators
- University Representatives
- Government Representatives
- NGO Representatives

Partnership Benefits

- Promotion of faculty or organization by the Center.
 - Website contact info
 - Website webpage link
- Notification of potential stakeholder partnership opportunities.
- Notification of potential funding opportunities.
- Opportunity for involvement in Watershed Academy.
- Database access.
- Possible project funding.
- Annual conference.



Partnership Expectations

- Consent to be recognized as a *Center* partner?
- Commitment to work with watershed stakeholders?
- Commitment to keep the *Center* informed of ongoing research, projects, programs, or funding opportunities?
- Willingness to share reports and publications?
- Willingness to share data?

APPENDIX D: RESPONSES FROM BREAKOUT SESSION 1
Vision and Activity of the Center of Excellence

D.1 What additional ways could the Center best meet the needs of the partners?

- Create an advisory committee for the center
- Pull together existing resources
- Provide partners ways to develop partnership with a proven model
- Assistance with grant applications
- House a database including research from academics
- Translated research into public information including framing for usefulness for general public
- Provide opportunities to partner with other centers, instructions, others to accomplish common goals
- Encourage data sharing
- Provide networking sessions
- Develop “How To” workshops for evolution of watershed programs
- Include a summary of partners technical expertise and knowledge on the website
- Provide frequently ask questions on the website
- Identify and recognize community leaders
- Highlight success stories on the website
- Enhance communication in every direction
- Assist with leveraging funding
- Provide technical documents and expertise – QAPP, Permits, Ordinances, Surface Water Protection Plan, Green Infrastructure, Asphalts to Ecosystems, TMDLs, BMPs
- Create a position for a Center Coordinator
- Provide accessibility to field crews and field sampling equipment
- Provide GIS/GPS mapping resources
- Serve as financial advisors for water quality projects
- Document Center for Excellence Watershed Management meeting via audio or video to provide other partners or stakeholders
- Provide assistance with groups establishing a 501 C designation
- Lobby for water related issues
- Assist with Watershed Planning
- Develop an annual conference and listserv for watershed opportunities
- Create forum for partners to post questions or needs for service
- Create a cheat sheet for available networks of partners to successfully connect to classrooms
- Develop working groups to address common watershed issue for research or outreach and education
- Provide continuing education credits with a seminar series either webinar or lecture series
- Produce a annual summary with graphs and charts highlighting progress

D.2 What additional ways could the Center best meet the needs of the stakeholders?

- Grassroots Education
- Provide web-based training for gathering information, riparian buffer improvements, and tailoring messaging for the general public
- Create KY Watershed Leadership Academy technical and lay audience tracks
- Training for volunteer education
- Training for smaller watershed improvements
- Reporting of activities in watersheds positive and negative
- Sharing success stories
- Engaging new volunteers and individuals- water quality hazards, events, information dissemination, volunteer opportunities
- Fund research and growth activities for watersheds
- Provide leadership at the residential/local level
- Provide a mechanism to report local concerns
- Create examples of sample letters to elected officials
- Try to be an active source of information not a static source
- Continue to participate in education and outreach
- Provide tools for elected officials to address stormwater issues
- Address common goals
- Assist people in organizing and keep the momentum of interest
- Provide liaisons to the regions to address concerns and issues in watershed as well as informational gaps
- Provide resources/speakers for interest groups including chamber and fiscal court meetings
- Create contacts with municipalities, MS4s, majors, Judge Executives, KACO, CAMM, League of Cities
- Center should communicate with EPA for national perspective and funding opportunities
- Host job posting and internships on the website

D.3 How would you envision yourself or your organization partnering with the Center?

- Returning data to see the big picture
- Educate young people
- Network with schools and other interest groups
- Partners provide expertise and technical information and support
- Populate activities on the website

D.4 Do you have any other general suggestions for the proposed structure and mission of the Center?

- Assist with Basin Coordinator positions – recruit, find funding, maintain leadership
- Include an outreach and education coordinators for each basin
- Include other stakeholders – Cooperative Extension agents, EQC
- Assist in connections with stakeholders outside of central Kentucky
- Tap into service learning students for watershed issues
- Independent study credit for attending and participation in the annual meeting possible for Education department (500 level class or graduate level class that are cross link)
- Watershed framework needs to be revisited to formulate structure in watersheds

APPENDIX E: RESPONSES FROM BREAKOUT SESSION 2
River Basin Partnerships and Activities (organized by question and then watershed)

E.1 What are the major issues in your basin?

E.1.1 Statewide

- Stormwater, Sediment, Pathogens and Nutrients
- Heavy metals
- Limited Green Infrastructure and low impact development
- Need Pharmaceutical data
- Additional stormwater controls
- Education of stakeholder and communities
- Cost concerns with sampling
- Need analysis of data
- Highlight conservation and water quality issues
- Provide awareness until water quantity and quality become a crisis
- Enhance green options for stakeholders including KTC

E.1.2 Salt

- Farmland, sediment, karst
- Barriers include development pressure and ordinances

E.1.3 Licking/Big Sandy

- Sediment and bacteria
- Hydrological modification
- Oxygen depletion
- Algal Blooms in Stoner Creek
- Pet waste
- Impervious surface
- High conductivity in area possibly due to geology or urbanization

E.1.4 Kentucky

- Erosion
- Failing Infrastructure
- Flooding
- Groundwater and surface water interactions
- Pharmaceuticals
- NPS impacts
- Nutrients
- Water supply

E.1.5 Upper Kentucky and Upper Cumberland

- Flooding
- Water Quality- Fecal from straight pipes, Failing septic systems, and inadequate sewage treatment, mining and reclamation issues
- Lack of where to access information
- Trust concerns
- Logistics of collection and sampling networks and crews
- Burnout of leadership and development of new leadership
- Social and Economic disincentives for citizens

E.1.6 Four Rivers/Green/Tradewater

- Concerns with enhancing education, awareness, and interest
- Government distrust in rural areas
- Ag pollution, industrial pollution, and logging/deforestation

E.2 What research, programs, or activities are you pursuing in your basin?

E.2.1 Statewide

- Water Watch activities including mini grants, farmer roundtables
- Need funded water quality position in local areas/communities

E.2.2 Salt

- Parks
- Historical research and Education
- Self monitoring of citizens

E.2.3 Licking /Big Sandy

- Education and Outreach
- Monitoring
- NKU Educational programming

- Stream Restoration
- Increase Buffer Zones

E.2.4 Kentucky

- Pharmaceutical concerns
- Assist with “Friends Of” groups
- Stream buffer restoration
- USFWS programs
- Consent decree for LFUCG
- Environmental Education
- Stream cleanups
- Volunteer sampling
- Watershed planning followed by implementation

E.2.5 Upper Kentucky and Upper Cumberland

- Cleanups
- Activating volunteer groups
- Partnerships with other interest groups

E.2.6 Four Rivers/Green/Tradewater

- Improve Buffers along waterways

E.3 What are the most successful watershed activities in your basin?(A) What are the barriers? (B)

E.3.1 Statewide

- (B) Lack of knowledge prevents good activities
- (B) Lack of funding
- (B) Limited manpower

E.3.2 Salt

- (A) NRCS activities

E.3.3 Licking /Big Sandy

- (B) Possible site for breeding Hellbender
- (B) 10 acre wetland development
- (B) Livestock in the streams
- (B) Combined sewers in Northern KY
- (A) Education and Outreach by SD1
- (A) NKU tool for field data access
- (A) Hingston Creek watershed plan

- (A) Innovative package plant design
- (A) Stoner Creek Art competition

E.3.4 Kentucky

- (B) Limited Spanish materials
- (B) Political jurisdictions
- (B) Busy stakeholders with limited time to get access to educational opportunities
- (B) Lack of connection between citizens and water issues
- (B) Financial limitations
- (B) Local buy in from community and elected officials
- (B) Planning and Zoning concerns
- (B) Aversion to regulations

E.3.5 Upper Kentucky and Upper Cumberland

- (A) Redbird Project: local buy in and partnerships
- (A) Creek Cleanups
- (A) Buck Creek activity
- (A) Bushy Creek activity
- (A) Recreational access to streams via Fish and Wildlife

E.3.6 Four Rivers/Green/Tradewater

- (A) Active Volunteer network
- (A) 319 Projects
- (A) Kentucky Lake monitoring data
- (A) Conservation Center in the Green
- (A) Special Use streams due to mussels and fish
- (A) Army Corps of Engineers developing a long term study of the Green
- (B) Lack of long term planning
- (B) Political will
- (B) Funding concerns

E.4 In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

E.4.1 Statewide

- Engage new interest groups
- Utilize social media
- Recruit water quality people to become leaders
- Education of stakeholders
- Center can be advocate and lobby for issues
- Network scientist to create opportunities to solve problems

- Host workshops
- Leverage Funding
- Create awareness
- Create Listserve
- Create forum for partners on the website for communication of services or needs in local areas
- Funded position at the center to assist with coordination

E.4.2 Salt

- Partnerships and networking conferences,
- Newsletters
- Communication
- Assist with showing improvements

E.4.3 Licking /Big Sandy

- Share Success stories via newsletter and web
- Networking opportunities
- Leverage funding
- Assist with Communication
- Assist with local buy in
- Frequently ask question on the web
- Provide cost share programs
- Help encourage grassroots development
- Education for stakeholders on stream stabilization
- Encourage holistic watershed approach
- Provide quick status of watershed with graphs and charts annually
- Create listserv

E.4.4 Kentucky

- Develop cost share programs
- Create videos and educational materials (Schoolhouse Rock)
- Bring stakeholders together
- Maintain and clearing house function
- Issue warning letters and fines for litter
- Create cost share grants for statewide projects

E.4.5 Upper Kentucky and Upper Cumberland

- Host a neutral stance to provide information to stakeholders
- Provide sources of information without an advocacy role
- Connect with Cooperative Extension to develop additional Outreach and Education
- Identify the local interest in watersheds to highlight success stories

- Educate groups about the groundwater and surface water interaction
- Utilize the EPA recovery tool to identify target focus areas

E.4.6 Four Rivers/Green/Tradewater

- Develop partnership to pursue funding opportunities
- Distribute money toward existing programs
- Continue networking opportunities
- Facilitate information sharing and awareness communication
- Utilize UK and KWRRRI as name recognition to affect change
- Facilitate Watershed festivals
- Engage non-science community

APPENDIX F: RESPONSES FROM BREAKOUT SESSION 2
River Basin Partnerships and Activities (organized by watershed and then by question)

F.1 Statewide Comments

F.1.1 What are the major issues in your basin?

- Stormwater, Sediment, Pathogens and Nutrients
- Heavy metals
- Limited Green Infrastructure and low impact development
- Need Pharmaceutical data
- Additional stormwater controls
- Education of stakeholder and communities
- Cost concerns with sampling
- Need analysis of data
- Highlight conservation and water quality issues
- Provide awareness until water quantity and quality become a crisis
- Enhance green options for stakeholders including KTC

F.1.2 What research, programs, or activities are you pursuing in your basin?

- Water Watch activities including mini grants, farmer roundtables,
- Need funded water quality position in local areas/communities

F.1.3 What are the most successful watershed activities in your basin? (A) What are the barriers? (B)

- (B) Lack of knowledge prevents good activities
- (B) Lack of funding
- (B) Limited manpower

F.1.4 In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

- Engage new interest groups
- Utilize social media
- Recruit water quality people to become leaders
- Education of stakeholders
- Center can be advocate and lobby for issues
- Network scientist to create opportunities to solve problems
- Host workshops
- Leverage Funding
- Create awareness
- Create Listserve

- Create forum for partners on the website for communication of services or needs in local areas
- Funded position at the center to assist with coordination

F.2 Salt River Basin Comments

F.2.1 What are the major issues in your basin?

- Farmland, sediment, karst
- Barriers include development pressure and ordinances

F.2.2 What research, programs, or activities are you pursuing in your basin?

- NRCS activities

F.2.3 What are the most successful watershed activities in your basin? (A) What are the barriers? (B)

- (A) Parks
- (A) Historical research and Education
- (A) Water quality monitoring by citizens

F.2.4 In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

- Partnerships and networking conferences
- Newsletters
- Communication
- Assist with showing improvements

F.3 Licking/Big Sandy River Basin Comments

F.3.1 What are the major issues in your basin?

- Sediment and bacteria
- Hydrological modification
- Oxygen depletion
- Algal Blooms in Stoner Creek
- Pet waste
- Impervious surface
- High conductivity in area possibly due to geology or urbanization

F.3.2 What research, programs, or activities are you pursuing in your basin?

- Education and Outreach
- Monitoring
- NKU Educational programming
- Stream Restoration

- Increase Buffer Zones

F.3.3 What are the most successful watershed activities in your basin? (A) What are the barriers? (B)

- (B) Possible site for breeding Hellbender
- (B) 10 acre wetland development
- (B) Livestock in the streams
- (B) Combined sewers in Northern KY
- (A) Education and Outreach by SD1
- (A) NKU tool for field data access
- (A) Hingston Creek watershed plan
- (A) Innovative package plant design
- (A) Stoner Creek Art competition

F.3.4 In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

- Share Success stories via newsletter and web
- Networking opportunities
- Leverage funding
- Assist with Communication
- Assist with local buy in
- Frequently ask question on the web
- Provide cost share programs
- Help encourage grassroots development
- Education for stakeholders on stream stabilization
- Encourage holistic watershed approach
- Provide quick status of watershed with graphs and charts annually
- Create listserv

F.4 Kentucky River Basin Comments

F.4.1 What are the major issues in your basin?

- Erosion
- Failing Infrastructure
- Flooding
- Groundwater and surface water interactions
- Pharmaceuticals
- NPS impacts
- Nutrients
- Water supply

F.4.2 What research, programs, or activities are you pursuing in your basin?

- Pharmaceutical concerns
- Assist with “Friends Of” groups
- Stream buffer restoration
- USFWS programs
- Consent decree for LFUCG
- Environmental Education
- Stream cleanups
- Volunteer sampling
- Watershed planning followed by implementation

F.4.3 What are the most successful watershed activities in your basin? (B) What are the barriers? (A)

- (B) Limited Spanish materials
- (B) Political jurisdictions
- (B) Busy stakeholders with limited time to get access to educational opportunities
- (B) Lack of connection between citizens and water issues
- (B) Financial limitations
- (B) Local buy in from community and elected officials
- (B) Planning and zoning concerns
- (B) Aversion to regulations

F.4.4 In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

- Develop cost share programs
- Create videos and educational materials (Schoolhouse Rock)
- Bring stakeholders together
- Maintain and clearing house function
- Issue warning letters and fines for litter
- Create cost share grants for statewide projects

F.5 Upper Kentucky and Upper Cumberland River Basin Comments

F.5.1 What are the major issues in your basin?

- Flooding
- Water Quality- Fecal from straight pipes, Failing septic systems, and inadequate sewage treatment, mining and reclamation issues
- Lack of where to access information
- Trust concerns
- Logistics of collection and sampling networks and crews
- Burnout of leadership and development of new leadership
- Social and Economic disincentives for citizens

F.5.2 What research, programs, or activities are you pursuing in your basin?

- Cleanups
- Activating volunteer groups
- Partnerships with other interest groups

F.5.3 What are the most successful watershed activities in your basin? (A) What are the barriers? (B)

- (A) Redbird Project: local buy in and partnerships
- (A) Creek Cleanups
- (A) Buck Creek activity
- (A) Bushy Creek activity
- (A) Recreational access to streams via Fish and Wildlife

F.5.4 In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

- Host a neutral stance to provide information to stakeholders
- Provide sources of information without an advocacy role
- Connect with Cooperative Extension to develop additional Outreach and Education
- Identify the local interest in watersheds to highlight success stories
- Educate groups about the groundwater and surface water interaction
- Utilize the EPA recovery tool to identify target focus areas

F.6 Four Rivers/Green/Tradewater River Basin Comments

F.6.1 What are the major issues in your basin?

- Concerns with enhancing education, awareness, and interest
- Government distrust in rural areas
- Ag pollution, industrial pollution, and logging/deforestation

F.6.2 What research, programs, or activities are you pursuing in your basin?

- Improve Buffers along waterways

F.6.3 What are the most successful watershed activities in your basin? (A) What are the barriers? (B)

- (A) Active Volunteer network
- (A) 319 Projects
- (A) Kentucky Lake monitoring data
- (A) Conservation Center in the Green
- (A) Special use stream designation due to mussels and fish
- (A) Army Corps of Engineers developing a long term study of the Green
- (B) Lack of long term planning
- (B) Political will
- (B) Funding concerns

F.6.4 In what ways could the Center help partners and stakeholders better address the critical issues in their basin?

- Develop partnership to pursue funding opportunities
- Distribute money toward existing programs
- Continue networking opportunities
- Facilitate information sharing and awareness communication
- Utilize UK and KWRRRI as name recognition to affect change
- Facilitate Watershed festivals
- Engage non-science community

APPENDIX G: PARTICIPANT RESPONSES

1.) Center Partner Affiliations... (multiple choice)	Responses	
University	21	53.85%
Agency	9	23.08%
NGOs/Nonprofits	9	23.08%
Totals	39	100%

2.) Which Basin Management Unit... (multiple choice)	Responses	
Kentucky River	16	51.61%
Salt/Licking Rivers	7	22.58%
Upper Cumberland 4 Rivers	4	12.90%
Green/Tradewater	3	9.68%
Big/Little Sandy & Tygarts	1	3.23%
Totals	31	100%



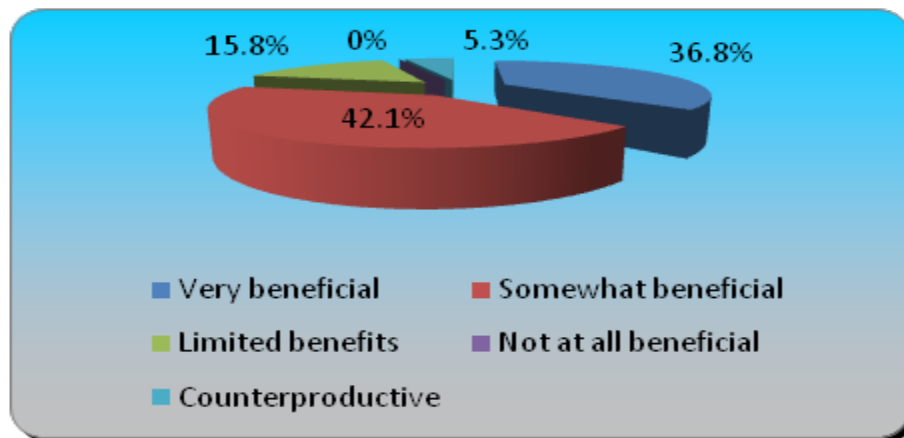
3.) I found today's Summit (multiple choice)	Responses	
Very Informative	17	43.59%
**	9	23.08%
Somewhat Informative	11	28.21%
****	2	5.13%
No Opinion	0	0%
*****	0	0%
Not Very Informative	0	0%
*****	0	0%
Not At All Informative	0	0%
Totals	39	100%



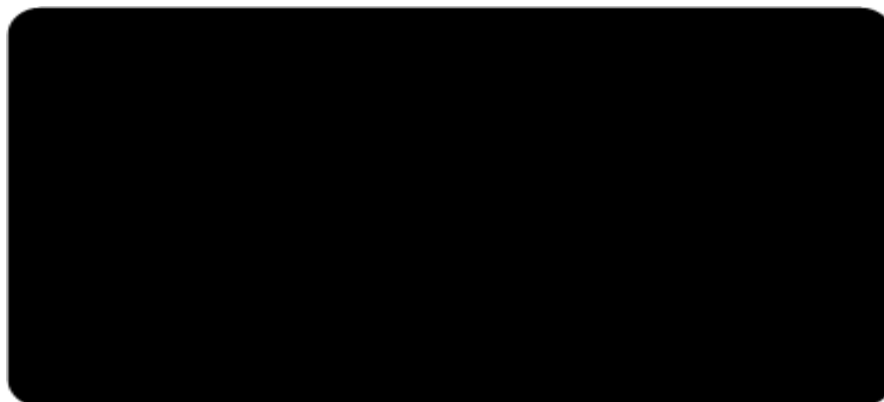
4.) The Most Useful Session... (multiple choice)	Responses	
Center History/Vision	2	5.26%
Govt Agency Panel	0	0%
Breakout 1 Center (vision/activity)	12	31.58%
NGO Panel	2	5.26%
Breakout 2 (basin partnerships/activity)	10	26.32%
General Networking Opportunity	12	31.58%
Totals	38	100%



5.) 1. Promotion through website... (multiple choice)	Responses	
Very beneficial	14	36.84%
Somewhat beneficial	16	42.11%
Limited benefits	6	15.79%
Not at all beneficial	0	0%
Counterproductive	2	5.26%
Totals	38	100%



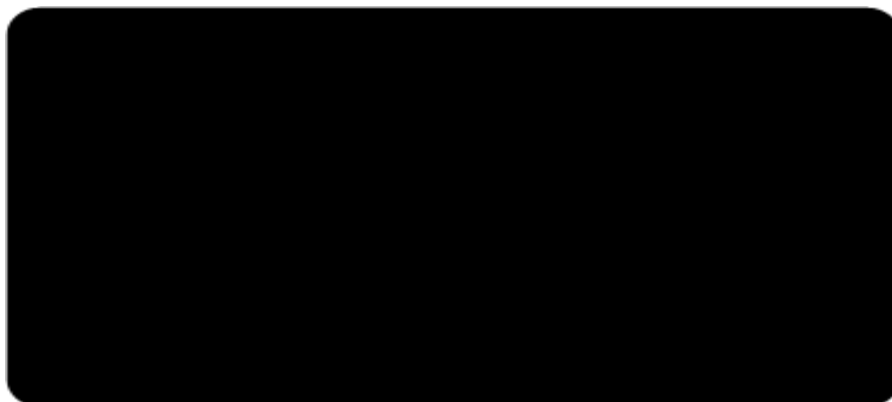
6.) 2. Notification of opportunities... (multiple choice)	Responses	
Very beneficial	27	69.23%
Somewhat beneficial	12	30.77%
Limited benefits	0	0%
Not at all beneficial	0	0%
Counterproductive	0	0%
Totals	39	100%



7.) 3. Notification of funding... (multiple choice)	Responses	
Very beneficial	29	74.36%
Somewhat beneficial	7	17.95%
Limited benefits	1	2.56%
Not at all beneficial	1	2.56%
Counterproductive	1	2.56%
Totals	39	100%



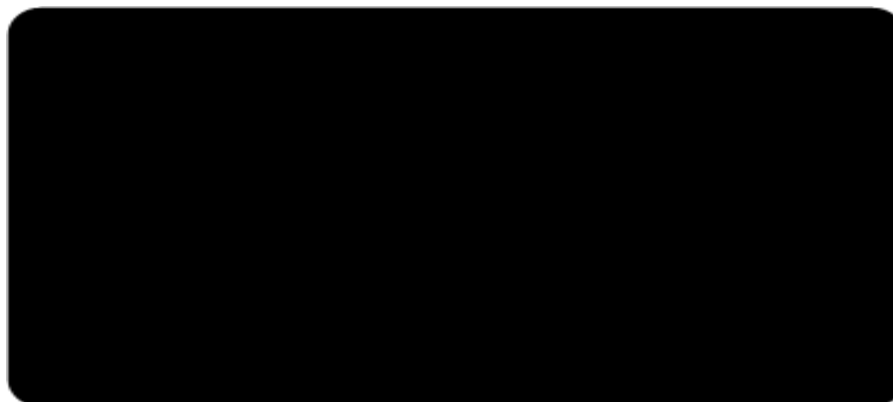
8.) 4. Involvement in Watershed Academy (multiple choice)	Responses	
Very beneficial	15	40.54%
Somewhat beneficial	15	40.54%
Limited benefits	7	18.92%
Not at all beneficial	0	0%
Counterproductive	0	0%
Totals	37	100%



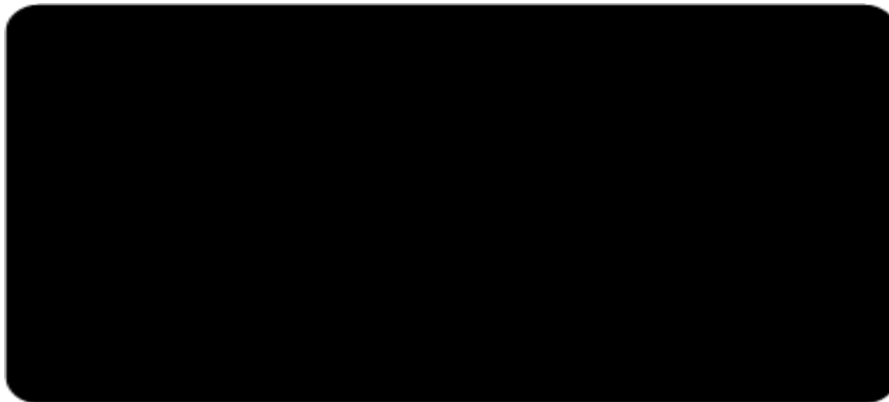
9.) 5. Access to Center database... (multiple choice)	Responses	
Very beneficial	17	45.95%
Somewhat beneficial	13	35.14%
Limited benefits	6	16.22%
Not at all beneficial	1	2.70%
Counterproductive	0	0%
Totals	37	100%



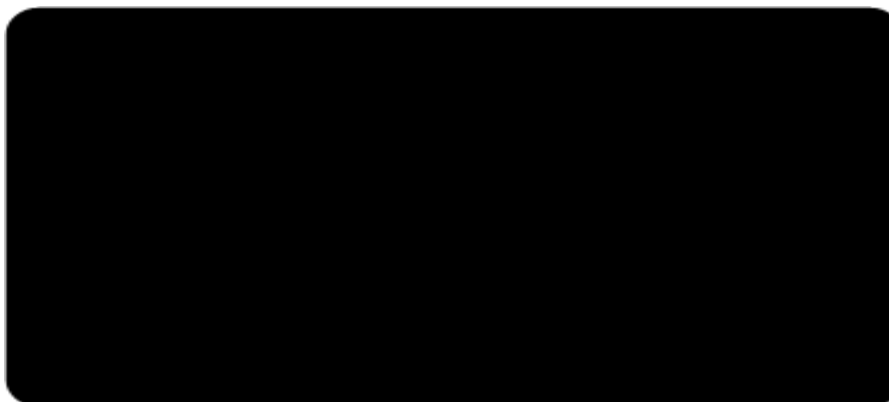
10.) 6. Access to possible project funding... (multiple choice)	Responses	
Very beneficial	30	76.92%
Somewhat beneficial	8	20.51%
Limited benefits	0	0%
Not at all beneficial	0	0%
Counterproductive	1	2.56%
Totals	39	100%



11.) 7. Participation in annual conference... (multiple choice)	Responses	
Very beneficial	27	72.97%
Somewhat beneficial	7	18.92%
Limited benefits	3	8.11%
Not at all beneficial	0	0%
Counterproductive	0	0%
Totals	37	100%



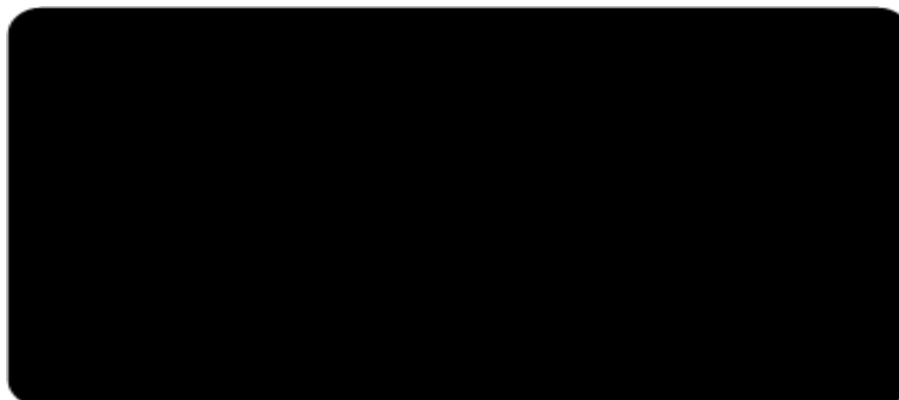
12.) 1. Recognized as a partner... (multiple choice)	Responses	
Reasonable Expectation	34	87.18%
****	2	5.13%
Unsure about Acceptability	3	7.69%
*****	0	0%
Unreasonable Expectation	0	0%
Totals	39	100%



13.) 2. Work with stakeholders... (multiple choice)	Responses	
Reasonable Expectation	27	72.97%
****	8	21.62%
Unsure about Acceptability	2	5.41%
*****	0	0%
Unreasonable Expectation	0	0%
Totals	37	100%



14.) 3. Inform Center of Activities... (multiple choice)	Responses	
Reasonable Expectation	22	57.89%
****	11	28.95%
Unsure about Acceptability	5	13.16%
*****	0	0%
Unreasonable Expectation	0	0%
Totals	38	100%

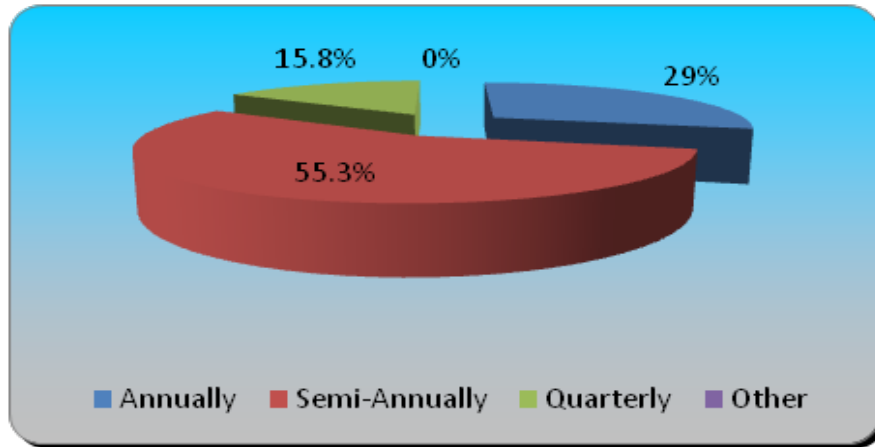


15.) 4. Share reports and publications... (multiple choice)	Responses	
Reasonable Expectation	26	70.27%
****	8	21.62%
Unsure about Acceptability	1	2.70%
*****	0	0%
Unreasonable Expectation	2	5.41%
Totals	37	100%



16.) 5. Expectation: Share data... (multiple choice)	Responses	
Reasonable Expectation	19	50%
****	12	31.58%
Unsure about Acceptability	5	13.16%
*****	1	2.63%
Unreasonable Expectation	1	2.63%
Totals	38	100%

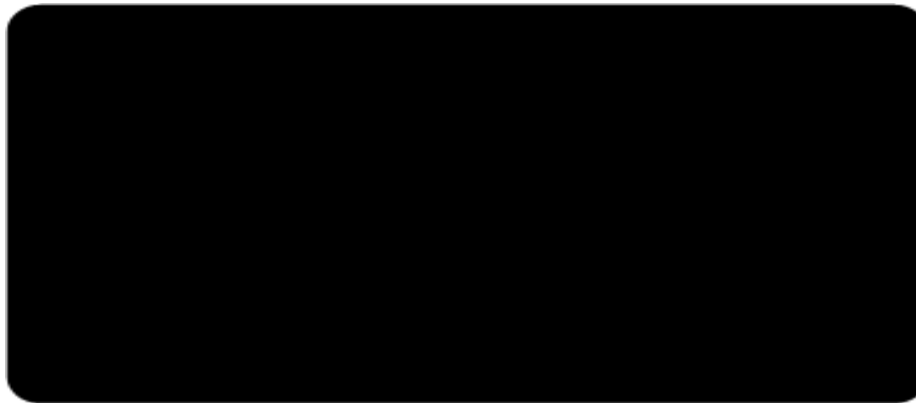
17.) How Often Should Partners Meet... (multiple choice)	Responses	
Annually	11	28.95%
Semi-Annually	21	55.26%
Quarterly	6	15.79%
Other	0	0%
Totals	38	100%



18.) Most Productive Meeting Type... (multiple choice)	Responses	
In person	34	87.18%
Interactive Webinars	1	2.56%
Conference Calls	3	7.69%
Other	1	2.56%
Totals	39	100%



19.) Most Acceptable Meeting Times... (multiple choice)	Responses	
Week Days	35	89.74%
Week Nights	1	2.56%
Weekends	3	7.69%
Totals	39	100%



20.) Most Effective Communication... (multiple choice)	Responses	
Web Site	2	5.13%
E-mail messages	27	69.23%
Listserve	10	25.64%
Paper newsletter	0	0%
Other	0	0%
Totals	39	100%

