North Central Region Water Network Seed Grant Final Report

Title: Watershed management: Developing leadership capacity in collaboration and civic engagement for collective action.

Abstract: Non-point sources of pollution are considered the most common cause of impairment to water quality in the U.S. (USEPA, 2016). Collaborative watershed groups play a central role in addressing non-point sources of pollution to surface waters of the United States. Collaborative watershed management engages key stakeholder groups in identifying water quality impairments and then developing water quality goals, strategies and actions to address the identified impairments (USEPA, 2005). The social dimensions (e.g., civic engagement and collaborative process) are frequently cited as core elements of the watershed approach (Wright-Morton & Brown, 2011; Sabatier, et al, 2005), but many watershed leaders lack the knowledge and skills to effectively engage stakeholders in collaborative processes. The long-term goal of this project was to strengthen the capacity of the land grant universities in the North Central Region to provide educational programs and resources in the social dimensions of watershed management for watershed leaders. Toward that end, a literature review was conducted to identify key elements of watershed leadership, leading to the creation of a conceptual framework to describe the knowledge, attitudes, skills, and aspirations (KASA) required by watershed leaders to effectively lead civic engagement and collaborative processes. Four overarching themes emerged from the literature review and were identified as core values associated with civic engagement and collaboration for watershed management.

1) Processes for dialogue and deliberation advance democratic principles.
2) Diversity of stakeholders and participants is valued.
3) Collaborative learning is supported.
4) Structures and processes are in place to manage conflict.

A second key outcome of this project was to identify and characterize watershed and lake leadership programs offered through the land-grant universities around the North Central Region. Programs emphasizing civic engagement and collaborative process were also included in the program review. A more extensive inventory of instructional modules, lessons, and educational resources is currently underway as a direct result of this seed project. In summary, this project resulted in the development of a conceptual framework identifying core values and KASA associated with effective leaders in civic engagement and collaborative process for watershed management. This conceptual framework will be used to identify educational programs and products currently in use around the North Central Region and gaps in programs and products available to increase capacity among watershed leaders to effectively lead civic engagement and collaborative processes.

Purpose: Non-point sources of pollution are considered the most common cause of impairment to water quality in the U.S. (USEPA, 2016). In the region served by the North

Central Region Water Network, nutrient and sediment runoff from agricultural land is associated with lake eutrophication, including harmful algal blooms in the western Lake Erie basin, and is considered a significant contributor to the hypoxic zone in the Gulf of Mexico. Collaborative watershed groups play a central role in addressing non-point sources of pollution to surface waters of the United States. Collaborative watershed management engages key stakeholder groups in identifying water quality impairments and then developing water quality goals, strategies and actions to address the identified impairments (USEPA, 2005). The social dimensions are frequently cited as core elements of the watershed approach (Wright-Morton & Brown, 2011; Sabatier, et al, 2005), but many watershed leaders lack the knowledge and skills to effectively engage stakeholders in collaborative processes.

The land-grant universities in the North Central Region can play a valuable role in building the capacity of watershed leaders to engage watershed stakeholders in collaborative processes. The purpose of this project was to strengthen the capacity of the land grant universities in the North Central Region to provide educational programs and resources in the social dimensions of watershed management for watershed leaders. This project supports the work of university and non-profit program directors, coordinators, and educators who develop and deliver educational programs aimed at increasing the capacity of water resource professionals and stakeholder representatives to lead collaborative approaches to watershed management.

Project goals:

NCRWN Overall Grant Goals	Seed Grant Goals
A) Strengthen existing or create new collaborations between university researchers and Extension educators	#1) Identify the knowledge and skills watershed leaders in the North Central Region need to effectively lead civic engagement and collaboration.
B) Increase multi-state connectivity and learning among university professionals and partners.	
C) Build capacity of universities to address multi-state water-related issues and opportunities	#2) Create a strategy to support Extension program development to address the need for educational curriculum development on collaborative leadership and civic engagement.
D) Leverage institutional and financial resources outside of the university in the short and long term.	
E) Generate measurable economic, environmental, and social impacts in the short	

and long-term.	

Seed Grant Goal #1 contributes to achieving NCRWN grant goals A and B. In the process of identifying the educational needs of watershed leaders, the PI will convene a team of researchers and educators across the region to evaluate educational needs, existing programs, and identify opportunities for expanding and enhancing existing educational programs.

Seed Grant Goal #2 contributes to achieving NCRWN grant goal C. The project team consists largely of university educators and researchers who, through their participation in this project, will have the opportunity to increase their own knowledge about civic engagement and collaboration in the context of watershed management. We also anticipate that the products resulting from this project will increase the capacity of educators and program leaders across the North Central Region to develop and deliver multi-state educational programs for watershed leaders in the areas of civic engagement and collaboration.

While we did not develop seed grant goals specifically related to NCRWN grant goals D and E, a section of the strategic plan developed by the project team will identify opportunities for leveraging institutional and financial resources to implement recommendations in the plan through partnerships and grants (NCRWN grant goal D). We also believe that this project will contribute to more effective collaborative watershed management efforts across the region, which could contribute to more sustainable use of natural resources and improved water quality in the long term.

Methods and Activities: The primary focus of this project was to conduct an assessment of the need for educational programs and materials related to civic engagement and collaboration for watershed management. The project was completed in three phases. Phase 1 consisted of a review of the literature to identify key characteristics of effective watershed leaders in the areas of collaboration and civic engagement. Phase 2 involved a scan of existing watershed and lake leadership programs. During Phase 3, members of the project team organized the findings from the literature review to create a conceptual framework of watershed leadership for collaboration and civic engagement. The team also created a platform to conduct a more in-depth assessment of existing watershed and lake leadership programs to identify existing educational programs and products that address the leadership attributes identified in the literature review. The in-depth program assessment will also enable the team to identify gaps in existing educational programs and products. Following is a more detailed description of the methods and activities associated with each phase of the project.

Phase 1: Literature review

One of the first steps toward the implementation of this project was to hire Molly Illes, Graduate Research Associate at the University of Minnesota, to conduct the literature review and program scan. Ms. Illes worked under the direct supervision of Scott Chazdon, Evaluation and Research Specialist with University of Minnesota Extension, and received guidance from Barbara Radke, Associate Extension Professor for Leadership and Civic Engagement, University of Minnesota Extension, and Joe Bonnell, Program Director for Watershed Management with Ohio State University Extension. Members of the project team were asked to provide an initial list of references for Ms. Illes to begin identifying leadership attributes for collaboration and civic engagement. Beginning with those initial references, Ms. Illes broadened the review, focusing on research conducted in the context of watershed management. A second-tier review was also conducted of non-water related reports, but the majority of sources were specific to watershed and water resource management. Out of the review of the literature, eighteen topics emerged, which were presented to the project team in Chicago on November 3, 2015. The literature review submitted by Ms. Illes is provided as an addendum to this report.

Phase 2: Program Scan

In addition to the literature review, Ms. Illes was also charged with identifying educational programs offered throughout the North Central Region that targeted watershed and lake management leaders. The purpose of this program scan was to identify existing programs and conduct a rough assessment to determine what aspects of civic engagement and collaboration those programs cover. Some members of the project team are directly involved in such programs, including the Ohio Watershed Academy (Joe Bonnell), the Michigan Lake and Stream Leaders Institute (Jo Latimore), and the Wisconsin Lake Leaders Institute (Eric Olson). As with the literature review, the project team was asked to provide names and contacts for any programs that should be included in the scan. Ms. Illes also conducted several online searches for leadership programs in civic engagement and collaboration for water resource professionals. Some programs not specifically targeting watershed leaders but specializing in collaboration and civic engagement were included in the final program scan report. The principle investigators felt that these programs, while not water specific, could be a valuable source for curricula, instructional modules, assignments, and resources that could easily be adapted to a watershed and lake leadership context. The program scan report was presented to the project team in Chicago on November 3, 2015 at the same time as the literature review.

Phase 3: Conceptual framework and program scan next steps

Members of the project team met at the Chicago Botanical Gardens on November 3-4, 2015. The meeting began with a presentation by Ms. Illes to provide an overview of the results of the literature review and program scan. After Ms. Illes' presentation, the team spent much of the first day reviewing, revising, and organizing the 18 topics that emerged from the literature review. Members of the project team have numerous years of combined

experience working with and building leadership capacity with collaborative watershed groups and more broadly working with communities and organizations to conduct effective civic engagement and collaboration. The team applied this practical experience with theoretical grounding in their respective fields to condense and organize the 18 topics into a more cohesive conceptual framework. The group recognized that the 18 topics Ms. Illes identified from the literature review were a mix of knowledge/skill areas and qualities of effective civic engagement and collaboration. The 18 topics would need to be reworded to make them more useful for evaluating educational programs and developing learning outcomes for leadership programs. Therefore, the group went through the 17 topics (two items were considered redundant) and identified the following four overarching themes:

- Democratic process
- Participant/stakeholder diversity
- Collaborative learning
- Critical thinking and conflict: Power and politics

Before the end of the meeting on November 3, the project team located all 17 topics into one of the four categories.

Overnight, Joe Bonnell (project Co-PI) reviewed the notes from the November 3 meeting and made one final revision to the conceptual framework. Dr. Bonnell saw the four themes as describing the values associated with effective civic engagement and collaboration. He also identified an additional theme emerging from the discussion (consideration for local context). He presented the resulting conceptual framework (Figure 1) to the team on the morning of November 4. The team agreed to move forward with the proposed framework.

Values associated with civic engagement and collaboration for watershed and lake management leadership	Qualities of watershed leaders (Knowledge/Attitudes/Skills/Aspirations)
Democratic process: Processes for dialog (developing shared understanding) and deliberation (decision-making) advance democratic principles.	1. Awareness of different collaborative processes and when they are most appropriate. 2. Ability to facilitate the right process for the desired outcomes 3. Knowledge of/ability to use diversity of communication tools and processes to ensure broad-based sharing of information and opportunities for meaningful input and involvement. 4. Understanding of power dynamics and how they influence group dynamics. 5. Facilitating processes that manage existing power dynamics.
Consideration for local context: Structures and processes are	1. Awareness of importance of historical context to watershed management (socio-political, ecological, cultural). (Ability to give examples of relevant history).

appropriate to the watershed socio-political, ecological, and historical context.	2. Awareness of levels of social, human, political capital and strategies for channeling and enhancing community capital. 3. Awareness of basic principles of social change and behavior change & application of these principles to achieve watershed management goals.
Participant/stakeholder diversity: Diversity is valued	1. Value diversity and understand why diverse stakeholder involvement is important at all stages of the management process. 2. Identify stakeholder groups 3. Valuing diverse ways of knowing; diverse perspectives 4. Recognizing differences in stakeholder groups (e.g., readiness to participate, level of involvement & commitment required – for e.g., will the stakeholder be asked to change their behaviors?) 5. Ability to utilize multiple strategies for getting stakeholders to the table 6. Awareness of different skill sets, strengths among group members and how to utilize those varied strengths 7. Self-awareness (leadership, learning, communication styles; motivations; values) and implications for working with and leading groups.
Collaborative learning: Collaborative learning is supported	1. Collaborative learning (different levels of expertise, integrating values and scientific information, accommodating different worldviews, adaptive management) 2. Facilitating critical thinking & systems thinking
Critical thinking and conflict: power/politics: Structures and processes are in place to manage conflict	1. Valuing conflict as a necessary aspect of collaborative process and civic engagement 2. Navigating conflict vs. conflict avoidance 3. Assessing levels of trust among participants/stakeholders; facilitating processes for building trust

Figure 1: Conceptual framework for collaboration and collaboration for watershed and lake management leadership.

Also at the Chicago meeting, Ms. Illes provided an overview of water management education and training programs (program scan)(see Appendix A). Ms. Illes identifies eleven programs around the North Central Region, most of which directly or indirectly address water resource management (e.g., Ohio Watershed Academy and Missouri Watershed Management Planning Workshop), though several are not specific to water management (e.g., Missouri Community Development Academy and Leadership Wisconsin). Information for the program scan was obtained by reviewing the corresponding websites, program brochures, and program evaluation reports, where available. A survey was also sent to program contacts to assess which of the 18 civic engagement and collaboration topics emerging from the literature review are covered in the respective programs. A total of eight program contacts responded to the survey. Results are provided in the program scan report (Appendix A).

The program scan conducted by Ms. Illes was helpful for identifying educational programs that directly or indirectly addressed civic engagement and collaboration for watershed and lake management leadership and provided the project team with an initial overview of topics covered, the team agreed that more detailed information was needed to identify specific educational resources currently in use to address the various aspects of civic engagement and collaboration identified in the conceptual framework. A sub-team, led by Eric Olson (Director, University of Wisconsin Extension Lakes program), was created during the second day of the Chicago meeting to develop a method for collecting more detailed information about educational resources from the program contacts identified by Ms. Illes. Mr. Olson's group created a Google document that would allow program leaders and project team members to identify educational resources that address the various knowledge/attitudes/skills/aspirations (KASA) of watershed leaders for collaboration and civic engagement. Contributors to the document are able to identify the name of the module, lesson, or resource used; the origin of the resource; cost to acquire; and URL if appropriate.

Another sub-group was formed on Day 2 of the Chicago meeting, led by Rebecca Power (Director, North Central Region Water Network) to identify potential partners and funding opportunities for this project after the NCRWN seed funding ends (Feb, 2016). A summary of partner and funding ideas is provided in Appendix B.

Outcomes and Deliverables (See Figure 2)

NCRWN Overall Grant Goals	Seed Grant Goals	Outcomes	Deliverables
A) Strengthen existing or create new collaborations between university researchers and Extension educators B) Increase multi-state connectivity and learning among university professionals and partners.	#1) Identify the knowledge and skills watershed leaders in the North Central Region need to effectively lead civic engagement and collaboration.	• Knowledge, skills, and attitudes of effective leaders were identified through a literature review and contributions from members of the project team.	• Literature Review (Appendix X) • Conceptual Framework (Figure 1) • Program Scan (Appendix X)
C) Build capacity of universities to address multi-state water-related issues and opportunities	#2) Create a strategy to support Extension program development to address the need for educational curriculum development on collaborative leadership and civic engagement.	• The project team met and identified several strategies for supporting program development.	• Google Document created to collect program modules, lessons, and other resources currently in use. • Draft agenda for project meetings at NCRWN Spring Conference
D) Leverage institutional and financial resources outside of the university in the short and long term.		• Members of the project team identified multiple potential partners and funding sources.	• List of potential partners and funding sources
E) Generate measurable economic, environmental, and social impacts in the short and long-term.		• Progress toward this goal has not been evaluated. As this was a planning project, measurable economic, environmental, and social impacts were not expected to result from this project.	

Figure 2. Project Goals, Outcomes, and Deliverables

Project Team Reporting Categories (see Appendix C)

Event/Activity Reporting Categories

Event: Project Core Team phone conference
Date: February 20, 2015
Description: The core team (Joe Bonnell, Barb Radke, Eric Olson, Chad Cook, Jo Latimore, and Chad Ingles) met to review the project objectives, deliverables, and timeline.

Event: Project Core Team phone conference
Date: April 17, 2015
Description: The project core team met by phone. Joe Bonnell and Barb Radke provided an update on the literature review and program scan. The team discussed who to add to the team as external reviewers and to begin planning for the face-to-face meeting in November.

Event: Project team meeting in Chicago, IL
Dates: November 3-4, 2015
Description: The purpose of this event was to bring the project team together to hear from Molly Illes regarding her review of the literature and an overview of existing programs. The group created a conceptual framework that could be used to evaluated watershed and lake leader programs in terms of what topics are covered in the areas of collaboration and civic engagement. The group also developed a plan for moving the project forward beyond the end of the seed-funded project.

Nine members of the project team attended the event, including six members of the core team, two members of the expert panel, and one facilitator. The following states were represented: Ohio (1), Wisconsin (3), Indiana (1), Minnesota (2), Michigan (1), Nebraska (1).

Budget Reporting Form (Leveraged Funds: Goal #4)

	Extension Match/ Contribution	Partner Match/ Contribution	New leveraged funding*
Personnel (salaries, wages, fringe for leaders, support staff, students)			
Recipient organization or other subcontracted institutions	$ 10,600	$500	$
Those employed elsewhere-consultant/stipend/services	$	$	$
Materials and Supplies (anything from	$	$	$

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educational to field research supplies)			
Travel	$	$	$
Publications/Printing (an article in a scientific or technical journal or other type of field/program related publication or for commercial printing of brochures and program materials)	$	$	$
Other: non-personnel stipends or services, communications, meetings, speakers, equipment, etc.	$	$	$1000
TOTAL	$8000	$500	$ 1000

*New leveraged funding includes any additional grants or other funding sources that you applied for as a result of getting the seed grant.

References

Sabatier, P., W. Focht, M. Lubell, Z. Trachtenberg, A. Vedlitz, & M. Matlock (eds.). 2005. Swimming Upstream: Collaborative Approaches to Watershed Management. Cambridge, MA. Massachusetts Institute of Technology.

U.S. Environmental Protection Agency. 2005. Draft handbook for developing watershed plans to restore and protect our waters. Office of Water. Washington, D.C. EPA 841-B-05-005.

U.S. Environmental Protection Agency. 2016. What is nonpoint source? From the USEPA website. Accessed on January 19, 2016. URL: http://www.epa.gov/polluted-runoff-nonpoint-source-pollution/what-nonpoint-source

Wright Morton, L., & S. Brown (eds.). 2011. Pathways for Getting to Better Water Quality: The Citizen Effect. New York. Springler.

Appendix A: Program Scan

This document contains a snapshot of water management educational and training programs. The information was collected during website review. Additional information was reviewed including program brochures and evaluations. This document informed the literature review as well as the follow-up survey. Combined, this and other information serves to identify the gaps in programming relating to collaboration and civic engagement in watershed training and education.

Compiled by Molly Illes, Graduate Associate, University of Minnesota

Program Name	**Michigan Lake and Stream Leaders Institute**
Program goals	Developing local water resource stewards through science, policy and leadership skill development.
Program Activities	Participants take part in classroom and field-based sessions designed to help them better understand local water resource management planning and program implementation. Expert presenters from academia, natural resource agencies, and local communities cover topics including watershed management, lake and stream ecology, environmental education, leadership, and working with local and state government. The Institute is conducted through five in-depth sessions held across Michigan. Participants complete an independent applied project, based on what they learn during the Institute sessions. Projects can be designed to match each participant's area of interest. Past examples include organizing public forums or educational programs related to lakes and streams, initiating projects that protect or promote water quality, assisting in local water resource management activities or conducting water quality monitoring studies. Upon graduation, participants become part of the Institute's Alumni Program which offers networking, educational, and service opportunities, including Alumni Symposia held every other year. Institute alumni include property owners, drain commissioners, professors, non-profit organization representatives, students, and state and local government personnel.
Program delivery	Classroom learning and field experience; Face-to-face, biennial cohort program.
Target Audience	Citizens, students and professionals interested in becoming more effective water resource stewards and leaders.
Website/pages	http://msue.anr.msu.edu/program/info/michigan_lake_and_stream_leaders_institute http://msue.anr.msu.edu/uploads/235/21789/LSLI_2015_Information_Flyer_v3.pdf

Program Name	**Ohio Watershed Academy (OWA)**
Program goals/Mission	Professional development opportunity; The purpose of OWA is to build the capacity of current and future watershed group leaders in Ohio to facilitate the development and implementation of community-based watershed action plans.
Program Activities	Students of the Ohio Watershed Academy receive a certificate of completion. You can also receive undergraduate or graduate credit hours through the School of Environment and Natural Resources at The Ohio State University. Even if you are not a registered student in the Ohio Watershed Academy, you can browse through the Academy Lessons. The lessons are designed to familiarize watershed group leaders with a variety of topics related to collaborative watershed planning and implementation. Learning topics: Facilitating group discussions, running effective meetings, stakeholder involvement, negotiation skills, defining watershed programs, developing goals and objectives, implementing a watershed plan
Program delivery	10 week online course on variety of watershed management topics.
Target Audience	Watershed leaders and volunteers: Graduates of the Academy include paid watershed coordinators and other water resource professionals, watershed group volunteers, county health department and planning agency staff, and university students and faculty.
Website/pages	http://ohiowatersheds.osu.edu/education/courses http://production.cfaes.ohio-state.edu/apps/courses/cfaes/course/view.php?id=13 (link to courses)

Program Name	**Watershed Specialist Training Program (Minnesota)**

Program goals/Mission	Will strengthen and integrate skills for planning and implementing water restoration and protection; demonstrates to potential employers a high level of professional skills and an understanding of watershed science in a political and social context; participants who complete all requirements earn a Watershed Specialist Certificate.
Program Activities	Each course module has two goals: to describe the scope of the topic, showing how it integrates with other components of water resource work; and to build skills and provide resources that can be applied immediately. The course topics are: Institutions and Policy, Watershed Science, Civic Engagement, Communications, Assessment, Evaluation and Monitoring, Implementation Activities, Management and Administration.
Program delivery	Online, interactive, and 14 weeks long. Six to eight hours of work is required each week. No travel is needed, and yet you learn from colleagues around the state and from topic experts.
Target Audience	The course is designed for local government staff who are currently or anticipate coordinating, managing, planning or leading activities to restore or protect water resources. The course is also suitable for private consultants and non-profit organizations who work with local governments, and for students near the end of their degree program. Educational background may be in any natural resource, technical, or social science discipline.
Website	wst.umn.edu

Program Name	**MASWCD Leadership Academy (Minnesota Association of Soil and Water Conservation Districts)**
Program goals/Mission	The MASWCD Leadership Program is a dynamic educational experience to build leadership skills, confidence and professional networks of SWCD supervisors and employees to do effective conservation work across Minnesota.
Program Activities	Monthly sessions with topics including: Starting your Leadership Journey; personal & Visionary Leadership; Ethical Leadership; Team Leadership; Civic Leadership; Organizational Leadership; Authentic Leadership Building skills: communication, confidence, team building, and visionary leadership. Constant infusion of leadership techniques and training is needed to address the long term goals of your SWCD.
Program delivery	One-year cohort, in person, mostly two or three day workshops; cohort of up to 26 SWCD staff with priority given to people representing areas across Minnesota

Target Audience	SWCD Supervisors and Employees
Website/pages	http://maswcd.org/ http://maswcd.org/Leadership_Development/14_15_Registration_Form.pdf http://maswcd.org/Leadership_Development/2014_Leadership_One_Page_Information.pdf

Program Name	**Minnesota Leadership and Civic Engagement (While originally not watershed specific, two watershed specific civic engagement cohorts are planned for 2016 in partnership with the Minnesota Pollution Control Agency)**
Program Goals	Helps local leaders grow their skills, confidence, and willingness to lead through long-term cohort groups and local training sessions.
Program Topics	Leadership and Civic Engagement educators deliver research-informed education in long-term cohort programs where participants can learn, connect with others, and practice skills. Our goal is to help emerging and existing leaders meet their challenges using information and connections to people and resources.
Program delivery	Cohort group offerings: Small groups and teams help adults learn. Peer groups reinforce knowledge, attitude and behaviors, resulting in a better learning experience for participants. A cohort is the same group of people (typically 20-30 participants) meeting regularly over a longer period of time ranging from 6 to 18 months. The cohort design process means that Extension Educators engage our program sponsor(s) in clarifying their program interests and needs, incorporate our leadership educational model and practices, consider multiple learning methods, and then finalize the offering in collaboration with these sponsor(s), all with real-world application and transformation in mind. Extension also offers face-to-face workshop sessions, workshop series, and online training sessions on relevant topics, all with an eye towards linking leadership learning to real, challenging tasks to be accomplished.
Target Audience	Current leaders in communities
Website/pages	http://www.extension.umn.edu/community/leadership/

http://www.extension.umn.edu/community/civic-engagement/

Extension's Leadership model: http://www.extension.umn.edu/community/leadership/docs/leadership-model.pdf

Extension's civic engagement model: z.umn.edu.CivE (http://www.extension.umn.edu/community/civic-engagement/engage-citizens-decisions/docs/civic-engagement-ataglance.pdf)

Program Name	**Missouri Community Development Academy**
Program Goals	This professional development experience provides a conceptual base and skills for successfully bringing people (often with diverse views and opinions) together around common issues, helping them learn how to deal collectively with their issues of concern, and giving purposeful direction to their own futures.
Program Topics	Course one: Building communities from the grassroots. Topics covered include: community development, community-based principles and concepts; approaches to understand types of public problems; conflict management, methods of community assessment, building an inclusive community, action planning, leadership development, group process/group dynamics and team building; evaluation and monitoring to understand impact. Courses two and three continue to build on the learning in the first course (topics listed) and also apply the learning through case study review and practice.
Program delivery	Community Development Academy is a series of three courses offered by the University of Missouri Community Development Extension Program. The Community Development Academy is an intensive, experiential, five-day course (for noncredit or for three hours undergraduate or graduate credit), which explores ideas and develops practical skills for effectively involving and empowering local citizens and leaders in community-based efforts.
Target Audience	Citizens and employees involved in process delivery for economic, environmental and community development and in addressing community issues and creating desired future outcomes
Website/pages	http://extension.missouri.edu/cda/home.aspx http://extension.missouri.edu/cda/one.aspx http://extension.missouri.edu/cda/two.aspx

http://extension.missouri.edu/cda/three.aspx

Program Name	**Missouri Watershed Management Planning Workshop**
Program Goals	The Water Quality Education Program empowers citizens to conserve, protect and improve ground and surface water by targeting non-point source pollution prevention through a comprehensive approach to watershed management.
Program Topics	Watershed definition and education; regulations protecting water quality; source management; organizing a local watershed group; nine elements guidance; web-based resources for plan development.
Program delivery	In-person, two-day conference
Target Audience	Local citizens, regional planning commissions, and agency partners involved in community/watershed management planning
Website/pages	http://fsb.missouri.edu/extension/waterquality

Program Name	**Iowa Leadership and Performance-based Watershed Management**
Program Goals	Leadership development for water-related
Program Activities	The Watershed Group Development Guide has six major topic areas; Leadership, Watershed Group Development, Performance-based Environmental Management, Water Quality and Watersheds, Water Quality, Strategies for Teaching, and Topics of Interest. The topics can be utilized separately, or as a complete curriculum, according to the skill sets and information needs of the participants. Modules 4 and 16 have been included as topics of interest; other related topics could be substituted according to the interests of the group.
Program delivery	Online Guide
Target Audience	Individuals and organizations interested in water-related issues, who may form a watershed group.

Website/pages	http://www.soc.iastate.edu/extension/watershed/modules.html (with several subordinate pages for the modules)
	http://www.soc.iastate.edu/extension/watershed/PM1869.pdf

Program Name	**Leadership Wisconsin (not watershed-specific)**
Program goals	The goal of the innovative Leadership Wisconsin program is to develop leaders to strengthen communities. The program consists of an orientation and eleven multi-day seminars conducted throughout the two-year period. Training visionary, yet pragmatic leaders who are motivated to face the needs of their communities and organizations through civil dialogue and inclusive solutions.
Program Activities	Topics covered include: building community: growing diverse networks, collaborations and connections; encouraging Learning: achieving personal growth and professional development; fostering understanding: respecting diverse points-of-view; broadening the sense of community; and experiencing and applying a global perspective; acting with integrity: enabling personal and professional development based on ethical behavior, demonstrating a commitment to excellence, and accepting the challenge to act.
Program delivery	Two-year hands-on leadership development experience that takes leaders out of the traditional classroom and exposes them to people, places, ideas, and issues they might not otherwise encounter. Orientation, skill-building, and issue-exploration seminars throughout the state, a 4-day State Policy Seminar, a 1-week National Policy Seminar, a 1-week U.S. Seminar, and a 2-week International Seminar.
Target Audience	Aspiring leaders throughout the state
Website/pages	http://leadershipwisconsin.org/ Intended outcomes: http://leadershipwisconsin.org/signature-program/impact/ http://leadershipwisconsin.org/other-programming/the-l-e-a-d-trek/

Program Name	**Wisconsin Lake Leaders Institute**
Description	Three, two-day seminars. The Lake Leaders institute assists citizens in developing and enhancing both their technical and people skills, to enrich their communities and the waters within them. Participants learn in an atmosphere of openness, trust, friendship and camaraderie. Enhancing Wisconsin's lake resources through education, leadership and

	citizen action. Enhance skills and broaden capabilities of people in our lake communities, champion effective and communicative collaboration, and foster responsive and useful networks that support lake citizens. Leadership development, enhancing technical and people skills, with training and civic engagement.
Program Goals	Stewardship for Wisconsin's lakes
Program Activities	The Lake Leaders Institute assists citizens in developing and enhancing both their technical and people skills, to enrich their communities and the waters within them. Participants learn in an atmosphere of openness, trust, friendship and camaraderie. Seminar I Society and Environment: Philosophy and Ethics of Lake Management Seminar II Aquatic Ecology and Watershed Management: Impact of Development on Lakes Seminar III Organizations, People, Politics
Program delivery	2-day seminars held around the state
Target Audience	Anyone with an interest in lakes. Past participants have included lake association members, county land and water conservations staff, elected officials, hired lake staff, etc.
Website/pages	http://www.uwsp.edu/cnr-ap/uwexlakes/pages/programs/lakeleaders/default.aspx http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/lakeleaders/LLbrochure-web.pdf
Program /sponsor	UW Extension & WDNR; local people in communities near lakes

Based on the initial scan coupled with the literature review, the researcher developed eighteen collaboration and civic engagement-related topics that are potentially important for inclusion in water-related education and training. A survey was created and sent to partners in the project to determine which of the eighteen topics were covered in their training. The survey featured a scale for respondents (1 = not addressed in our training; 2 = there is only brief mention of this topic; 3 = we do cover this topic but it is not a major focus; 4 = this topic is a major focus of the program) to indicate the extent to which the topic is—or is not—covered. After receiving the results, the researched identified examples from training programs that address each of the potential collaboration and civic engagement topics. There were a total of eight responses.

Q	Topic: Stakeholder Engagement & Collaboration	Mean	Range	Program Examples
1	Engaging a diversity of stakeholders based on educational level, socio-economic status and other demographics	2.7	2-3	Missouri Community Development Academy, course 1: Community Inclusion integrates assessment principles to look at involvement of various groups, specifically those often marginalized. Note: none of the water-specific training responses rated this a "4" Ohio Watershed Academy Topic 2 Using Social Indicators: module addresses the importance of understanding differences in social context, awareness, attitudes, capacities, constraints, and behaviors of target audiences relating to watershed education
2	Seeking stakeholder diversity in group composition: government/agency, environmental activists, leisure, tourism/economic, industry/farming, cultural, and others	2.9	2-3	Iowa Module 2: Identify key landowners and managers that live in the watershed; people that live, work, or have strong interest in the land and water resources in a watershed have potential to become watershed leaders. Ohio Watershed Academy Topic 1 Module on Stakeholder Involvement: building knowledge about stakeholder involvement and also on sustaining involvement.
3	Recognizing and valuing diverse skills sets that participants bring to the group	3	1-4	Minnesota course readings on the importance of stakeholder involvement: public participation is the involvement of people in a problem-solving or decision-making process that may interest or affect them.

				Indiana Watershed Leadership Academy Required Module: R2 on stakeholder involvement
4	Ensuring that stakeholders who perceive they are affected are represented in the collaboration; recognizing stakeholders have different motivations for getting involved	2.9	2-4	Minnesota course readings on the importance of stakeholder involvement: Engaging the public as decisions are made leads to informed decision-making and stronger solutions to problems. Engaging the public has multiple benefits and is worth the investment of government, community groups and organizations who work for the common good. Iowa Module 3: addresses developing citizen-led watershed councils; recognizes the importance of citizen-farmer collaborations
5	Balancing scientific experts' knowledge with normative knowledge of stakeholders in the geographic region	3.3	2-4	Indiana Watershed Leadership Academy Required Module R2: on stakeholder involvement Iowa Module 14 – Building a Watershed Team: specifically addresses integrating science with stakeholders' views (such as farmers and land owners) through a team process and recognizes that people see the issues differently and views must be considered and the structure the group adopts must a civic structure that connects different worldviews for shared problem solving.
6	Organizing a democratic process for stakeholder engagement, decision making and assessing outcomes	2.9	1-4	Minnesota Watershed Specialist training week 6: readings on that state civic engagement adheres to democratic principles. U.S. culture and society embrace the notion that people have the right to influence what affects them. Paying attention to the public's ideas, values and issues results in more responsive and democratic governance; session includes writing a plan for developing civic engagement skills.

7	Recognizing power dynamics within a collaborative group; allowing all stakeholders a voice and equal consideration in the decision-making process; fostering respect for all participants	2.7	2-4	Missouri Community Development Academy, course 1: establishes the characteristics and types of problems found in public issues and introduces the role of deliberative dialogue to address issues.
8	Facilitating communication between scientists and non-scientist stakeholders to make sure plans are technically sound without over riding normative beliefs and values.	3	2-4	Iowa Watershed Module 2: addresses translating information for others in the watershed Indiana Watershed Leadership Academy: A1 on organizing a watershed group and running effective meetings
9	Understanding the history of government involvement in addressing watershed issues and potential impacts on future collaborative efforts	2.9	1-4	Iowa Module 12 on building a culture of conservation addresses the history of conservation in Iowa and is intended to bring a renewed commitment to conservation within the historic context
10	Understanding the difference between top-down versus bottom up decision making and implications for stakeholder buy-in	2.4	1-4	Missouri Community Development Academy Course 1: covers community-based principles and concepts as well as leadership development principles.
11	Understanding alternative leadership/decision making structures and processes for collaboration. What structures/processes work best under what circumstances	2.4	1-4	Minnesota Watershed Specialist Training: addresses the topic of various approaches to leadership, reinforced by readings on civic engagement and democratic process.
12	Building conflict management skills, including facilitating challenging conversations and negotiation	2.7	2-3	Missouri Community Development Academy, course 1: *Dealing with Differences* gives an understanding of the importance of creative conflict and how to deal with that conflict constructively and

#				
				effectively
13	Fostering an environment conducive to critical thinking	2.7	1-4	Michigan Lake and Stream Leaders Institute: specifies developing conflict resolution and communication skills.
				Ohio Watershed Academy Topic 1: building negotiation skills: principles of negotiation (e.g., the difference between interests and positions) and will help build skills by having you prepare for a negotiation. Conflict management is also referenced in Topic 1 Getting Your Watershed Group on Track.
				Missouri Community Development Academy, course 1: Complexity, Polarization and Mindmapping establishes the characteristics and types of problems found in public issues and introduces the role of deliberative dialogue to address issues.
14	Building trust among stakeholders	3.1	2-4	Iowa Module 3: from the activity in module three "If you try to move to the production level without building trust relationships and caring about people, the people in your watershed will feel used rather than partners in addressing water concerns" discussion about leadership traits and building trust.
15	Facilitating collaborative learning as a process for engaging stakeholders (both expert and lay persons) as co-learners in watershed assessment, planning, and decision making.	2.7	1-4	Minnesota Watershed Specialist Training: addresses the topic of various approaches to stakeholder engagement, reinforced by readings on civic engagement and democratic process.
				Wisconsin Lake Leadership Program Seminar 1: society and

				environment, engages participants in the planning process offering time for participants to explore their own leadership, values, and team building exercises; addresses grass roots projects. Seminar 3: Organizations, People, Politics delves into how organizations and individuals work together on watershed issues.
16	Engaging stakeholders in all stages of watershed planning, including problem definition, decision-making, proposing and evaluating solutions, adopting a plan.	3.6	3-4	Ohio Watershed Academy Topic 1 Getting Your Watershed Group on the Right Track: offers information and support for each step of the process on developing a watershed group such as defining the purpose, recruiting, managing volunteers, prioritizing, and managing conflict.
17	Using information technology to facilitate communication and education (e.g., social media, web-pages, e-newsletters)	2.4	1-3	Indiana Watershed elective modules: A3. Web Sites and Online Social Networking: Developing Your Message A4. Effective Outreach Using Social Marketing Strategies Indiana Watershed website: series of videos on water monitoring available to the public
18	Educating stakeholders on how to interpret data and utilize scientific studies to inform decision making.	2.7	1-4	Michigan Lake and Stream Leaders Institute: addresses how to interpret data understand regulations and offers opportunities to apply learning. Wisconsin Lake Leadership Seminar 2: enhances knowledge of lakeshore development and aquatic ecosystems

Appendix B: Partner and Funding Opportunities

Potential partners and funding opportunities

NCRWN Seed Project: Watershed Management: Developing Leadership Capacity in Collaboration and Civic Engagement for Collective Action

Prepared by Jo Latimore. Last updated November 17, 2015.

Two of the key tasks identified during the Chicago meeting were (1) to identify potential collaborators and partners, and (2) to identify potential funding opportunities to support further work on this project. Below is a compilation of initial ideas that began with a brainstorming session (Jo Latimore, Rebecca Power), with a few additions from a brief discussion with the larger group at the end of the meeting. There are surely additional opportunities for collaboration and funding that are not listed here.

(1) Potential additional partners/opportunities for collaboration

- Chicago Botanic Garden
- Trout Unlimited
- The Nature Conservancy
- Environmental Defense Fund
  - Doing a lot of work with agriculture
- North Central Regional Water Network (NCRWN)
  - Communication support
  - Evaluation support
- US Environmental Protection Agency (USEPA)
- Conservation Technology Information Center (CTIC)
  - Focus on agriculture and cultivating leaders
  - Lots of corporate partners
  - Interested in what makes watershed projects successful
- Consider looking at other leadership programs
  - Great Lakes Leadership Academy (Michigan)
  - Leadership Wisconsin
  - Other states' "other" leadership programs (not necessarily water-oriented)
- People involved with water leadership programs not currently at the table
- State's agency leadership development programs
  - e.g. Michigan's "Quality of Life" agencies (Dept. of Natural Resources, Dept. of Environmental Quality, and Dept. of Agriculture and Rural Development) have an internal leadership development program
- Institute for Conservation Leadership

- Programs that are amenable to interstate participation (e.g. online programs)
  - An online directory of this program would be helpful
  - Could include information about their logistics (when, how much, who)
  - Could help us disseminate our outcomes
- Mississippi Watershed Collaborative that Joe knows about (??)
- Sea Grant
- USFS – Kristin Floress
- Iowa Soybean Association – Todd S. that Joe knows??
- Youth-oriented leadership programs (group had some hesitation about engaging with these)
  - E.g., WI – Conservation leadership corps
    - modeled on a Missouri program
    - Supported by National Wildlife Foundation
- North American Lake Management Society
- River Network – we have a rep on our team already
- American Rivers
- NC1190 through NCRWN (needs more details??)

(2) Identifying funding opportunities.

- EPA
  - One RFP recently opened. Gulf Hypoxia related (weaker fit for Michigan).
    - http://www2.epa.gov/sites/production/files/2015-10/documents/owow_rfp_data_management_ag_hypoxia_final_28_october_2015.pdf
    - Another component is NPS ag training and tech assistance
      - Gets into watershed plan implementation
  - EPA Hypoxia Task Force
    - Water Action Hub
      - Facilitate connections between businesses interested in supporting water projects, and people who need support for their projects
      - Facilitated by the Pacific Institute
  - USEPA Region 5
    - Tom Davenport – a big supporter of collaboration human dimensions.
    - With Joe's social indicators project, he orchestrated states kicking in money so the project could be done in their state.
    - An angle might be the guide for "watershed planning handbook" with the 9 elements; match up what we came up with, with the 9 elements

- North Central Regional Center for Rural Development
  - RFP open now for smaller scale support
  - Based at Michigan State University
- North Central SARE (Sustainable Agriculture Research and Education)
  - Fostering farmer engagement
  - http://www.northcentralsare.org/?_ga=1.138193136.1986490606.1446658289
- North Central Cooperative Extension Association (NCCEA)
  - Small grants to support multistate committees (travel etc.)
  - NC1190, etc.
- Foundations
  - Great Lakes Protection Fund
  - McKnight Foundation
  - Walton Family Foundation
  - Gund Foundation (Ohio, Lake Erie)
  - Sloan Foundation
  - Bush Foundation
    - MN based, not limited to Minnesota. Leadership grants.
- USDA-NIFA
  - Potentially – agriculture angle
- Great Lakes Restoration Initiative
- North Central Region Water Network
  - Additional NCRWN funding is possible, especially if we can demonstrate solid progress and that we are seeking funding from other sources too.
- National Fish and Wildlife Foundation
- Trout Unlimited
- Businesses with a focus on water
  - Coca-Cola
  - Cabela's
  - Miller-Coors
  -
- Utilities
  - Some provide funding for water-oriented programs, especially if involved with hydropower or water resource mitigation
- Association of Leadership Educators
- Midwest Glacial Lakes Fish Habitat Partnership

- Some growers' associations might be interested in funding these efforts

Appendix C: Project Team