Surviving and thriving:

What makes watershed stakeholder groups successful in implementation?

Report to Texas Commission on Environmental Quality Contract No. 582-16-60422 Work Order 4 (PCR 61154)

Prepared by Center for Public Policy Dispute Resolution The University of Texas School of Law August 29, 2016

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Report to Texas Commission on Environmental Quality Prepared by Suzanne Schwartz¹ Center Public Policy Dispute Resolution The University of Texas School of Law

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Purpose of this paper

This paper seeks to understand, through a literature review, factors that lead a collaborative stakeholder group to successfully implement plans they have developed to meet Total Maximum Daily Load (TMDL) standards. The paper will not explore factors leading to success either in formation of these groups or in development of their plans, except to the extent such factors are linked to successful implementation. It also will not explore whether implementation by watershed partnerships improves the environment or the socioeconomic conditions in watersheds. Rather, the paper's focus is on what makes these group remain viable and able to implement their plans. The focus, to the extent possible, will be on partnerships that manage shared natural resources where regulatory programs (command and control) are not the main drivers of implementation.

Executive summary

The research on what influences successful implementation by collaborative watershed partnerships yields some general conclusions that are noted by category below. Research tends to be most consistent about a group's need for time, a good agreement, funding and leadership, and provides somewhat more divergence on other factors.

Time. The need for time may be something both the groups themselves and the agencies supporting them must accept — even the most aggressive steps to improve

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water quality may require years before they bear fruit. Yet, time also can be an impediment, leading to burnout and fatigue and creating other problems that can cripple a group. Fortunately, steps can be taken to make watershed partnerships sustainable to carry them forward over the timeline needed to realize water quality improvements.

A good agreement. A good agreement on which to base implementation forms a needed foundation for groups at the implementation stage. Some of the elements of a good agreement are discussed in this paper, including participants' acceptance of the agreement and measureable goals.

Funding. Adequate funding is vital to these partnerships. While many groups are funded through their planning stages, especially in the TMDL arena, many are left to search for funding to support both the group's infrastructure and its projects during the implementation phase. However, when a group is forced to focus a significant amount of its efforts on a search for funding, it is robbed of manpower to conduct its projects. Without clear evidence of progress on the plan, stakeholders may find the rewards/benefits of the group outweighed by the costs of sustaining it, leading to membership attrition and a problematic cycle of group failure. Some groups find their chase for funds leads them to projects and goals that do not support their original plan, again leading to confusion and problems with keeping members engaged. Groups should include a broad group of members to leverage their access to funding and resources, and also should consider funding or providing a facilitator/watershed coordinator who can focus on obtaining funding, thus taking the burden off what may be a largely volunteer group.

Leadership and facilitation. Leadership is important for the internal work the group must do to implement its plan, and also for the external tasks of building networks to secure the funding and political/ community support essential for the plan to succeed. Leadership can take many forms, including leadership from a facilitator/coordinator. Research is fairly aligned about the need for a group to have a facilitator or coordinator, which generally is hired, but also can be provided by a member organization, or can sometimes come from within the group's own membership.² Groups also must be prepared for turnover of leaders and other key

² Some groups recruit one of their members to serve as a facilitator, or may rotate the facilitator role among members. The disadvantages of this are that such facilitators may not be perceived as neutral. If a group member does, indeed, act in a neutral role, their substantive input to the group may be lost. It also may involve a significant amount of the person's time. Such an arrangement is best employed by more mature groups.

members by, among other things, developing institutional memory and creating redundancy in leadership and membership.

Group membership. Because collaborative water partnerships generally do not have the regulatory power to implement their plans, they derive their legitimacy and ability to implement from the extent that they represent the populace that can effect implementation (including political entities, other organizations and the citizen interests). A diversity of stakeholders, along with influential stakeholders, can broaden the group's knowledge base and its access to networks of funding, resources and power. Successful implementation is additionally enhanced by involving governmental entities, and by seeking members who are creative, cooperative, committed, believe in the process and receptive to new information. Keeping members actively involved presents a challenge to groups, which may be addressed in part by recruiting participants who already are politically active, those comfortable with sharing opinions, and those with knowledge of the watershed (which may be fostered through the group's continued education of the public for future recruitment efforts).

Trust and social capital. Trust and social capital are often found to be central for forging a good agreement; the research on their importance in implementation is less clear. However, there is sufficient research to suggest that these factors cannot be ignored. At a minimum, the social capital factor (reciprocity and social networks) can address challenges of scale that many groups face, as well as building alliances and networks for resources.

Scope of activities, clear goals and measureable results. The geographic scope of a group's activities can impact success. The desirability of a broad versus narrow geographic scope is not entirely clear, however, and should be carefully considered based on the individual situation. A larger geographic scope can build regional collaboration and tie efforts together. Yet, many researchers suggest that such broadness may create problems of communication, of keeping participants engaged during times that issues do not focus on their concerns, and of fatigue from travel. While some geographically large groups found success by forming smaller groups, such subdivision can create problems of its own. Regardless of geographic scope, many researchers suggest having a group start with small projects to build momentum to incentivize continued stakeholder involvement. Clear goals also are important, and groups may find concepts such as involving external scientific experts in goal setting and monitoring helps build support for a group's efforts.

Agency support and scientific/technical information. Active involvement of skilled agency staff, as well as elected officials and agency heads, can enhance a group's success at implementation, providing both needed information and also authority and legitimacy. However, groups formed by and operating in partnership with agencies must clearly understand their level of authority and the agencies' goals and expectations, or risk frustrating and losing participants. Agencies often provide information for use by watershed partnerships, a crucial and important intersection. Groups also may have access to information that will benefit agencies. Governmental entities at all levels and watershed partnerships can leverage their intersection on technical exchange to the benefit of both sides. Access and unimpaired sharing of trusted information among group members, and between agencies and group members, helps keep participants active.

Effective communication and data sharing. Successful watershed partnerships embrace open communication and transparency regarding information and data both among members and with the public. Such communication garners support for the group's work and keeps its members actively involved. Groups should develop good methods that institutionalize communication. They can use communication and education externally both to grow group membership and to engage the broader community in implementation projects (that may need citizen volunteers or support), and to overcome resistance from powerful interests.

Institutional structure and process. How groups are organized and the processes by which they operate influence their success at several levels. The choices of approach should be tailored to the participants and their situation. Flexibility to switch structure as a group's needs morph also should be paramount. Whether a group will benefit from a more formal or informal structure is influenced by its size, its scope, how it can best leverage power in its implementation, and what will provide the lowest transaction costs while providing the most chance of success (a cost/benefit analysis that may influence how willing participants are to continue with a group). Formality also influences a group's ability to weather leadership and membership change, as does institutional memory. Procedures that can lower the transaction costs of the group include formalizing decision tools, choice of meeting arrangements, and working with other groups that may have common goals. The method for reaching agreement (e.g. consensus or other decision rule) and for coordinating among the many groups involved in its implementation also will influence a group's success.

What are watershed partnerships?

Whether initiated by federal, state, or municipal government, or whether arising more organically through the voluntary efforts of interested citizens, collaborative watershed partnerships (referred to in this paper as "collaborative watershed partnerships," or "watershed partnerships") seek to evaluate the health of local water bodies, identify areas of concern, and create and implement plans to improve water quality. The literature describes collaborative watershed partnerships as informal groups with a long term focus, lasting five to ten years or longer, involving a wide variety of governmental and nongovernmental stakeholders, primarily selfdirected and locally focused, and formed to address issues in watershed management. Their activities include developing and implementing watershed management plans through restoration projects, changes in land use practices, and water quality regulations. The partnerships themselves historically have had no to little legal or political authority to implement such activities, but rely on members and members' entities for implementation (Sabatier et al. 2005; Koontz & Newig 2014, 417, 420; Leach and Pelkey 2001, 380). They normally operate outside of traditional governmental processes or forums, often in situations where neither state regulation nor direct state action can effect watershed cleanup efforts, and typically rely on collaborative mechanisms of group interaction such as identifying common issues, sharing information and perspectives, open debate, creativity in problem and solution definition, consensus decision-making, and voluntary action (20 Leach and Pelkey 2001, 380).

<u>Texas' nonpoint source watershed partnership programs</u>. Specifically of interest to the Texas Commission on Environmental Quality (TCEQ) are collaborative watershed partnerships that implement nonpoint source pollution control efforts. While the research in this paper is not limited to such groups, it is useful to understand these stakeholder groups and the programs under which they operate, in order to have a frame for how the research noted herein might be relevant.

Under the Federal Clean Water Act (33 U.S.C. Sections 1251 et seq.), all states must develop programs to protect the water quality of their watercourses from adverse impacts of nonpoint source (NPS) water pollution.³ Texas' strategy for addressing

³ NPS pollution is all water pollution not from regulated point sources. Point sources include wastewater treatment plants, municipal stormwater systems, and concentrated animal feedlot operations. NPS pollution includes rainfall runoff flowing over land and manmade features, including: fertilizers, herbicides and insecticides from agricultural and residential areas; oil, grease, and toxic chemicals from spills, roads, urban areas and energy production; sediment from construction sites, crop and forest lands and eroding stream banks; and bacteria and nutrients from livestock, pet wastes, wildlife and leaking septic systems.

NPS in found in *Texas NPS Management Program*,⁴ which is updated every five years. Texas' NPS program is administered jointly by the TCEQ and the Texas State Soil and Water Conservation Board (TSSWCB). TCEQ has "general jurisdiction and primary responsibility over Texas' water quality program," including water quality management planning, point-source permitting, NPS abatement from sources other than from agricultural and silvicultural sources, and water quality enforcement.⁵ TCEQ establishes water quality standards for waters of the state (Texas Water Code, Secs. 5.013, 26.0136). TSSWCB leads Texas' programs for preventing and abating agricultural and silvicultural NPS pollution (Texas Agriculture Code, Sec. 201.026).

The research will inform two main programs that include stakeholder involvement.

- <u>TMDL program</u>. Under the federal Clean Water Act, TCEQ identifies water bodies that are "not expected to meet water quality standards and not supporting their designated uses."⁶ TCEQ submits a list of impaired bodies of water to EPA every two years, and then establishes and submits for EPA approval TMDLs for impaired bodies. TMDLs describe the amount of pollutants the watercourse can assimilate and still meet water quality standards, and sets pollution reduction goals. They allocate pollutant load levels between point source and NPS pollutants. After or in conjunction with TMDL development, stakeholders develop an implementation plan (I-Plan) to allow the selected watersheds to meet water quality standards. An I-Plan specifies limits for point-source discharge, and management measures to address NPS pollution.⁷
- Watershed Protection Plans (WPP). This program provides a framework for water quality protection and restoration strategies and encourages stakeholders to address the sources and causes of impairments and threats to both surface and groundwater. WPPs may be used to protect unimpaired waters and/or to restore impaired waters. WPPs must be consistent with any TMDLs and I-Plans developed for the watershed.⁸

⁴ https://www.tsswcb.texas.gov/en/managementprogram#reports

⁵ Memorandum of Agreement Between the Texas Commission on Environmental Quality and the Texas State Soil and Water Conservation Board Regarding Total Maximum Daily Loads, Implementation Plans, and Watershed Protection Plan. September 27, 2006. (MOA).

⁶ MOA at 1.

⁷ MOA at 1.

⁸ MOA at 2.

Both programs stress stakeholder involvement in developing and implementing the I-Plans and WPPs,⁹ and may provide both state funds and federal Clean Water Act Sec. 319(h) grants for portions of the stakeholder efforts. These collaborative approaches are particularly appropriate to deal with NPS pollution control, which "perplexes command-and-control institutions" (Lubell et al. 2005, 290). Other state agencies and programs also support these efforts.¹⁰

How to measure success

Collaborative watershed groups generally form for four purposes: (1) to build understanding; (2) to make and build support for wise decisions; (3) to "get work done;" and (4) to "develop agencies, organizations and communities" (Antuma et al. 2014, 4). The purpose of the group's formation should dictate how success is measured. Researchers often measure success to be whether a watershed partnership has reached agreement – an appropriate measure when a group's efforts end with forging an agreement. However, if a partnership is organized to both develop and implement a plan, coming to agreement is but one measurement of success.

The literature that focuses on the implementation phase of partnerships for watershed and natural resource management is oddly sparse (Leach and Sabatier 2005, 278, 283-84). Recommendations for best practices often are geared toward fostering cooperation between stakeholders to ensure that planned action steps are decided upon as a group and made legitimate by fair procedures and consensus. In many studies, researchers fail to make a distinction between the planning and implementation phases of a project; their recommendations may well apply to both. Thomas M. Koontz and Jens Newig have commented on the dearth of research focusing on implementation:

While many individual cases of collaboration have been described, including attempts to explain levels of various kinds of success related to group processes and outputs, less research has systematically analyzed the link from collaborative plans to actions that implement those plans. Less is known about whether and how collaboration affects

¹⁰ Texas Water Resources Institute (Watershed Planning Short Course and facilitation of Roundtables), and Texas A&M Agrilife Extension Service (Texas Watershed Steward Program).

⁹ The U.S. Environmental Protection Agency encourages state agencies and watershed partnerships to develop TMDLs. (Sabatier, Weible and Ficker 2005, 46).

implementation of the collectively developed recommended actions (Koontz and Newig 2014, 417).

The focus in watershed partnership literature on formation and planning steps may have to do with the relative youth of collaborative management as a practice: after all, it takes time to move from the planning and organizational stages into implementation, and then to see actual results in the environment.

Measuring the efficacy of watershed partnerships at the implementation stage also is complicated by several factors: (1) defining criteria to measure success and accomplishments of the partnerships; (2) linking improvements to the work of partnerships; and (3) determining what to evaluate (Genskow and Born 2009, 57-58; McDermott, Moote and Danks 2011, 82-83).

(1) Defining criteria to measure success and accomplishments of the partnership is hindered because environmental changes often are measured in decades, far exceeding the life span of most partnerships. Absent the ability to measure long-term environmental outcomes, researchers often use intermediate actions to create and measure success (e.g. education, technical assistance and incentives, scientific studies and monitoring, and regulatory code development). Other measures of success can include outputs such as the number of restoration projects, land preservation, land/aquatic management practices, pollution abatement efforts, measurements of social outputs and contextual changes,¹¹ and participants' assessment of progress by groups and the subsequent development of adaptive methods to improve the program (Genskow and Born 2009, 57-58; McDermott, Moote and Danks 2011, 82-83; Genskow and Wood 2011, 911; Leach, Pelkey and Sabatier 2002, 666; Hardy and Koontz 2014, 85).

(2) Linking improvements to the work of the partnership. It is difficult to actually link whether any measured environmental improvements are the result of the partnership's work: such improvements might be the results of other variables

¹¹ Such as changes in attitudinal data, capacity building networks, community awareness and communication) Bonnell and Koontz (2007, 164) suggest that defining successful ecosystem management to include changes in human institutions (e.g. trusting relationships) as precursors of environmental change might have prevented frustration at the Little Miami River Partnership's lack of measureable outcomes, noting that the success of the Little Miami River Partnership might even be measured by the continued existence of organization.

¹² However, participants view success in varying ways, and multiple goals of such groups can impact participants' levels of satisfaction.

such as increased flow, or actions of other entities (Genskow and Born 2009, 58; Leach and Sabatier 2005, 57-58).

(3) Determining what to evaluate, including defining the partnerships, and addressing factors of partnership age, longevity or maturity. Many studies focus only on mature or long-term groups, and lose the "contextual richness of the changing institutional setting" and the dynamic and changing forms the collaborative efforts may take over time (Genskow and Born 2009, 58). Because partnerships often spawn new partnership efforts over time, researchers must look beyond individual bodies, and incorporate "key individuals, previous partnership incarnations, and the social capital developed or diminished by related and previous efforts" (Genskow and Born 2009, 62) to effectively evaluate success.

What does continued existence or demise mean? Because this paper examines factors that make watershed partnerships sustainable/successful during the implementation phase, one assumed precursor to success must be examined: that the partnership continues to exist. By definition watershed partnerships often are intended to last for a fairly long term, with issues changing over time (Leach and Sabatier 2005, 233). However, practitioners and researchers alike must be careful to parse existence over time from effectiveness. Just because a group outlives its initial funding and weathers membership turnover does not mean it takes actions to actually improve water quality or to advance any of the other measures noted above. Nor does the demise of a group mean its work has not been effective; members in its networks may, more effectively, take on the initial task, or the group may morph into some other form that undertakes implementation. Lubell et al. (2005, 286-87) ask if survival of a watershed partnership is itself a worthwhile goal. They answer that, to the extent these partnerships foster social capital, the initial answer might be yes. Survival also assures that partnerships are in place to respond to emerging watershed problems. However, if watershed problems can be handled by existing institutions that stakeholders trust, it may not be necessary to maintain such stakeholder groups.

With these cautions about how to measure success and not judging existence or demise as inherent indicators of success or failure, this paper will assume that unless another institution takes over the role of implementation, the continued existence of the watershed partnership is desirable. Researchers have studied a variety of resource management partnerships to get a sense for why some groups are effective, and why some disband or became less engaged after the planning process. The answers are varied, but in a survey of a decade of empirical literature published in 2001 by Leach and Pelkey, several themes emerge, which will be

outlined below, and then discussed in terms of research published after the Leach and Pelkey study.

An overview of a decade of watershed partnerships

In 2001 William Leach and Neil Pelkey compiled empirical research studies on watershed partnerships conducted between 1990 and 1999 to identify themes and factors impacting success. The partnerships had been in existence from one to 30 years.¹³ In gathering the results, Leach and Pelkey did not distinguish between implementation and planning as measures of success. The studies they reviewed defined success in one of two ways: (1) adopting and/or implementing watershed plans, projects or policies and impacts on environmental and socioeconomic indicators; or (2) more interim indicators of success such as trust building, conflict resolution, satisfying stakeholders, and strengthening organizational capacity (Leach and Pelkey 2001, 380). The authors also stress that in considering the results of their study, practitioners should not be lulled into trying to find a onesize-fits-all model for success, noting the importance of local circumstances in designing an appropriate structure and process for partnerships, and cautioning that the nuance of the original studies they compile is lost in the report's synthesis (Leach and Pelkey 2001, 381-83).¹⁴ Nonetheless this compilation yields some useful conclusions.

Leach and Pelkey identified 28 themes that accounted for success of the groups. Figure 1 from the Leach and Pelkey study, which summarizes these results, is reproduced here. Two themes were cited most frequently as important to success: funding (cited in 23/62% of the studies) and the presence of an effective leader, coordinator or facilitator (cited in 22/59% of the studies), with no studies contradicting either conclusion. Three other themes ranking highly and without contradicting conclusions are creative, cooperative or committed individuals (16/43% of studies), trust (16/43% of studies), and support and participation by

¹³ The studies met the following requirements: (1) they were either in-depth case analyses, quantitative comparisons of partnerships, or surveys of stakeholders from multiple partnerships; and (2) they were analytical, drawing conclusions from the data (Leach and Pelkey 2001, 380).
¹⁴ The theme that local circumstances strongly impact the appropriate structure and success of partnerships is echoed in other literature, such as Koontz and Newig (2014, 436). Similarly, Hardy & Koontz (2010, 87) note that differences in community attributes, biophysical setting, environmental problems and institutional rules can impact what tools are best to employ in successful watershed partnerships. That study looked at an urban and rural watershed partnership in Ohio, which differed in their missions (compliance with stormwater regulations and reduction of flooding v. preservation of a healthy watershed), and in their community and institutional attributes. Both developed successful plans, and were succeeding in implementation despite different modes of operation.

	5	10	15	20	25
Funding					
Effective coordinator or facilitator					
Scope of activities: limited or focused					
Broad or inclusive membership					
Cooperative & committed participants					
Trust					
Low or medium levels of conflict					
Agency staff support and participation					
Well-defined decision or process rules					
Adequate scientific & technical info.					
Consensus decision-making					
Adequate time					
Effective communication, data sharing					
Legislature aids agency participation					
Appropriate geographic scope					
Monitoring or adaptive management					
Local, bottom-up leadership					
Training in collaborative processes					
Agencies encourage staff participation					
Community resources					
Formal enforcement mechanisms					
Fig. 1. Number of Studies (n= 37) That A	ffirm (Solid S	shading) or c	ontradict (D	iagonal) the	2
Importance of Each Theme. (From Making Literature, William D. Leach & Neil W. Pelkey, Jo	g Watershed Pa urnal of Water	rtnerships Work Resources Plann	c A Review of iing and Manag	the Empirical gement,	

state or federal technical staff (13/35% of studies). Other themes were more contested within the studied literature.

Two themes showed up as important in 16 (43%) studies, but had significant numbers of studies showing contrary findings: limited scope of activities, but with six contrary studies; and broad or inclusive rules for membership or encouraging diversity, but with eight studies finding diverse membership created problems. Fourteen studies (37.8%) found that starting off with a low or medial level of conflict between participants was important to success, but two others suggested that partnerships could resolve high levels of conflict. Twelve (32.4%) found that well-defined decision or process rules were important, but were contradicted by three studies showing that process flexibility was advantageous. Adequate scientific and technical information was important in 11 (29.7%) studies, with none contrary. Ten studies found that consensus decision-making was important, but two studies noted that a consensus requirement could paralyze the group (Leach and Pelkey 2001, 381).

Leach and Pelkey (2001, 382-83) employed factor analysis to determine unobserved variables that might be responsible for patterns in the results, reducing them to four factors accounting for 95 percent of the variance in the 28 themes. These four factors are:

- 1) balancing the partnership's resources and the scope of its activities;
- 2) employing flexible and informal partnership structure;
- funding plus alternative dispute resolution themes, such as effective leadership and facilitation, trust, a manageable number of attainable goals, consensus decision-making, well defined decision or process rules, effective communication, inclusive membership; and
- 4) themes consistent with the Institutional Analysis and Development (IAD) framework,¹⁵ such as monitoring/adaptive management, bottom-up leadership, well-defined decision and process rules to assure a fair and transparent process, adequate scientific and technical information.

Based on this research, the authors conclude that in allocating their limited resources, partnerships should (1) hire a skilled facilitator or coordinator, and (2) promote the development of trust between participants through neutral facilitators, clear process rules and open sharing of information (Leach and Pelkey 2001, 383).

This paper picks up where the Leach and Pelkey research left off. It offers a collection of published watershed research conducted post-1999 to outline and discuss the factors that researchers have deemed crucial for watershed partnerships to survive past the planning stages and to take steps to actively implement their plans. The paper generally follows the themes identified by Leach and Pelkey, but does not attempt to utilize the rigorous statistical analysis of that study. Many of the themes Leach and Pelkey identified have reappeared in, and been reaffirmed by, subsequent research as impacting the success of groups at the implementation phase.¹⁶

¹⁵ IAD "uses a 'rational actor' model of collective action to explain why, in some communities, most individuals are able to overcome the temptation to free ride while successfully managing common-property resources... without coercion from outside authorities" (Leach and Pelkey 2001, 383).
¹⁶ All future studies which are used in this paper evaluated the success of groups involved in implementation, although some studies included groups both at the planning and implementation stages.

A general overview: What hinders and enables implementation success?

The story of Wisconsin's attempt to focus its natural resources management along a river basin model, with strong interaction and input from stakeholders, also provides an interesting starting point to think about watershed partnership success. In 1996, the Wisconsin Department of Natural Resources reorganized, driven by a goal to more effectively manage natural resources by an "ecosystem, collaborative, and community-based approach." The agency moved to align agency program administration with boundaries that aligned closely with Wisconsin's river basin boundaries. In addition to management changes, the agency formed stakeholder groups along these management boundaries to provide for integrated and ecosystem-based basin management, with the intent that these groups would produce results and become self-sustaining. A study ten years after stakeholder group formation — when the agency had moved away from the partnerships showed that half the groups had already disbanded. Those no longer in operation were unfocused in their mandate, dependent on the agency for leadership, and often could not overcome issues of scale – that is, implementing improvements on a wide stretch of territory. Moreover, ten percent of those formed never survived past the planning stages (Genskow 2008, 411-415).

So why did so many of these groups disband? In this case, as in many, it had much to do with resources. Indeed, group success often depends on factors that fall into three often overlapping categories: access to resources, external support, and internal collaborative structure or capacities (McDermott, Moote and Danks 2011, 84). Watershed partnerships often face internal obstacles that hinder effective implementation, including lack of clarity or differing expectations and goals, representation that is narrow or unbalanced, lack of mutual respect among participants or their unwillingness to compromise or take risks, and organizational structure (McDermott, Moote and Danks 2011, 83). Yet if the groups succeed in overcoming these obstacles, they often are stopped from implementing agreements by barriers external to them, and seemingly "beyond their reach" (McDermott, Moote and Danks 2011, 83). A three-phase study of literature, practitioners and collaborative participants¹⁷ developed a picture of external obstacles to success and

¹⁷ The authors analyzed 30 multi-case empirical comparative studies, conducted interviews to capture "current practitioner knowledge" not yet in the literature, and conducted interviews of participants in seven cases that had been successful in overcoming obstacles (McDermott, Moote and Danks 2011, 82).

strategies to overcome them,¹⁸ and is summarized here and in Appendix A, and discussed in more detail throughout this paper.

Community Based Collaboratives:						
Overcoming External Barriers to Implementation						
External barriers/obstacles	Strategies to overcome obstacles					
 Obstructive laws, regulations Agency capacity, culture Lack of financial and human resources Resistance from powerful parties Lack of authority and legitimacy Large scale political-economic factors 	 Linking people effectively Involve influential/diverse stakeholders Build alliance and networks Build trust and mutual respect Strong leaders & champions Bringing in new resources Expand knowledge base Educate agencies Get public support Pool funds and human resources Transforming ground rules Change law and policies Accountability mechanisms Formalizing and institutionalizing 					
	 Staying focused and flexible Staying unstructured and ad hoc Fly under the radar Focus on projects, demonstration projects 					
Summarized from McDermott, Moote, Danks, "Effective Collaboration: Overcoming External Obstacle." 2011, In						
Dukes et al. (eds.), Community-Based Collaboration: Bridging Socio-ecological Research and Practice.						
Charlottesville & London: University of V	irginia Press.					

Collaborative watershed partnerships clearly face many hurdles, including the ever present challenge of collaborative fatigue, changing circumstances, and time constraints (Antuma et al. 2014, 77-79).

Time

Time tends to loom large as an essential element to watershed partnership success, with one study identifying partnership age being among three factors (along with funding and strong agreements) that are most important to implementing watershed restoration projects (Leach and Sabatier 2005, 250). In a study of 44 watershed partnerships in California and Washington, Leach and Sabatier note that stakeholder partnerships often take four years to achieve agreements and to implement projects. Only three of nine partnerships younger than two years of age had reached limited agreement, none had adopted a comprehensive management

¹⁸ The authors related their strategies to what they characterize as the literature's success-enabling factors of external support, access to resources, and internal collaborative structure or capacities McDermott, Moote and Danks 2011, 84).

plan, one had implemented restoration projects, and none had conducted monitoring. The 11 partnerships older than five years were much more successful, with more than half having a comprehensive plan, and all but one having at least one project¹⁹ (Leach, Pelkey and Sabatier 2002, 645, 662). These authors conclude that four to six years may be needed to "overcome distrust, reach agreements, secure funding, and begin implementing" (Leach, Pelkey and Sabatier 2002, 666). The same study found that stakeholders perception of their group's effects on watershed conditions and on human and social capital improve with age of the partnership, with those older than 6 years having significantly higher perceptions of effects than younger partnerships (Leach, Pelkey and Sabatier 2002, 659).

High quality agreement

A precursor to implementation is an agreement on what to implement. In Texas, stakeholder groups develop either Implementation Plans or Watershed Protection Plans to guide pollutant reduction, and then are charged with implementation of those plans. Agreement on what projects to pursue was found to be one of three factors most important to implementation of restoration projects in a quantitative study of 76 watershed partnerships in Washington and California (Leach and Sabatier 2005, 250). In discussing collaborative regional growth implementation, Margerum (2002, 189-90) discusses the importance of a high quality agreement: one which includes clear goals, a sound theory about intervention, integration of the plan's objectives with a range of other policy objectives and issues (e.g. economic development), and understanding of and support from stakeholders and the public.

Funding

Legislatures and state agencies have been active in the proliferation of watershed partnerships over the past decade. In Texas, the Pacific Northwest, Wisconsin and other states, federal agencies, state agencies and lawmakers, and local governments have been allocating funds for the formation of watershed-related collaborative partnerships. The form these entities take and their relationship to governmental entities vary. Regardless of the groups' structure, it has been common practice that once their initial seed money runs out, partnerships must raise funds independently for their continued organizational and project expenses. Groups that form without government prompting or support may not even have access to that initial influx of

¹⁹ However, the authors note the success rate for these older partnerships may be because failing partnerships have dissolved (Leach, Pelkey and Sabatier 2002, 662).

funds. Groups are thus constantly working with limited resources, and their ability to manage with limited funds has an impact on their success.

Adequate funding was one of two most frequently cited keys to success in the Leach and Pelkey 2001 study of partnership success. Balancing between a partnership's available resources and the scope of its activities (accounting for 24% of observed variance) is cited as one of the four factors important for successful watershed partnerships (Leach and Pelkey 2001, 382-83). In later research on partnerships in Washington State and California, Leach and Sabatier found that funding was among the three most significant factors predicting whether groups actually implemented their plans²⁰ (Leach and Sabatier 2005, 250-53). In a literature review of 30 multicase comparative studies, access to resources was noted as one of three main forces enabling success of community-based collaboratives, and lack of financial and human resources was listed as one of six external barriers to their success (McDermott, Moote and Danks 2011, 84). A case study of partnerships in Germany and Ohio identified three different but overlapping factors affecting implementation. Once again, resources — this time defined specifically as both funding and the presence of a full-time coordinator — featured prominently, alongside the involvement of willing landowners and the presence of robust social networks (Koontz and Newig 2014, 420-21). A study of 304 watershed partnerships in three northwestern states found one of the most needed resources expressed by watershed groups, and hence an opportunity to expand agency-watershed partnerships, is sustained operational funding and funding for projects (Chaffin et al. 2014, 65-66).

Successful groups are able to find alternative sources of funding. As noted earlier, the Wisconsin Department of Natural Resources formed stakeholder groups with the intent that they would produce results and become self-sustaining. Ten years later, after the agency moved away from the partnerships both in terms of funding and staff support, half the groups had already disbanded. Yet some remained. Two successful groups, the Rock River Coalition and the Root-Pike Basin group, successfully pursued grant and funding opportunities independent of the state agency. Others had to narrow their focus. One group survived the transition without altering its activities, but that group had existed before the government initiative (Genskow 2008, 414, 417-18).

²⁰ The other two were the age of the partnership and the quality and comprehensiveness of the original plan.

Even where partnerships have a range of options available to access more resources, the process of seeking those resources can distract from other priorities, creating a problematic cycle that plays a prominent role in group failure (Bonnell and Koontz 2007, 158). In search of more funding, partnerships may devote much of their already limited resources to grant writing, which robs them of time and manpower otherwise spent on projects or conducting educational and outreach activities. The subsequent lack of measurable results may change stakeholders' costbenefit calculus for participation, whittling away at the benefits of membership until they are outweighed by transaction costs. Member attrition then exacerbates the group's troubles staying solvent and active. These were the findings for the Little Miami River Partnership²¹ (Bonnell and Koontz 2007, 158, 163).

In a comparative study involving groups in India and Ohio, Thomas M. Koontz and Sucharita Sen describe how the partnerships coped with the end of their grant funding. One strategy was to devote more time to grant writing, which — as in the case of the Little Miami partnership — subtracted time spent on projects in the community, redirected the group's focus away from their original plans and priorities to projects or missions that could be funded by available grants, or resulted in the group's merging with or relying on other entities. Still, those groups that focused on funding applications were at least able to outlive the end of their first grant. One group, not liking that option, instead spent the remainder of their funds on community projects and dissolved soon thereafter. The study suggested that partnerships could improve their chances of obtaining additional funding or citizen involvement by linking issues in the watershed plan to livelihood issues or public benefits (Koontz and Sen 2013, 576, 584).

Broader diversity of membership may help groups gain access to funding. The broader the participation in the group, the more expertise, networks and funding the group has access to; broader membership may translate directly into more actual restoration projects because greater participation rates may lead to more sources of funding (Koontz and Johnson 2004, 195). Similarly, influential and

²¹ In a 2007 article, Joseph E. Bonnell and Thomas Koontz, studied both the planning and implementation effectiveness of the Little Miami River Partnership, located in Ohio. The partnership formed in 1996 as a project of the Ohio EPA, local universities, soil and water conservation districts, and the Ohio Department of Natural Resources. A grant from the Ohio EPA paid for a full-time coordinator, who worked with a nine-member board comprised of volunteers. Partner organizations initially contributed dues, but that support dwindled over time. Instead, grant funding paid for the bulk of staffing and activity requirements — but grants, of course, run out. In an effort to secure more funding, the group devoted its time to writing extensive applications for two more grants, leaving little time to conduct educational or outreach activities. The resulting lack of tangible results led to high levels of attrition among its members. Then funding from local organizations dwindled as engagement faltered (Bonnell and Koontz 2007, 155-59).

diverse stakeholders can broaden a group's resources and power (McDermott, Moote and Danks 2011, 90); funding problems can be alleviated by pooling diverse resources that no one of the entities could access on their own (McDermott, Moote and Danks 2011, 97).

Leadership and facilitation

Groups need leaders to fill varying roles at differing times in the collaborative effort: charismatic leaders serve as champions to rally others; facilitators help build consensus and serve as one precursor to trust; and coordinators provide administration and maintain momentum (Antuma et al. 2014, 86-89) (Leach and Pelkey 2001, 383). Leach and Pelkey (2001, 381, 383) recommended hiring a skilled facilitator/coordinator as "(o)ne of the most important steps a partnership can take." Later research continues the theme of the importance of leadership during implementation for a collaborative watershed partnership (McDermott, Moote and Danks 2011, Antuma 2014, 93-94), especially those with managerial and facilitation skills (Margerum 2002, 191).Sometimes one person plays all of the various leadership roles, and sometimes the roles are dispersed among different people, including group members and staff.

McDermott, Moote and Danks (2011, 93-94) conclude that strong facilitators and leaders are needed *internally* to maintain focus and enthusiasm; they are needed *externally* to champion the group's work by building alliances and networks (for links to resources, information, nodes of expertise and political support) and by building trust and mutual respect (through consistent outreach to nonparticipants and interest-group leaders). The theme of facilitators and leaders in an outreach role was echoed in a study of watershed partnerships in Ohio (USA) and Lower Saxony (Germany), which showed the value of a cooperative facilitator for fostering networks to improve opportunities to implement recommendations, including establishing relationships with local landowners who are a key to implementation (Koontz and Newig 2014, 437).

While leadership is important and may shift forms during the life cycle of a watershed partnership, the process by which a leader takes control must be deemed fair and consensual by the participants, or risk undermining the group. In the Little Miami River partnership, absence of a strong leader at early stages of the group's efforts resulted in several individual stakeholders filling in the void. A few individuals significantly influenced the direction of the group by writing grants, rather than allowing the group to define its direction and then seek grants. While this moved the group forward without the often immense time needed on

organizational maintenance, it also tended to undermine the group's sense of collaboration and its consensus approach (Bonnell and Koontz 2007, 159, 164).

Given the importance of leadership, it is not surprising that change in leadership and in key members can create problems for groups — changing the balance of power and leaving the group with gaps in institutional knowledge. Groups should anticipate this by developing institutional memory, creating redundancy in membership, recruiting and supporting collaborative coordinators to keep organized and sustain momentum, and actively developing new leaders (Antuma et al. 2014, 77-78, 140-41).

Group membership

A watershed partnership's membership is important both in planning and in implementation, although studies vary somewhat in their recommendations. Likely, this is an area where circumstances must be carefully examined. While broad and inclusive membership was cited as important for watershed partnerships' success in 16 (43%) of the studies reviewed by Leach and Pelkey, this finding was contradicted by 8 (21.5%) of the studies, which found that diverse membership created problems.²² Two of their reviewed studies concluded that groups should have a manageable number of stakeholders, yet six studies warned that leaving out stakeholders may undermine the group if excluded members use alternative venues (e.g. courts or legislatures) to air their concerns (Leach and Pelkey 2001, 383).

Many studies conducted since the Leach and Pelkey discuss the role of the group's membership, trending generally toward recommending broader rather than restrictive representation of interests. Because collaborative implementation typically involves recommendations without the authority to implement, watershed partnerships typically derive their legitimacy from the extent to which they represent the groups most impacted by their efforts. (Koontz and Newig 2014, 422) This heightens the importance of inclusion during the planning process — and its relevance at the action stage. The more closely a watershed partnership represents the diversity of interests needed for implementation, the more likely those interests are to implement its recommendations (McDermott, Moote and Danks 2011, 90). Involving influential and diverse stakeholders, including governmental decision makers and officials, can overcome a group's lack of authority and legitimacy, and also broaden its knowledge and access to networks of resources and power

²² Leading the authors to recommend that future research consider if groups can remove intransigent members without creating new problems (Leach and Pelkey 2001, 383).

(McDermott, Moote and Danks 2011, 90). A broader group lends credibility, especially when it includes rival interest groups — and can enhance funding and "agency attention" (McDermott, Moote and Danks 2011, 90). And including representatives from powerful entities that control resources and activities in the watershed is important²³ (McDermott, Moote and Danks 2011, 88). Maintaining links to the organizations the members represent brings in their ideas and resources, and their buy-in for implementation (Bonnell and Koontz 2007, 160).

In a study of a large number of Ohio stakeholder groups to determine how breadth of public involvement links to a group's accomplishments, more inclusive groups were found more likely to report restoration accomplishments, perhaps because of broader access to funding through their members. Additionally, the study found a balance of public and private sector stakeholders to be somewhat more likely to list watershed restoration and protection as accomplishments, compared with a strictly citizen-based group. However, a more diverse group can present challenges from its very diversity, including coordinating multiple interests, and may be more dependent on skilled leadership (Koontz and Johnson 2004, 194-199).

Characteristics of group members themselves may be important. In Leach and Pelkey's literature review, one of the strongest themes impacting success (16 studies/43%, with no contradicting studies), was having creative, cooperative or committed participants (Leach and Pelkey 2001, 381, 383). Lubell et al (2005, 292) recommend groups recruit participants who believe in the process and in cooperation and bargaining, and who will use new information to update their beliefs. However, groups will need to assure citizen participants who are recruited for their passion are able to participate successfully and not be intimidated by the technical expertise of others (Bonnell and Koontz 2007, 164).

Antuma recommends groups include redundancy in membership to insulate from imbalance of power from turnover (Antuma et al. 2014, 80), and also that groups engage youth in implementation activities to build momentum for projects and to strengthen ties to community (Antuma et al. 2014, 152).

Yet, recruiting people who will participate actively can be challenging. A study of citizen participation in 12 watershed collaboratives in Ohio showed that many members did not actively participate in their groups. A higher proportion participated actively in government-based groups than in citizen based groups,

²³ Noting groups often avoid conflict by not recruiting representatives from these entities (McDermott, Moote and Danks 2011, 88).

perhaps, the authors theorize, because of the technical resources available to them (Koehler and Koontz 2007, 150). Males and people in environmentally related occupations tended to be more active participants, as did participants who previously were politically active, those who were comfortable sharing opinions, and those who came into the process with knowledge about the watershed. ²⁴ The authors suggest targeting politically active citizens for membership by demonstrating that political skills translate into effective participation (Koehler and Koontz 2007, 151). Similarly, educating the public about the watershed can lead to new and active group participants (Koehler and Koontz 2007, 151).

Trust and social capital

Many researchers have stated that successful partnerships depend on trust and social capital.²⁵ In their literature review, Leach and Pelkey noted 16 studies (43%) that cited good interpersonal relationships and trust as a key to success for watershed partnerships, with no studies contradicting them, and also recommended enhancing success of these partnerships by promoting trust through use of a neutral facilitator, clear process rules and open communication and information sharing (Leach and Pelkey 2001, 383, 383).

Studies relating to implementation after the Leach and Pelkey literature review diverge about the value of trust and social capital. A study by Leach and Sabatier, examining data from 76 water partnerships in California and Washington, concludes that while trust and social capital may lead to more comprehensive agreements (a precursor to successful implementation),²⁶ there was no statistically significant relationship between trust and social capital and the successful implementation of those agreements (Leach and Sabatier 2005, 247-53, 275). The authors did observe a halo effect that caused groups with high levels of trust and cohesiveness to perceive themselves as being more successful (Leach and Sabatier 2005, 254).²⁷

²⁴ These correlations measure the association between active and non-active members and various individual characteristics, and are not intended to suggest that groups should be composed specifically of such individuals (e.g. males rather than females). However, the correlations do provide some insight into potential ways to recruit members who may be active.

²⁵ Trust is defined to include knowing that other stakeholders will negotiate honestly, are worthy of respect, and will keep promises. Concepts of social capital include concepts of reciprocity and social networks that can provide better negotiation and leadership skills and advice/material assistance (Leach and Sabatier 2005, 234).

²⁶ The authors found that comprehensive agreements are one of three factors impacting successful project implementation —along with funding and age of the partnership.

²⁷ Noting limitations on research because it shows only a cross-sectional snapshot of each partnership at one point in time, the authors recommend that further research should measure trust, social capital and success at least twice, at an interval of 3-5 years.

The concluding chapter of the book in which the Leach and Sabatier discussion of trust and social capital is published notes that if increased trust and social capital "do not mislead stakeholders into thinking the watershed is in better condition than it in fact is — the halo effect — they provide additional justification for collaborative institutions," noting also that "to the extent we seek to justify watershed collaborations on the basis of environmental changes... perceptions might simply be the best evidence we have" (Lubell et al. 2005, 285).

However, research published after the Leach and Sabatier paper continues to find value in trust and social capital, including the networks linked to this concept. One study examining three watershed organizations focused on their changing dynamics and structures as they evolved over time, noting that researchers often conclude that partnerships fail, when in fact they may form social capital that allows groups or participants to morph over time to accomplish environmental goals (Genskow and Born 2009, 61-62). Another literature review recommends linking people effectively to address challenges of scale, recommending, among other strategies, the importance of building trust and mutual respect through consistent outreach to nonparticipants and interest-group leaders, and building alliances and networks for links to resources (McDermott, Moote and Danks 2011, 89). See more detailed discussions in the Group Membership section about how network links benefit collaborative groups.

Scope of activities

Both a project's scope of activity and how it establishes and measures goals can impact its success at implementation. Engaging in a limited scope of activities was among the top four keys to success cited in the literature review conducted by Leach and Pelkey (2001). However, the 16 studies (43%) favoring limited scopes were contradicted by six studies that found broad or ambitious scope of activity to be important. An appropriate geographic scope also was cited as important in nine studies. In their factor analysis, the authors specifically discuss scope in relation to number of participants, and also the appropriate geographic scope. While some studies showed that broad geographic scope, such as watersheds, are beneficial to account for the "problem shed" or ecological and political process, others noted that such a large scope fails to promote interdependence, cooperative behavior, and shared sense of place, and also may involve too many issues, interests or travel distance. Leach and Pelkey conclude that limited scope (combined with adequate time and resources) enhance the chance of success, and that balance between resources and scope of activities is important (Leach and Pelkey 2001, 81-3).

The tension of broad versus limited scope was explored in a study of Wisconsin's attempt to generate self-sustaining collaborative partnerships around river basins. That study concluded that geographic scale influences participant interaction, framing of issues and what issues are actually addressed. The large basin-wide scale allowed issues to be addressed at a regional scale, and promoted opportunities to connect local activities into the regional efforts. However, while Wisconsin's basin-wide approach was useful for stakeholders who engaged as part of their jobs. it hindered citizen engagement, creating burdens of time and travel costs. Some success was found by providing sub-basin framing of the stakeholder efforts (Genskow and Wood 2011, 421). Yet caution should be used with such an approach. The Little Miami River Partnership chose to work at a sub-watershed scale when its broad geographic scope made it difficult communicate, conduct business, and connect with stakeholders (whose pressing local concerns made the large scale less relevant to them individually). Yet, the project had trouble fostering a critical mass across sub-watersheds, prompting the study authors to suggest the partnership would have benefitted by starting with small, concrete activities to show results and build trust and confidence (Bonnell and Koontz 2007, 163). Antuma et al. similarly recommended in the context of forest restoration that groups strategically build momentum through small projects to show success and incentivize continued involvement (Antuma et al. 2014, 132-39). Focusing on demonstration projects and other on-the-ground projects can help groups build trust, allay the concerns of skeptics and generate and maintain enthusiasm, while also allowing the group to fine-tune its implementation (McDermott, Moote and Danks 2011, 102).

Clear goals, measureable results

Many stakeholder groups develop broad, soft, ill-defined goals at the inception of their projects, making it even more difficult to measure progress and fomenting stakeholder dissatisfaction later (Antuma et al. 2014, 114). The Wisconsin DNR did not set clear goals for the basin-wide stakeholder groups it launched, creating problems for uniting the stakeholders. Such groups tended to narrow their issues over time, proving critical to their success even though they lost members to whom the more focused issues were not relevant (Genskow 2009, 419). The author advises agencies initiating resource partnerships to provide them with a specific purpose and to focus on specific issues and areas (Genskow 2009, 421-22). Engaging external scientific experts in goal setting and monitoring and using measureable, quantifiable ecological goals were found to be important in stakeholder forest group restoration (Antuma et al. 2014, 144-47). Multiparty monitoring can help to ensure implementation — enabling those concerned with outcomes to participate in the design of a monitoring protocol and creating

incentives for compliance (McDermott, Moote and Danks 2011, 99) (Antuma et al. 2014, 146).

The more clear and specific the management plan a partnership adopts, the less time groups need to spend after plan formation deciding on next steps. In the case of the Little Miami Partnership, the group's goals were extremely vague, encompassing a mandate as broad as "to coordinate and support efforts to maintain and improve the natural integrity of the Little Miami River watershed" (Bonnell and Koontz 2007, 156-157). Because of the broad mandate, members expressed uncertainty and disagreement about how to actually take steps to implement its goals (Bonnell and Koontz 2007, 157). Four years into its lifespan and two years after election of a permanent board, the group was still defining its purpose and had made little progress on a comprehensive watershed action plan or completing restoration projects (Bonnell and Koontz 2007, 161). As a result it was struggling to engage stakeholders and raise funds. These problems were interrelated — funding from local organizations dwindled as engagement faltered (Bonnell and Koontz 2007, 158).

Agency support and interaction Scientific/technical Information

This discussion will combine two of Leach and Pelkey's themes (agency staff support and participation, and adequate scientific and technical information), both of which received positive correlation to success without contradicting studies. First they will be discussed separately, then at their potential intersection.

<u>Agency support and interaction</u>. Support from agencies at both a staff level and from higher levels can be important for group success, but also creates issues of power and role clarity that must be addressed. This section will discuss both cautions and best practices. Leach and Pelkey noted that 13 of the studies they reviewed showed the importance of active involvement of state or federal agency skilled staff; six studies recommended that agencies encourage their staff to participate with groups. However, nine studies showed agencies lacked sufficient resources or discretion to allow full participation by staff (Leach and Pelkey 2001, 381). The importance of "active support from elected official and agency heads" to the success of community-based collaboratives was emphasized by McDermott, Moote and Danks (2011, 84), who recommend direct involvement of key decision makers to overcome a group's lack of authority and legitimacy (McDermott, Moote and Danks 2011, 90). Groups themselves should garner critical support and resources for implementing their plans from agencies at all levels by reaching out to entities not previously involved in order to build trust and respect (such as through mailings, field trips). Groups also should educate agencies about the group's work and the newest science and resource information the stakeholders might have, thus helping the agencies understand the group's work, and also providing a benefit to the agency (McDermott, Moote and Danks 2011, 92-96).

Agencies are often instrumental in forming and supporting stakeholder groups, but should be mindful about how they do so, and also the need to react to changing conditions. While the Wisconsin Department of Natural Resources launched groups that "would not have happened otherwise" (Genskow and Wood 2011, 422), half the agency-initiated groups had disbanded 10 years after forming, after the agency halted both funding and most agency staff support. The authors warn agencies to be cautious in forming collaborative efforts to fulfill general management goals. Rather, they should match the form of stakeholder involvement with the internal and external situations facing the groups, and should be clear about the groups' authority and influence (Genskow and Wood 2011, 411). The authors also recommend having institutionalized staff positions and a modest level of funding to allow "substantive and enduring" involvement by agencies even as inevitable change in the partnerships or situations in which they operate occurs (Genskow and Wood 2011, 411). Such staff involvement will enable agency staff to see evolving opportunities for collaboration, and to match local needs with agency resources and response.

Governmental agencies must be aware of pitfalls and best practices as they help launch watershed partnerships and provide them with resources. These pitfalls generally revolve around power and decision-making. The more a group relies on agency support, the increased danger that it either actually operates or is perceived to operate as an extension of the agency, instead of as a bottom-up collaborative effort (Chaffin et al. 2014, 62). In his study of collaborative forest management, Antuma found that when a group is formed or sponsored by another entity, an imbalance or lack of understanding of power sharing can create frustration. At the time of group formation and as it evolves from planning to implementation, clear communication about matters such as decision-making authority, control of funding, and how the group interacts with its sponsoring entity staff will prime the group for greater success (Antuma et al. 2014, 70). In the study of Wisconsin basinwide groups, access to the agency and the potential to influence its decisions were strong drivers for participation; inadequate responsiveness by the agency, and lack of formal authority of the partnership became a deterrent to some participants (26 Genskow and Wood 2011, 419-22). Failure to clarify roles and responsibilities also created problems in one Midwestern collaborative watershed group. The group's

participants believed they had been given power to make decisions about implementation, including selection of projects for funding. In reality the Natural Resources Conversation Service, which received and controlled the Clean Water Act Section 319(h) funding for projects, felt it was responsible for making final decisions that complied with that funding (Flores, Prokopy and Ayers 2011, 830). These parallel interpretations created frustration for group members. The study concludes that decision-making roles must be clarified where authority of a group is prescribed, noting that groups previously empowered in developing a policy direction might need to take on more of a role of agent for entities that actually distribute funding during implementation. The study recommends that the agency distributing the federal funding could help develop a decision-making process that meets the needs of all organizations and local participants for shared responsibility, but that also satisfies the federal requirements the agency must follow (Flores, Prokopy and Ayers 2011, 833).

In addition to specificity about roles, agencies can improve a group's functioning by clarifying its goals for the group's work. Wisconsin did not clarify state-level goals and objectives for the natural resource when it organized basin-wide collaborative groups; without goals from the agency or a crisis to which the groups could respond, the partnerships "lacked clear drivers for collaboration that would unite stakeholders across a broad range of issues" (Genskow and Wood 2011, 419).

A group's lack of authority and legitimacy can be a significant external barrier for plan implementation. Governmental entities can use their power to enhance the group's authority and legitimacy, and thus its potential for success in implementation. Involving influential governmental decision-makers and officials with the group can create alliances and networks that imbue the group with resources, power and political support. Official mandates or other forms of legitimization from governmental entities also enhance a group's power and chances of successful implementation. Conversely, lack of involvement by key decision-makers, especially those with control of resources, creates problems. Groups can enhance support from elected officials by sharing information. Formalizing and institutionalizing a group also enhances its legitimacy (McDermott, Moote and Danks 2011, 90-101).

<u>Scientific/technical information</u>. Group success can be significantly impacted by access to, sharing and understanding of scientific and technical information, creating ways to craft agreements, building trust, boosting group credibility and keeping members engaged, and overcoming external power differentials. Indeed, 11 of the studies reviewed by Leach and Pelkey showed that adequate scientific

information and understanding were important to group success, with no studies to the contrary (Leach and Pelkey 2001, 381). Where stakeholder groups require technical data — as do many watershed partnerships — its availability and its "unimpaired sharing" play crucial roles in the groups' success and often provide the basis to craft agreements that all participants find beneficial (Leach and Pelkey 2001, 382-83). The very involvement of scientific experts may boost the group's credibility and help keep members actively engaged (Koehler and Koontz 2007, 150-51); involving external scientific experts in goal setting and monitoring was found to be important in stakeholder forest group restoration (Antuma et al. 2014, 144-47). Scientific expertise in data collection and interpretation and in training of volunteers proved important to groups engaged in long-term water quality monitoring (Sharp and Conrad 2006, 406). Collaborative groups can overcome external power differentials and enhance their success at implementation by both expanding their scientific/technical knowledge as well as their understanding about the policy arena in which they operate.

"When collaborative members learn the science that underlies environmental problems and proposed solutions, when they learn about the policy process, including where, when, and how they can influence difference, and when they learn the discourses that function in both arenas, then they have gained power."

(McDermott, Moote and Danks 2011, 95).

<u>The intersection</u>. Both agencies and collaborative watershed partnerships should seek to initiate and leverage opportunities for collaborating on scientific and technical matters. A survey of 304 participants in watershed groups in the Pacific Northwest showed that groups trust and prefer to receive information from agencies. "An opportunity exists for further engagement between watershed groups and agencies for mutually beneficial information flow, capacity building and project completion" (Chaffin et al. 2014, 62, 66). Building alliances and networks can give collaborative watershed groups links to resources and information, to finding knowledge gaps and nodes of expertise and to political support (McDermott, Moote and Danks 2011, 91).

Effective communication, data sharing

Communication and data sharing are critical to watershed partnerships during implementation at two levels: internally and externally. Leach and Pelkey reported that effective communication within the group and with the public was a key theme in nine studies, with no studies to the contrary (Leach and Pelkey 2001, 381). The

study concluded with a recommendation that groups build trust internally through, among other factors, unimpaired sharing of data and information (Leach and Pelkey 2001, 383).

Internal communication. Internally, communication serves several purposes. In addition to trust, open, respectful and professional communication within the group is associated with more active and committed participation (Koehler and Koontz 2007, 151; Bonnell and Koontz 2007, 64). Improving communication and transparency among members also better allows watershed partnership groups to weather transitions by preserving the group's knowledge. Using websites and libraries to store and provide access to group documents such as meeting minutes, plans, bylaws and charters both helps overcome transition among leadership and personnel in a group (and the often consequent loss of institutional knowledge and access to documents), and also promotes better communication among widely dispersed members, as does communication through social media and virtual participation.

Watershed partnerships can enhance communication among their members through a variety of techniques, such as using common language, assuring accessible and timely information sharing, hosting field trips to form common understanding, and seeking qualitative feedback about achievement of vision, partner outreach, and clarity of communication (Antuma et al. 2014, 144). Along with the media, these also are important tools to use in communication external to the watershed partnership group – with members' groups, the community as a whole, and organizations that will play a role during the implementation stage.

<u>External communication</u>. An important part of keeping a watershed partnership alive is raising its public profile. External communication not only helps grow participation, builds the needed political capital and garners resources, but often is an instrumental strategy itself for improving water quality in a stream by changing people's everyday behavior through education and awareness efforts.

Communications among members with other groups that have a common structure and challenges can help groups grappling with the problems of sustaining collaboration, not only by discussing common issues, but also by finding ways to share resources (Antuma et al. 2014, 151). Sharing information at the implementation stage with the public raises the group's profile, allowing it to broaden membership and often gain more access to funding, both important to its survival and effectiveness. Because previous knowledge about a watershed correlates positively with active participation in stakeholder groups, education and outreach to members and the general population that increases awareness and knowledge about watersheds might increase active participation (Koehler and Koontz 2007, 151).

People need to know there's a problem to get them interested in fixing it. In Ohio, few residents engaged in watershed management activities because they failed to understand the personal benefits of watershed health (such as a connection with their livelihood that similar groups in India experienced). Emphasizing personal and public benefits of watersheds to increase citizen participation, and holding initiating activities that are of widespread interest to citizens can help overcome this problem (Koontz and Sen 2013, 384). Education and outreach events that cultivate public support also can sustain the group in the absence of government funding. Some partnerships go through cycles to recruit and reform after membership rates drop. Communicating frequently with the community through radio broadcasts, websites and educational programs for youth (Antuma et al. 2014, 143) can help propel groups through such periods. A strong program to communicate results to their communities and volunteers who were collecting data was a factor that allowed Nova Scotia water quality monitoring watershed partnerships to survive in the long term (43 Sharp and Conrad 2006, 406).

Resistance from powerful parties often rears its head among obstacles watershed groups face while implementing their plans. Watershed partnerships often lack power because of their "localness" (sphere of influence): entities that are needed for support often either passively or actively resist their efforts. This often occurs when nonparticipants are unfamiliar with the collaborative and how its plan was developed (McDermott, Moote and Danks 2011, 87). Groups can gain power and enhance the potential for implementation by sharing their knowledge externally. Collaborative partnerships often bring some of the most current science to a problem, and can share this with state and local entities to help build support for their efforts as well as to benefit those entities (McDermott, Moote and Danks 2011, 94-95). Similarly, they can educate the public or legislative entities on the problems they are addressing and their solutions, and link their outreach to ongoing efforts of other entities (e.g. land use planning or economic development). "The thrust of these approaches is to share information in such a way as to build common ground, forestall or manage conflict, and recruit supporters" (22 McDermott, Moote and Danks 2011, 87,96). In contrast to using publicity to influence implementation, partnerships that expect to meet significant resistance from powerful groups and interests might consider "flying under the radar" and focusing on implementing projects and gaining support through more informal communication chains (McDermott, Moote and Danks 2011, 101).

Institutional structure and process

The structure of watershed partnerships impacts how their members work together, both to develop and implement their plans. Several of the themes and factors Leach and Pelkey discuss relate to the group's structure and process. They note that watershed partnerships gain strength in their ability to provide a "flexible, informal, and relatively egalitarian alternative to traditional forms of resource management," including flexible and informal operating rules, and in relying on moral authority to promote action (as compared with sanctions) (Leach and Pelkey 2001, 382). The theme of formal versus informal structure often surfaces in discussing various aspects of collaborative group structure, and thus will appear throughout this discussion of institutional structure and process. Experts generally do not categorically recommend one kind of group organization over another. What must be remembered is that collaborative group structure will vary with the local realities the group is facing, and may adapt over time as those realities change (Lubell et al. 2005, 265). For instance, organizations may morph from active to less active to active again, and change form and participants as opportunities and needs arise (Genskow 2008, 422). Groups can be characterized generally into formal and informal groups, although both generally operate in a much less formal mode than do agencies and governmental organizations.

• Formal organizations (with more regular meetings, clearly defined structures and decision-making rules and possibly written charters) create a controlled environment to manage conflict and conduct work. More formal arrangements may better weather fierce differences in opinion, because the procedures in place help contain and control the conflict. Without that structure, serious disagreements may simply create an impasse or spell the dissolution of the group altogether. Thus, formal groups tend to be better in areas where there are major differences between stakeholders, as the structure helps manage conflict (Antuma et al. 2014, 59-67). Larger, basinwide partnerships often benefit from more structure and sophisticated governance to guide their decision making — perhaps because the kind of personal relationships informal groups rely upon are harder to cultivate across distance (Diaz-Kope and Miller-Stevens 2014, 36). The implementation phase may warrant consideration of a more formal approach to provide the group with more power. Formalizing and institutionalizing the watershed partnership through legal recognition of the group (e.g. legislative recognition or creating a nonprofit organization) can increase power. Similarly, formal implementation agreements with governmental entities not only legitimize partnerships, but also may serve to allow the

partnership to accomplish actions it could not otherwise do (e.g. access private land). These types of formalization additionally can help a group publicize its goals, increase its transparency, and provide public accountability (McDermott, Moote and Danks 2011, 100).

At the other end of the spectrum, self-organized grassroots organizations • often have few formal rules and make decisions informally. Often formed to take advantage of opportunities rather than in response to conflict, or formed in a situation where the public may be wary of formal collaboration and cooperation with and between government, these organizations have the benefits of creating less transactional costs, possibly meeting less frequently and informally (Antuma et al. 2014, 59-67). Self-organized, grassroots groups composed solely of private citizen volunteers often are characterized by informal decision-making (Diaz-Kope and Miller-Stevens 2014, 31, 41). They frequently focus on shaping community attitudes, particularly through social marketing campaigns as well as through educational programs for clubs and schools. This format is well suited for building trust between members of the community (Diaz-Kope and Miller-Stevens 2014, 42). Staying unstructured and ad hoc can provide flexibility as members change, allowing groups to be more accessible to the community without membership or operational rules (McDermott, Moote and Danks 2011, 101). Yet, this lack of structure can also impede change of membership and leadership in terms of institutional memory and bringing new members up to speed.

As stakeholder groups move to the implementation phase, they often are faced with different forces that can derail them, including fatigue that may lead to members dropping out. How the group is organized can impact its ability to weather these forces.

Dealing with memory and membership change. Once partnerships enter the implementation phase, their members have spent considerable time developing their plans. Members often lose energy at this transition stage and may drop out, feeling they've served their time and commitment. This can occur even among the most wisely structured groups. Membership turnover is not inherently a problem. The problem arises when groups fail to recruit members to replace departing participants, when those who leave subtract from the group's collective institutional memory, or when such turnover severs connections with other groups and entities important to successful implementation.

Group structure. Resource management partnerships that adopt more formal procedures tend to weather turnover better, because they are process rather than personality based (Antuma et al. 2014, 61). The Amador-Calaveras Consensus Group, which was formed to help restore forestland, is a good example of a more formal group. At its founding, the group adopted a memorandum of agreement, formed committees to undertake work, and hired a facilitator. As the group became more established, members rotated facilitation duties among themselves (Antuma et al. 2014, 61). In such formal groups, the departure of a leader is followed by a process that puts a new leader in place operating under an existing charter or agreement, and the organization continues to operate more or less as it did before. Institutional features such as charters and bylaws not only help in structuring a group initially, but they help educate and socialize new members more quickly into an established group (Antuma et al. 2014, 79), thereby helping sustain its longevity and effectiveness.

Informal groups may provide less ability to transition as change occurs. The longlived Lakeview Stewardship Group operated for years without a charter or decisionmaking rule. As its charismatic leaders — who had provided the group's stability sought to retire, the group became more formalized, instituting more processes and structures that created a sense of continuity despite turnover (Antuma et al. 2014, 77).

Shared memory. Finding ways to preserve and share knowledge can help span time and changing membership. Producing and saving materials that document meetings, decisions, plans and results create a shared, institutional memory that can prevent a group from making the same mistakes over a long lifetime. Making these resources available at the local library and/or online provides accessibility (Antuma et al. 2014, 79). One cooperative watershed partnership in Washington State illustrates the utility of institutional memory. The Dungeness Watershed Group succeeded in eliciting long-term cooperation, had clear and measurable results, and even received state recognition for excellence in the form of the Governor's Environmental Excellence Award (Seiter, Newberry and Edens 2000, 1215). One reason for its success was its strong institutional memory. As participants left and new members joined, previous plans and the success or failure of past projects were not forgotten (Seiter, Newberry and Edens 2000, 1216).

<u>Preventing or overcoming fatigue.</u> Even well-designed and well thought-out collaborative organizations are working against the forces of entropy. As voluntary organizations, collaborative groups are vulnerable to members' burning out. As one surveyed participant put it (Koontz and Johnson 2004, 194):

[Our] main challenge is keeping it fresh and keeping people interested and we've seen it in other watershed programs ... that take so long getting going and people get burned out before [the groups] get anything done. People are getting flooded with all of these things that they have to participate in.

Lower transaction costs. Especially if visible progress is slow in coming, participants may start to value the project too little compared to the time and energy they must invest in the effort (Antuma et al. 2014, 72, 79). To fight that, even as groups should work to increase their effectiveness, they should also increase their efficiency. Organizational development and maintenance can overwhelm a group, and lead it to focus on the group's sustenance rather than on the water resource issues (Bonnell and Koontz 2007, 163), further diminishing members' sense of benefit. Finding ways to alleviate these administrative burdens may help with a group's success (Antuma et al. 2014, 62). Some possibilities include:

- Decision tools. Establishing tools to help with its decisions can assist groups be more efficient and avoid prolonged or unfocused attempts at collaboration. For example, partnerships may set rubrics for evaluating new projects to determine whether they're consistent with the group's purpose and goals (Antuma et al. 2014, 81,141).
- Meeting arrangements. Groups can reduce travel costs by using web-based methods to collaborate using web-based meeting space, sharing documents and using online forums (Antuma et al. 2014, 125-126). To the extent that these technological features can be developed for several groups similarly situated for instance by a state or federal sponsoring organization the costs would be considerably lowered. However, to be most effective, centralized training and maintenance would be desirable (Antuma et al. 2014, 152). Holding meetings outside of business hours may bring in more citizens (but may create problems for those who serve on the group as part of their job) (Bonnell and Koontz 2007, 158).
- Working with other groups. Groups can eliminate areas where their missions overlap with that of other groups. In some areas, there are multiple collaborative projects going on with many members attending meetings for both. Some Arkansas collaborative resource management groups combined their meetings into one, reducing the burden on participants and working on a broader scale. But beware that a clash of cultures could happen (Antuma et al. 2014, 78).

<u>Working together: process rules and modes of managing a project's implementation</u>. The rules and modes by which a stakeholder group operates, including how it makes decisions and how it interacts with groups outside its membership, can often influence its level of success.

Process rules: Leach and Pelkey recommend using clear process rules that build trust (Leach and Pelkey 2001, 383). Process rules are used most often in formal structures, but may also be present in informal groups. One element of process rules is the rule for making decisions. Consensus-based decision making often is the go-to process for watershed partnerships. It is viewed as being a tool to create egalitarian processes (Leach and Pelkey 2001, 382) and also as taking advantage of a group's collective wisdom and working to agreements that can be supported by a large constituency. Agreements forged by consensus during planning often form a strong base of agreement, thus achieving one of the three factors that Leach and Sabatier (2005, 250) find most important for implementing restoration projects.²⁸ Yet consensus should not be approached without full consideration of its weaknesses. If not employed by a skilled facilitator or group, it can lead to "lowest common denominator decisions as well as take a long time" (Leach and Pelkey 2001, 382).

Coordinating with organizations involved in implementation. At the implementation stage, participants must juggle a landscape where multiple entities may be working on elements of a group's plan. How these entities and the people involved with them work together is important. The structure must transcend the potential that key players will change over time. Noting that when a growth planning effort entered implementation and disbanded its structure of interaction among groups, "the ad hoc coordination produced by informal links dissipated over time as people moved to new positions and priorities" (Margerum 2002, 190-91). Margerum distinguishes between groups merely cooperating (working independently toward common goals) and coordinating (working under a process for the participants to function together with "mutual adaptation and adjustment" and thus developing new initiatives and ongoing relationships) (Margerum 2002, 190). A coordinated structure should promote "continuous communication and interaction" to generate "energy to sustain consensus" (Margerum 2002, 190-91). Groups also should develop an implementation structure that involves personnel at both the staff level (those involved in the actual implementation) and administrative

²⁸ The authors found the following three factors most conducive to restoration project implementation: (1) partnership age; (2) grant funding; and (3) agreement on what projects to pursue.

level (policy-makers) (Margerum 2002, 191). The study of the Little Miami River Partnership recommends clarifying the ways members of the partnership communicate back to their organizations. As agents, group members are responsible to the organizations or 'interests' that they represent. Group members should maintain strong communication with those they represent to assure that decisions of the collaborative group can be supported. Ideally, groups clarify at their formation stage what types of buy-in individual members must obtain from the organizations and interests they represent. Strong communication between the representatives and their constituency continues to be important as the group moves to implementation when these organizations are involved either in active implementation or in supporting the implementation (Bonnell and Koontz 2007, 163-64).

Conclusions and recommendations

<u>During the plan development stage</u>. Watershed partnership groups face many challenges in their efforts to implement water quality improvements. These challenges begin well before implementation starts. Two are strongly tied as important precursors to successful implementation: how a group selects its membership, and the quality of the agreement that the group produces.

- Broad and inclusive group. Having a group that is appropriately inclusive from the beginning lays the groundwork for successful support for the plan's implementation, both among group members and their organizations, and among other community members and entities whose support is needed during implementation.
- A good agreement. Another foundational element from the group's planning stage is to produce an implementation plan or watershed protection plan that:
 - is supported by the group itself as well as by people needed for its implementation;
 - has an appropriate scope and focus; and
 - has clear goals and measureable results.

<u>During the implementation stage</u>. Upon entering the implementation stage, groups must overcome many obstacles, both internal and external, to be successful. Many of the obstacles are intertwined. But many of the solutions also are intertwined, and leverage at one point can influence success on several levels. Successful implementation depends on several factors.

- Secure adequate funding and resources, both for the projects comprising the plan and for the group's management. Both lack of money and a focus on money can reduce measureable results, and drive away stakeholders, further reducing the group's ability to find funds. Providing resources to engage a facilitator or watershed coordinator position may help stop this unending cycle, and provide additional benefits of general support for the group. A coordinator can lead the efforts to find funding to implement the projects identified in a group's plans. Similarly, finding ways to more easily seek project funding can help groups launch and continue their implementation. Groups can enhance fundraising by:
 - maintaining a broad and well-connected stakeholder membership to engage needed community and organizational leadership for project support and funding;
 - communicating with the community to recruit volunteers, where appropriate, for implementation; and
 - engaging with other organizations to identify funding and partnership opportunities.
- Engage a facilitator or coordinator. Although engaging a facilitator or coordinator requires resources, this expenditure may more than pay its way by keeping a project moving. A facilitator or coordinator can:
 - secure funding through grant writing or by building networks;
 - build connections to remove external barriers and garner support for the project;
 - enhance communication within the stakeholder group and keep the business of the group going (including meeting organization); and
 - communicate with the community.

A facilitator/coordinator may be hired externally, be provided by a member organization, or the role may be rotated among group members, depending on the situation. Care should be taken to assure a facilitator provided by member organizations or rotated among group members will have adequate time to devote to the needs of the group and will be perceived as advancing the needs of the group rather than his or her own needs or the needs of the entity employing him or her.

• Focus on implementing projects quickly. Pointing to accomplishments builds and maintains momentum and trust in the effort, overcomes group member fatigue, and garners community support and funding. The size may not

matter as long as something is accomplished to show the public and members that progress can be made.

- Build and cultivate leaders within the group. Internal leaders should be developed to motivate both group members and those external to the group for project success, and also to provide stability in the case of leadership turnover.
- Build institutional memory and ways to easily share information. This helps existing members communicate, assures that loss of a leader does not cripple a group, and helps new members acclimate. Consider web-based information sharing, and making documents accessible to the public.
- Avoid participant fatigue by reducing travel costs and time by methods such as web based collaboration, by setting meetings at times convenient for members, by partnering with groups having overlapping missions, and by providing adequate resources, including technical information.
- Find ways to share experiences with and learn from others engaged in the TMDL/NPS implementation. Facilitators can learn from one another, share experiences and think through problems common to many groups. Similarly, occasional meetings between members of watershed partnership groups facing similar issues can energize these groups and introduce new ideas.
- Develop open and frank communication within the group and with the community. Open communication within the group is important to active member participation and to building trust. Communication with the community similarly builds an understanding of the project, may bring in resources for implementation, and provides a source of new group members if needed.
- Use best practices related to scientific and technical expertise to boost the group's credibility, retain active participants, and create a shared understanding. Involving external scientific experts in monitoring can increase trust in the group's work.
- Clarify the group's level of authority and responsibility, and assure group members understand it.
- Find ways to legitimize and give authority to groups to both cement support and to remove external obstacles.
- Review the group's level of formality and structure to assure it is meeting the needs of its participants at the implementation stage.

• Be prepared to adjust to changing circumstances. Groups should be prepared to adjust while remaining true to their goals and objectives.

There is no magic bullet to assure groups remain viable and succeed in implementing their watershed plans. Those involved in and with these groups must recognize that time itself may be one of the most important factors to success. Yet, time also can be an impediment, leading to burnout and fatigue that can cripple a group. Using the techniques noted above may lead to more engaged and active participants and community support, both of which enhance a group's likelihood of implementation. Each group is unique, and its circumstances must dictate the approaches it uses during the implementation phase of its project. But, with a focus on the items noted from the research literature and points summarized in these recommendations, groups can have a sporting chance of making their implementation phase rewarding and successful.

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Appendix A

Summary of strategies to overcome external barriers to implementation From "Effective Collaboration: Overcoming External Obstacles" by McDermott, Moote and Danks

Community Based Collaboratives: Overcoming External Barriers to Implementation					
External barriers/obstacles	Strategies to overcome obstacles				
 Obstructive laws, regulations Agency capacity, culture Lack of financial and human resources 	 Linking people effectively Involve influential/diverse stakeholders Build alliance and networks Build trust and mutual respect Strong leaders & champions 				
 Resistance from powerful parties Lack of authority and legitimacy Large scale political-economic factors 	 Bringing in new resources Expand knowledge base Educate agencies Get public support Pool funds and human resources Transforming ground rules Change law and policies Accountability mechanisms Formalizing and institutionalizing Staying focused and flexible Staying unstructured and ad hoc Fly under the radar Focus on projects, demonstration projects 				
From McDermott, Moote, Danks, <i>Effective Collaboration: Overcoming External Obstacles</i> , Chapter 4 in Dukes et al (eds.),					

From McDermott, Moote, Danks, *Effective Collaboration: Overcoming External Obstacles,* Chapter 4 in Dukes et al (eds.), Community-Based Collaboration: Bridging Socio-ecological Research and Practice (University of Virginia Press, Charlottesville & London, 2011)

Strategies to overcome obstacles

- 1. Linking people effectively (addresses challenge of scale)
 - Involving influential/diverse stakeholders, *including government decision makers and officials to overcome lack of authority and legitimacy; diversity to broaden knowledge and network of resources and power*
 - Building alliances and networks *for links to resources, information, finding knowledge gaps, nodes of expertise and political support*
 - Building trust and mutual respect: *consistent outreach to nonparticipants (mail lists, field trips, invites to meetings and to present, involve in monitoring) and interest-group leaders*
 - Strong leaders and champions: *internally to maintain focus and enthusiasm. For external championships outside group*
- 2. Bringing in new resources (address power differential)
 - Expand knowledge base
 - o Educate agencies about newest science and resource info; about collaboration

- Get public support from the public and elected officials, by sharing information to build common group, prevent or manage conflict and recruit support
- Contribute funds and human resources: *pool resources by supplying expertise and time, coordinate volunteers*
- 3. Transforming ground rules (addresses power differential)
 - Change law and policies
 - Accountability mechanisms: *multiparty monitoring by those interested in outcomes, incentives for compliance (e.g. star rating)*
 - Formalizing and institutionalizing: *formal agreements and creating legal recognition of group for legitimacy*
- 4. Staying focused and flexible (to remain innovative and effective)
 - Staying unstructured and ad hoc *for flexibility as members change, to be more accessible to community, etc.*
 - Fly under the radar *and use informal communication to gain support, working on issues where there is common support*
 - Focus on projects, demonstration projects: *can garner community support, and demos can bring together people with divergent views on a project*