

**USING APPRECIATIVE INQUIRY TO BUILD AGRICULTURAL STAKEHOLDER  
COLLABORATION IN WATERSHED MANAGEMENT PLANNING: A CASE STUDY**

**By**

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**A THESIS**

**Submitted to  
Michigan State University  
in partial fulfillment of the requirements  
for the degree of**

**Community, Agriculture, Recreation and Resource Studies - Master of Science**

**2013**

## ABSTRACT

### **USING APPRECIATIVE INQUIRY TO BUILD AGRICULTURAL STAKEHOLDER COLLABORATION IN WATERSHED MANAGEMENT PLANNING: A CASE STUDY**

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Watershed management aims to address nonpoint source pollution, which results from a variety of land management practices. Currently, agriculture is cited as one major source of nonpoint source pollution. We need a better understanding of how to collaborate with stakeholders when their involvement is important, such as the case in watershed management. We used a case study in the Red Cedar River Watershed to attempt and evaluate one method of building collaboration among agricultural stakeholders in the watershed management planning process. Watershed management and public participation literature informed the selection of the Appreciative Inquiry Model to frame meetings with agricultural stakeholders designed to build collaboration. An analytical framework was used to guide the collection and analysis of evidence to determine whether or not desired project outcomes were met using Appreciative Inquiry and whether or not the application of Appreciative Inquiry could be considered an egalitarian deliberation form of public participation. The study found the Appreciative Inquiry Model can be applied in scenarios where the egalitarian deliberation perspective is most beneficial for stakeholder involvement. The study also found that using the Appreciative Inquiry Model allowed for achieving some of the desired process and substantive outcomes of the Watershed Management Planning Project. The use of Appreciative Inquiry did not achieve the desired stakeholder attendance. All outcomes resulting from this approach for building stakeholder collaboration cannot be measured at this time.

## ACKNOWLEDGEMENTS

Thank you to my graduate committee, Dr. Patricia Norris (chair), Dr. John Kerr, and Dr. Jennifer Rivera for your time, support, teachings, and guidance through this learning process.

Thank you to Ruth Kline-Robach for procuring the funding and allowing me the opportunity to work on, research, and learn from the Red Cedar River Watershed Management Planning Project.

This research was approved by the Michigan State University Institutional Review Board, IRB# x12-1273e, under an Exempt #2 category.

## TABLE OF CONTENTS

<b>LIST OF TABLES.....</b>	<b>vi</b>
<b>LIST OF FIGURES.....</b>	<b>vii</b>
<b>KEY TO SYMBOLS OR ABBREVIATIONS .....</b>	<b>viii</b>
<b>CHAPTER 1 INTRODUCTION.....</b>	<b>1</b>
Watershed Management .....	1
Collaboration .....	4
Frameworks, Theories, and Models for Watershed Management Planning .....	7
Research Problem .....	7
Case Study .....	8
<b>CHAPTER 2 THEORETICAL FRAMEWORK.....</b>	<b>10</b>
Challenges: Is Collaboration the Appropriate Management Method? .....	11
Lessons Learned and Shared about Collaborative Watershed Management .....	13
Characteristics of Successful Collaboration .....	13
Frameworks, Theories, and Models .....	18
Dynamic Framework for Watershed Management .....	19
Matching Context and Process.....	21
Types of Public Participation Processes .....	23
Public Participation Theory .....	24
Models of Collaboration .....	29
<b>CHAPTER 3 ANALYTICAL FRAMEWORK AND METHODS .....</b>	<b>34</b>
Context: Red Cedar Watershed Management Background Information .....	34
Analytical Framework.....	38
Agricultural Stakeholder Meetings .....	52
Meeting Format.....	54
First Agricultural Stakeholder Meeting .....	56
Second Agricultural Stakeholder Meeting.....	57
Evidence Collection and Organization.....	59
Analysis .....	60
<b>CHAPTER 4 RESULTS AND CONCLUSIONS.....</b>	<b>61</b>
Egalitarian Deliberation Category of Public Participation .....	61
Substantive Outcome: The achieved outcomes met the egalitarian deliberation perspective of public participation .....	62
Legitimacy of Process .....	64
Substantive Outcome: Legitimacy .....	64
Watershed Project Goals.....	66
Process Outcome: Stakeholders attend meetings.....	66
Process and Substantive Outcome: Stakeholders participate at meetings .....	68
Substantive Outcome: Progress is made toward identifying BMPs most applicable to the Red Cedar River Watershed.....	75

Substantive Outcome: Participants Engage in and Support the Program Coordination .....	78
Substantive Outcome: Agricultural landowners implement BMPs .....	88
Substantive Outcome: Watershed water quality is improved .....	88
<b>Summary of Process and Substantive Outcomes .....</b>	<b>90</b>
Appreciative Inquiry's Application of Egalitarian Deliberation .....	94
Legitimacy .....	94
Watershed Management Planning Project Outcomes .....	94
<b>Conclusions, Implications, and Limitations .....</b>	<b>95</b>
<b>APPENDICES.....</b>	<b>103</b>
APPENDIX A Meeting Email Invitations.....	104
APPENDIX B Meeting #1 Agenda and Discussion Guide.....	110
APPENDIX C Meeting #1 Post Meeting Survey Questions.....	113
APPENDIX D Meeting #2 Agenda and Discussion Guide.....	115
APPENDIX E Meeting #2 Post Meeting Survey Questions.....	118
APPENDIX F Meeting #1 Discussion Results.....	120
APPENDIX G Meeting #1 Post Meeting Survey Responses.....	128
APPENDIX H Meeting #1 Researcher Observations.....	131
APPENDIX I Meeting #2 Discussion Results.....	136
APPENDIX J Meeting #2 Post Meeting Survey Responses.....	143
APPENDIX K Meeting #2 Researcher Observations.....	147
<b>REFERENCES.....</b>	<b>155</b>

## LIST OF TABLES

Table 1. <i>Select Lessons Learned about Variables Related to the Watershed Management Planning Process</i> .....	14
Table 2. <i>Analytical Framework</i> .....	41
Table 3. <i>Achieved Outcomes</i> .....	90

## LIST OF FIGURES

*Figure 1.* Relationship between Frameworks, Theories, and Models (adapted from Ostrom, 2007). .....19

*Figure 2:* Theory of Fair and Competent Public Participation (adapted from Webler & Tuler, 2002).....26

*Figure 3.* Case Study Specific Framework, Theory, and Model Diagram (adapted from Ostrom, 2007).....33

*Figure 4.* Red Cedar River Watershed Locator Map. For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this thesis.....35

*Figure 5:* Phases of the Appreciative Inquiry Model (adapted from Cooperrider et al., 2008)...55

## KEY TO SYMBOLS OR ABBREVIATIONS

BMP	Best Management Practice
DEQ	Department of Environmental Quality
DECISIONS	Community Decision Support for Integrated on the ground nutrient strategies
<i>E. coli</i>	<i>Escherichia coli</i>
EPA	Environmental Protection Agency
MAEAP	Michigan Agriculture Environmental Assurance Program
MSU	Michigan State University
NPDES	National Pollutant Discharge Elimination System
TMDL	Total Maximum Daily Load
USGS	United States Geological Survey



## CHAPTER 1 INTRODUCTION

There is a need to manage water quality. Water quality is of interest because of the value of water to humans, organisms, and the environment. Water is a shared common resource that every human and animal needs for life. Water bodies in nature provide aesthetic and ecosystem services as well. The water quality of a surface water body is affected by how the nearby land and water are managed and can be degraded from point sources and nonpoint sources of pollution. Point sources of pollution are direct discharges of pollution to a body of water often through a pipe, for example an industrial or municipal wastewater discharge. Nonpoint source pollution is a result of a multitude of indirect sources of varying types of pollutants carried from the land to a water body, often through rainwater or snow runoff (Environmental Protection Agency [EPA], 2012b).

### **Watershed Management**

In the United States, water quality is regulated by the federal government as a common resource owned and used by everyone (Federal Water Pollution Control Act, 2002). With so many users and because of the importance of water as a resource, the EPA in cooperation with individual state health and/or environmental agencies manages, evaluates, and regulates the surface waters of the United States to ensure the health of the surface waters is acceptable. Through the Clean Water Act, water quality standards were established for waters of the United States to maintain healthy clean waters. The water quality standards include a list of designated uses that must be

met for each water body, including uses such as partial and total body contact, industrial water supply, warm or cold water fishery, and other indigenous aquatic life. Numerical concentrations and narrative targets are set by the regulating agencies for certain pollutants, establishing allowable levels of pollution that correspond to each designated use and determine a waterway's capacity for a designated use. Total Maximum Daily Loads (TMDLs), or a maximum quantity or concentration of specific pollutants allowed to be discharged into a specific watershed's waterways, are also set for some pollutants to achieve and protect designated uses. In addition, the water quality standards require that waterways be managed so that their health and conditions do not degrade from their current state (EPA, 2009).

These regulations are warranted as the EPA reports that of the 16% of the 3.5 million miles of rivers and streams in the nation assessed by the individual states, 44% were reported as impaired or not clean enough to support their designated uses. "Pathogens, habitat alterations, and organic enrichment/oxygen depletion were cited as the leading causes of impairment in rivers and streams, and top sources of impairment included agricultural activities, hydrologic modifications (such as water diversions and channelization), and unknown/unspecified sources" (EPA, p. 1, 2009). The majority of lakes and reservoirs are also reported as impaired, with agriculture as a leading source of contaminants. Though this number is somewhat skewed since often the waters assessed are those suspected to be impaired, it still shows that a large portion of our waterways are not meeting the requirements of the Clean Water Act (EPA, 2009).

Changes in behavior are necessary to prevent pollution and promote acceptable water quality. Changes can either be compelled through regulation or undertaken voluntarily. Point sources of pollution are regulated under federal law, often enforced by state environmental agencies (EPA 2009b). Because of the success of these programs, point source pollution is no longer the biggest threat to waterways.

Nonpoint source pollution is now the biggest contributor to surface water pollution. Nonpoint source pollution is managed on a watershed scale through watershed management planning. A watershed is an area of land where all precipitation that lands in the area and groundwater held in some formations beneath the land drains to a common waterbody (EPA 2012a). In watershed management, land use is important as it affects water quality through precipitation runoff carrying pollutants from the land, such as excess fertilizers, oil drippings, sediment from erosion, bacteria from leaky septic systems, pet waste, and livestock manure, to name a few sources (EPA, 2012b). The collective contributions of these contaminants can result in a large negative impact to the waterways. Thus, land use management is important to protect water quality. Land is owned privately and management and use of privately owned land are subject to limited regulations, which can vary widely between jurisdictions and land-use types. Because of physical characteristics of nonpoint discharges and the challenges with regulating the sources, most nonpoint source programs encourage and rely on voluntary efforts of land-owners to minimize discharges.

Watershed boundaries are drawn by the United States Geological Survey (USGS) and can be broken down into portions of rivers, or entire river or lake basins. Watershed planning and

management is the process of collecting information and data about a watershed and developing and working with community stakeholders towards a detailed proposal for reducing nonpoint source pollution and improving water quality. Watershed management plans can be voluntarily developed or they can be required if a TMDL for a pollutant is exceeded in a water body. In either situation, watershed planning and management requires the broad participation of landowners and citizens who all live or have a stake in the land and water within the watershed.

### **Collaboration**

Collaboration is key to coordinating the participation of various landowners and citizens in watershed planning. However, collaboration in a community with varying interests can come with inherent challenges that do not suit themselves to a formulaic method of problem solving. Working with stakeholders within a hydrologically defined watershed often equates to working in an area that spans traditional political jurisdictions. This makes coordination between political jurisdictions necessary if consistent local policies are to be adopted throughout the watershed. No one method of collaboration fits every scenario so it is helpful to identify processes for bringing a community together with the intention of collectively improving the nearby surface water quality.

Due to this geographic and regulatory complexity of the scope of work, more than just scientific evaluations of water quality and watershed characteristics are required to develop a watershed management plan. Stakeholder involvement processes are commonly used as a means of including the public in the watershed management planning and implementation process to

solicit their support of and compliance with the plan and to ultimately achieve water quality improvements (EPA, 2008). Frequently, stakeholders with varying interests, including residents, landowners, businesses, local governments, and state agencies, collaborate to develop a shared vision for managing their lands in a way that minimizes the impacts to the shared waterways, while following any existing regulatory limitations. The social component is critical in implementing changes suggested as necessary based on scientific information (Flitcroft, Dedrick, Smith, Thieman & Bolte, 2010).

Of particular importance are the agricultural stakeholders, as agriculture is cited as a major source of nonpoint source pollution impairment across the nation's rivers and streams (EPA, 2009a). Collaboration with agricultural stakeholders can at times struggle with conflicting interests between the producers and the watershed management group, in that, unlike homeowners, the financial prosperity of farmers is dependent upon their land. Often, the agricultural producers' management of their land to meet production goals conflicts with water quality goals in a watershed plan that may be suggesting capital investments or the removal of riparian land from production. In watershed management, stakeholders with varying and conflicting interests must collectively determine their common goals and the land management methods necessary to reach those goals. Thus, we must understand how to foster collaboration among stakeholders with conflicting interests. The collective behaviors of the community members are critical to the success of watershed management and, ultimately, to water quality.

Not surprisingly, case studies of collaborative resource management projects show there have been a number of challenges in effectively building collaboration around watershed management

(Bonnell & Koontz 2007; Borisova, Racevskis & Kipp, 2012; Flitcroft, et al., 2010; Smolko, Huberd & Tam-Davis, 2002; Spelleccary, 2009). More specifically, watershed organizations and managers are still currently experiencing challenges with establishing adequate balanced stakeholder involvement (Borisova et al, 2012), effective partnerships (Bidwell & Ryan, 2006), and successful adoption of practices to reduce nonpoint source pollution, known as Best Management Practices (BMPs), within the agricultural community (Lamba, Filson & Adekunle, 2009). Landowners have a diverse set of preferences and motivations for their land management (Rosenberg & Margerumb, 2008), and within agriculture, specifically, a variety of different factors influence landowners in their adoption of BMPs (Habron, 2004; Lamba et al., 2009; Lubell & Fulton, 2008; Napier & Tucker, 2001; Welch & Marc-Aurele, 2001).

The EPA and researchers acknowledge that there is no one exact method for effectively building collaboration among stakeholders (McGinnis, Woolley, & Gamman, 1999; Sabatier et al., 2005; Tetra Tech, Inc., 2000; Tuler & Webler, 2010). Furthermore, both the EPA and the related literature make recommendations and give varying advice on successful characteristics of collaborative stakeholder involvement (Benthrop, 2001; Borisova, 2012; EPA, 2008; Flitcroft, Dedrick, Smith, Thieman, & Bolte, 2009; Floress, Prokopy & Ayers, 2011; Tetra Tech, Inc., 2000). A review of case studies doesn't offer a consistent rule of collaboration; different rules apply in different scenarios. Partnerships are complex and seemingly simple parts of the collaboration process may dissuade key stakeholders from participating cooperatively if implemented improperly (Smolko et al., 2002).

## **Frameworks, Theories, and Models for Watershed Management Planning**

The research described in this thesis benefited from previous researchers' development of frameworks, theories, and models that can be used to evaluate collaboration approaches. Lubell, Sabatier, Vedlitz, Focht, Trachtenberg & Matlock (2005) describe the Dynamic Framework of Watershed Management that outlines factors that affect collaborative watershed management. The Theory of Fair and Competent Public Participation by Webler and Tuler (2002) refines the relationships of some of the factors, the context, process, and outcomes, within the Dynamic Framework of Watershed Management. Further research by Tuler and Webler (2010) describes a public participation process that emphasizes empowering the stakeholders, described as an egalitarian deliberation perspective of stakeholder involvement. One model for applying this type of public participation process is the Appreciative Inquiry Model, an organizational change model with an emphasis on opportunities rather than constraints (Cooperrider & Whitney, 2005; Cooperrider, Whitney, & Stavros, 2008). This framework, theory, and model were applied in this thesis and are described in more detail in Chapter 2.

## **Research Problem**

We used a case study in the Red Cedar River Watershed to apply and evaluate one method of building collaboration among agricultural stakeholders in the watershed management planning process aimed to address nonpoint source pollution. This case study was conducted to assess whether use of the Appreciative Inquiry Model could effectively build collaboration among agricultural stakeholders to make the planning and implementation processes effective. This study was not intended to supply specific comparisons of multiple participatory methods

conducted through an active watershed management planning process. Despite this, results of this study can be applicable to collaborative approaches in other active watershed management planning practices. The purpose of this research is to address two research questions:

- 1.) Does use of the Appreciative Inquiry Model in a collaborative watershed planning process achieve outcomes desired from the egalitarian deliberation perspective of public participation?
- 2.) Does applying the Appreciative Inquiry Model build collaboration among agricultural stakeholders to achieve the desired process and substantive outcomes of the Watershed Management Planning Project?

### **Case Study**

The Red Cedar River Watershed in mid-Michigan has a confirmed bacterial surface water quality problem, and a watershed management planning process is underway in the community to address non-point source pollution. Bacterial water quality impairment is indicative of pollution from human and animal fecal waste and is measured by the indicator bacteria, *Escherichia coli* (*E. coli*). To address this and other confirmed water quality problems, a watershed management team, with input from partners from the affected area, interested communities and community organizations, is developing a watershed management plan. Though human and agricultural non-point sources of *E. coli* are of key interest in this stakeholder planning process, this research is limited to understanding collaboration building among agricultural stakeholders. Land use in the study area is largely agriculture, and agricultural



service organizations that have generally worked with the farms on conservation and water quality protection are increasingly resource-constrained. The agricultural community is a critical stakeholder in the Red Cedar River watershed management planning process and is therefore the focus of intensive collaboration efforts and is the subject of this research.

The watershed management planning process in the Red Cedar River Watershed is currently being funded in part through a grant from the Michigan Department of Environmental Quality (DEQ) to address an *E. coli* TMDL. The funding and planning process began in June 2012 and will continue for two years. Over this period, the EPA's nine-element process for watershed management and planning will be followed to produce an implementable Watershed Management Plan. This research focuses on a portion of the watershed management planning stakeholder collaboration process in the Red Cedar River Watershed Management Plan development. To study this process, relevant watershed management, public participation, and organizational change literature were used to identify an appropriate model for building collaboration and developing an analytical framework to assess its effectiveness.

## CHAPTER 2 THEORETICAL FRAMEWORK

Watershed planning and management is the process of collecting information and outlining steps for improving water quality in a specific geographic area that drains into a common waterway. Typically, it is a process undertaken when a required TMDL for a pollutant is being exceeded in a water body as determined by a state health department or the EPA. However, it may also be a voluntary process undertaken by a grass-roots organization concerned about water quality. In either case, successful watershed planning and management is dependent upon the behaviors of various landowners and citizens who live or have a vested interest in the land and water within the watershed.

The EPA is the key funder and regulatory authority of watershed management. They require stakeholder involvement in watershed management (EPA, 2008). Many others agree that stakeholder participation is important to watershed management (Flitcroft et. al., 2009; McGinnis et al., 1999; Said, Sehlke, Stevens, Glover, Sorensen, Walker & Hardy, 2006). Stakeholder involvement in watershed management emphasizes collaborative discourse. Though many public participation and stakeholder involvement initiatives are not collaborative, in this project, public participation and collaboration are used synonymously as the stakeholder participation is meant to be a collaborative experience. By collaborating, community stakeholders coordinate their actions in order to reduce nonpoint source pollution and improve surface water quality. Collaboration can be defined in a variety of ways, as it is complex, dynamic, and different depending upon the situation. Imperial defines collaboration as “a particular type of network relationship” (p. 287, 2005). Collaboration happens between two or more organizations or

individuals, and key collaborative characteristics include how the entities interact and make decisions together (Imperial, 2005). In collaborative relationships, decisions are made collectively through negotiation and rely less on hierarchical power relationships (Imperial, 2005). Sabatier et al. refers to collaborative institutions as a type of democratic governance with “groups of people coming together to make collective decisions about solutions to common problems, then adhering to the behavioral prescriptions that emerge from the process” (p. 19, 2005).

### **Challenges: Is Collaboration the Appropriate Management Method?**

Though collaboration is emphasized, the use of collaboration alone does not guarantee success in watershed management and planning. Collaboration is a comparatively complex, advanced governance tool, and there are many challenges in all phases from initiation to completion of collaborative projects (Imperial, 2005). The challenge starts at the very beginning of the process, in selecting the appropriate method of governance, as collaboration is unlikely to be the appropriate strategy for solving all governance problems (Imperial, 2005). Alternative tools include “unilateral action, litigation, legislative intervention, markets, and hierarchical control” (Imperial, p. 311, 2005). Smutko et al. suggest analyzing the presence and degree of certain issues, “the level of uncertainty...balance of information...perceived risks...time horizon of effects...urgency of decision...distribution of effect... clarity of problem” (p. 1003, 2002) and their estimated effect on the need for collaboration and willingness to engage before pursuing collaboration. Lubell et al. (2005) recommend the collaborative method for solving problems

under “high stakes, high social distrust, high government distrust, and high knowledge uncertainty” (p. 290).

The process of collaboration requires resources and professional skills and can fail without them (Imperial, 2005). An organizer must determine the level of effort to place into organizational collaboration planning as compared to watershed planning (Bonnell & Koontz, 2007). Successful implementation requires compromise, and while full agreement does not have to be reached in the collaborative process, it is an appropriate method when win-win situations or win-no-loss situations can be negotiated (Wondolleck & Yaffee, 2000 as cited by Imperial, 2005). Some suggest that collaboration is not a blanket solution critical to environmental success and caution to use the tool only when it is environmentally beneficial and not problematic (Imperial, 2005; Koontz & Thomas, 2006; Mandarano & Paulsen, 2011; Smutko, Klimek, Perrin & Danielson, 2002). “When used correctly, collaboration is an effective governance strategy. When used inappropriately, it can create more problems than it solves” (Imperial, p. 312, 2005). There are many ways to manage processes of collaboration, and research shows there are many factors important for successful collaboration.

With both challenges and opportunities at hand, before undertaking a collaborative process within watershed management, it is important to understand what has been learned from past collaborative experiences. We need to better understand when collaboration should be used, characteristics of successful collaboration, and the process that is followed to encourage successful collaboration.

In the case of the Red Cedar River Watershed, collaboration is an integral part of the development of a Watershed Management Plan. The funding agency supporting the project requires stakeholder involvement, and collaboration was selected as the approach in order to find a win-win or win-no-lose solution with the agricultural community. There is not an existing watershed group in this watershed, nor is there known funding beyond the watershed planning grant for a watershed organization to be able to lead the efforts. Thus building collaboration is needed to gain supporters and increase chances of continual implementation of the project. Other governance approaches, such as a hierarchical structure, were not allowable due to the funding agency requirements. In addition, collaboration is needed in the Red Cedar Watershed in part to address a regulatory TMDL; to reduce information asymmetries about the watershed and its water quality; to develop shared formal goals and policies, joint work plans, and informal norms; and to form relationships.

### **Lessons Learned and Shared about Collaborative Watershed Management**

Collaboration can be difficult as it lacks a hierarchical organizational structure and can be particularly complex when participants' values conflict. Yet, viewing collaboration as a tool that is simply required in watershed management is less compelling than viewing it as an opportunity to foster a fair process and build social capital (Leahy & Anderson, 2010).

### **Characteristics of Successful Collaboration**

There are a multitude of case studies and studies summarizing groups of cases about collaboration that share lessons learned, including advice about characteristics of successful

collaboration and advice on the collaboration process. In Table 1, some of the lessons learned for watershed management planning, the process of watershed management planning, collaboration in watershed management planning, and landowner decision-making are summarized.

Table 1. *Select Lessons Learned about Variables Related to the Watershed Management Planning Process*

<b>Finding</b>	<b>Context</b>	<b>Source</b>
<b>Watershed Planning Process</b>		
Structural and procedural characteristics affect the outcomes: stakeholder involvement on the executive committee, decision-making procedures, information sharing, and time, funding, and personnel	Mandatory TMDL implementation in Florida	Borisova, Racevskis & Kipp, 2012
Organization type and funding source affect the type of work, categorized as assess, plan, or act, that will be undertaken by an organization	Watershed planning	Bidwell & Ryan, 2006
Six distinct criteria are indicators of success: stakeholder perceptions about the effects of their work on the watershed, perceived effect on human and social capital, level of agreement met, restoration projects completed, education and outreach completed	Watershed management	Leach, Pelkey & Sabatier, 2002
Participants' values in the consensus building process need clarification	Watershed planning, Australia	Baldwin & Ross, 2012
Scientific consensus is important, but it is more important to involve and build community around shared values and agreements	Watershed planning	McGinnins, Woolley & Gamman, 1999

Table 1 (cont'd)

<b>Finding</b>	<b>Context</b>	<b>Source</b>
<b>Watershed Planning Process (cont'd)</b>		
Decisions about the amount of energy spent on organizational development as compared to direct water resource projects requires balancing	Watershed organization	Bonnell & Koontz, 2007
<b>Collaboration</b>		
Collaboration should be based on an understanding of how the environmental resource will be affected	Collaborative management outcomes on environment	Koontz & Thomas, 2006
Various types of Multiple Criteria Analysis are frequently being used for water resource planning	Water resource planning	Hajkowicz & Collins, 2007
Specific issue attributes affect the need for collaboration and the willingness of stakeholders to participate in collaboration in a specific case study	Watershed planning stakeholder involvement	Smutko, Klimek, Perrin & Danielson, 2002
Clarification of roles and decision-making responsibilities of participants, volunteers, paid personnel, and agency personnel helps to improve collaborative group dynamics	Watershed management	Floress, Prokopy & Ayers, 2011
Collaboration strategy use may not necessarily improve the BMP adoption rate	Agricultural BMP adoption rates in watershed groups	Campbell, Koontz, & Bonnell, 2011
Geographic scale of the watershed work affects the collaborative process and stakeholder interaction	Select Oregon watersheds	Cheng & Daniels, 2005

Table 1 (cont'd)

<b>Finding</b>	<b>Context</b>	<b>Source</b>
<b>Collaboration (cont'd)</b>		
A majority of surveyed stakeholders believe democratic characteristics of the collaborative process are occurring in the watershed partnerships	Watershed partnerships in Washington and California	Leach, 2006
Decision-making tools, used appropriately, improved the collaborative planning process in a specific case study	Watershed planning process	Smolko, Huberd & Tam-Davis, 2002
A model evaluated and modified for collaborative environmental planning suggests key stakeholder involvement factors, including organizational structure, and inclusion of stakeholders in data collection	Select watershed groups in the Intermountain West	Benthrop, 2001
Collaboration and social capital have a complex relationship, and group characteristics affect social capital. In particular, perceived successful outcomes of collaboration positively affect social capital	Community based collaborative natural resource management in Northwest Colorado	Wagner & Fernandez-Gimenez, 2009
The incorporation of social capital is beneficial to a watershed group and community	Agency lead watershed management	Leahy & Anderson, 2010
<b>Landowner Decisions</b>		
Farmers' decisions on which conservation practices to adopt are affected by many variables; thus it is difficult to predict farmers' conservation adoption patterns	Midwestern farming conservation practices	Napier & Tucker, 2001
Farmers' rationales for conservation practice adoption are difficult to predict as they are not one homogenous group	Select Oregon watersheds	Habron, 2004



Table 1 (cont'd)

<b>Finding</b>	<b>Context</b>	<b>Source</b>
<b>Landowner Decisions (cont'd)</b>		
Landowners' conservation practice adoption and preferences vary based on socio-economic, cultural, and land use conditions	Selected Oregon watersheds	Rosenberg & Margerumb, 2008
Characteristics of active participants in watershed organizations vary by group type. Active participants are more likely to be politically active and have previous watershed knowledge. Soft skills, such as open communication, practiced by a watershed organizer can also increase participant activity	Selected collaborative watershed groups in Ohio	Koehler & Koontz, 2008
Farmers connected with a policy network have higher rates of BMP implementation	BMP adoption in agricultural watersheds	Lubell & Fulton, 2008
Regulatory push influences the first BMP adopters and community pull influences the late BMP adopters	BMP adoption behaviors of farmers as it affects nonpoint source pollution	Welch & Marc-Aurele, 2001

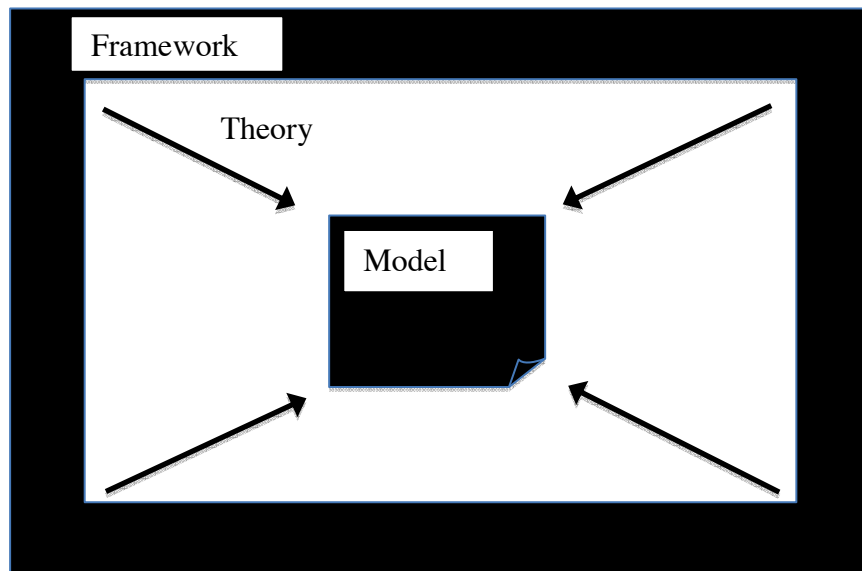
Despite extensive research, some collaborative watershed management processes still experience problems in implementation. The case studies suggest an array of characteristics needed for successful collaboration, and incorporating all of these lessons into a single collaborative process would not be feasible, as all of the findings do not apply to each case. Understanding how and when to incorporate these characteristics and how they are related to one another strengthens understanding of how to implement effective collaborations. The findings need to be organized and appropriately applied. Some suggest that the collaboration process must be matched with its context while others try to understand the patterns of the studies to date and call for expanding on developing the patterns.

To understand this large-scale analysis of a decision-making process, three different levels of analysis describe different degrees of detail. The frameworks, theories, and models can help organize what is known about collaboration through public participation in different scenarios (Imperial, 2005; Ostrom, 2007; Webler & Tuler, 2002).

### **Frameworks, Theories, and Models**

Because collaboration cannot be described as one specific process, it can be understood more broadly as following a generic set of rules. Human norms or social rules are institutions, and in helping to understand institutions, Ostrom (2007) describes three different levels of analytical specificity: frameworks, theories, and models. With different degrees of detail, frameworks, theories, and models relate how one specific set of social rules and conditions affect actions taken by people and the ultimate outcomes (Ostrom, 2007). A framework identifies universal elements and relationships between elements used in institutional analysis (Ostrom, 2007). Frameworks “provide the most general list of variables that should be used to analyze all types of institutional arrangements” and “attempt to identify the universal elements that any theory relevant to the same kind of phenomena would need to include” (Ostrom, p. 25, 2007). A theory focuses on details within a framework and makes specific assumptions that relate a phenomenon to certain processes and predicted outcomes (Ostrom, 2007). Many theories may be applicable to one framework. A model is even more specific and “makes precise assumptions about a limited set of parameters and variables” (Ostrom, p. 26, 2007) within a theory. Many models may be applicable to one theory. In the case of watershed management, models can relate how individuals collectively make decisions about the management of their land, which is affected by

private landownership rules, to a watershed management plan, and ultimately the watershed outcomes that occur. A visual aide is presented in Figure 1 to describe this hierarchy.



*Figure 1.* Relationship between Frameworks, Theories, and Models (adapted from Ostrom, 2007).

For this research, the Dynamic Framework for Watershed Management (Lubell et al., 2005), the Theory of Fair and Competent Public Participation (Webler & Tuler, 2002), and the Appreciative Inquiry Model are applied to organize the information available about successful collaborations and describe a process for collaboration.

### **Dynamic Framework for Watershed Management**

The Dynamic Framework for Watershed Management is a normative and positive framework based upon numerous studies of collaborative watershed management, the implications of the

findings, and further developed recommendations (Lubell et al., 2005), where normative statements describe how things ought to be and positive statements describe what currently exists.

The Dynamic Watershed Framework encompasses six major groups of factors that affect collaborative watershed management:

- **Process**, which includes institutions for collaborative management;
- **Context**, which incorporates the socio-economic conditions, the civic community conditions, the ecological conditions, and the government institutions;
- **Legitimacy**, which is related to many of the variables
- **Civic Community**, which incorporates trust, political efficacy, collective action beliefs, human capital, and social capital;
- **Policy Output**, which includes plans and projects; and
- **Watershed Outcomes**, which includes perceived and actual ecological and socioeconomic changes (Lubell et al., 2005).

In each new scenario, the factors vary, and some but not all of the relationships between the factors of the framework have been tested (Sabatier, et al., 2005). Most importantly, the proposers of this framework, “speculate that variation in collaboration institutions is mainly due to the relationships between the contexts in which the institutions operate (what Ostrom calls the action-decision arena) and the type of institutional structure that best fits a particular context” (Lubell et al., p. 264, 2005) as successful institutions adapt to their context.

The Dynamic Framework of Watershed Management (Lubell et al. 2005) was developed based on what was observed in collaborative watershed management cases and proposes what ought to be considered in such cases (Lubell et al., 2005). Lubell et al. (2005) suggest success is more likely in collaborative watershed management if these factors are attended to, but the framework is too general to fully understand the relationships among context, process, and outcomes. It is applicable to use in framing and evaluating the Red Cedar collaborative watershed management. For this research the Dynamic Framework of Watershed Management is used as a starting point for evaluating the key factors it incorporates.

### **Matching Context and Process**

Though this is not expected to be formulaic, many say that collaboration and stakeholder involvement processes need to align with their contexts (Bonnell & Koontz, 2007; Campbell, Koontz & Bonnell, 2011; Smutko, et al., 2002). Process and context are two key elements of the Dynamic Framework of Watershed Management (Lubell, et al., 2005). Campbell et al. (2011) compare the success of grass roots watershed management to traditional agency-led watershed management and find both methods prove successful depending upon their context. Bidwell and Ryan (2006) show that different organizational structures choose to take on different types of work through interviews with a variety of watershed partnerships.

Tuler and Webler (2010) attempted to determine whether a meaningful relationship could be identified between the process and context and found that preferences for process were also associated with experiences, motives, and group identity. “Peoples’ satisfaction with the process

will be determined, in part, by its performance on outcome criteria. Different people will evaluate the same process differently because it is seen as likely to produce different kinds of outcomes” (Tuler & Webler, p. 262, 2010).

A list of practitioners’ shared that experiences on ways to involve the public and experiences about what constitutes a good process includes a variety of important characteristics. Webler and Tuler (2001) define a good stakeholder involvement process generically as being:

- Credible and legitimate,
- Competent and information driven,
- Fostering fair and democratic deliberation, and
- Emphasizing constructive dialogue and education.

Imperial suggests a process that avoids magnifying negative experiences as he found:

negative experiences had much stronger effects on their willingness to participate in collaborative activities than did positive ones. Accordingly, public managers are advised to avoid situations that have a high risk of failure, particularly when the participants have a limited base of collaborative experience. Instead, they should be strategic, focus on problems that are manageable, look for opportunities where there is strong political support, and focus their efforts where the likelihood of success is high. This provides public managers with the requisite time needed to build relationships and trust while they learn how to work together. (Imperial, p. 310-311, 2005)

Advice about the collaborative process is widespread, and the literature suggests that there is no one right process that satisfies all situations.

### **Types of Public Participation Processes**

Observations from practitioners and stakeholders involved in natural resource management relate perceived context and preferred outcomes to the variables of the process of public participation (Tuler & Webler, 2010). Through an adaptive planning process and systemic evaluation, the context can be understood and a process selected (Tuler & Webler, 2010). Four different perspectives on public participation processes were identified based on the varied roles of science and management structure in each, including:

- Science-centered,
- Informed democratic deliberation,
- Agency-centered, and
- Egalitarian deliberation (Tuler & Webler, 2010).

Characteristics of each perspective were summarized based on participants' preferences for outcomes (Tuler & Webler, 2010). Where science is to play a supporting role and where the management is deliberative and democratic, the egalitarian deliberation type of public participation process is preferred (Tuler & Webler, 2010).

The process hypothesized to best fit the context and desired outcomes of the Red Cedar River Watershed, described later in Chapter 3, is the egalitarian deliberation process. The process emphasizes improving participants': "skills to take part effectively... understandings of the

issues...understandings of others' beliefs, values, and perspectives...ability to work together better, and confidence and self-esteem" (Tuler & Webler, p. 259, 2010). It deemphasizes having an agency dominate the process. It also consequently emphasizes preferred outcomes of social capacity over substantive policy and deliberation instead of analysis (Tuler & Webler, 2010).

A few elements of the egalitarian deliberation process apply specifically to the case. In the Red Cedar River watershed where there is no longstanding watershed organization, it is important to empower citizens and other organizations to participate. "To be empowered requires a firm understanding of the issues and what others want and think. This is especially important in contexts where there is a high degree of cultural diversity among the regional communities" (Tuler & Webler, p. 263, 2010). In addition, the process and the sources and causes of the problem are to be defined through the watershed management planning process through stakeholder involvement and scientific data collection and can be done using the egalitarian deliberation process; "egalitarian deliberation was associated with the belief that there is not much clarity about the mandate for the process or that the "right" problem is well understood...a good process in this context requires that people be empowered to participate effectively" (Tuler & Webler, p. 262, 2010). The egalitarian deliberation process is emphasized in this study.

### **Public Participation Theory**

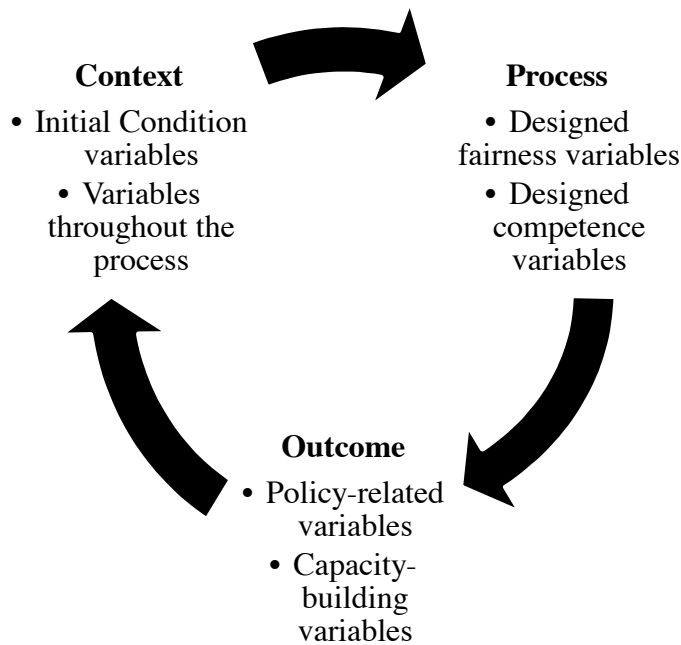
The Theory of Fair and Competent Public Participation proposed by Webler and Tuler (2002) can be used to better connect the context, process, and other variables in the Dynamic Framework for Watershed Management. In particular, this theory connects four of the factors of



the Dynamic Framework for Watershed Management: context, process, policy output, and civic community outcomes.

The Theory of Fair and Competent Public Participation was proposed by Webler and Tuler (2002) to fill the gap left by a lack of proposed and tested public participation theories. The theory was intended to benefit public participation practitioners and help “generalize knowledge beyond each practitioner’s experience...highlight preconditions that can influence the process...focus attention on intermediate indicators of desired outcomes...help match method with purpose...help predict outcomes of intervention” (Webler & Tuler, p. 181, 2002). The theory proposes that fairness and competence are central and important for successful public participation (Webler & Tuler, 2002).

This theory describes the variables in a participatory process as the context, process, and outcome variables (see Figure 2). The context is viewed as an input affecting the process, which in turn affects the capacity building and policy related outcomes. Both types of outcomes then complete the cycle and affect the initial conditions, changing the landscape (context) for the next process. In public participation cases, to connect the context with the desired outcomes, the appropriate process should be matched to the scenario and outcome preference (Webler & Tuler, 2002). The case-specific variables of the context and the desired results should be used to help select the process.



*Figure 2: Theory of Fair and Competent Public Participation (adapted from Webler & Tuler, 2002).*

The context includes the initial social and political conditions and variables that may be changed through the public participation process and affect the process itself (Webler & Tuler, 2002).

Some of these context variables that are specifically applicable in our case study include:

- Existing state of polarization,
- Legacy of trust or distrust,
- Other ongoing projects, and
- Qualities of social networks (Webler & Tuler, 2002).

The Theory of Fair and Competent Public Participation focuses on ensuring that fairness and competence are characteristics of the public participation process. Fairness includes allowing the participants to attend, contribute to the conversation, and help make decisions. Competence refers to an adequate ability for knowledge to be constructed through participants' access to information and an established process for decision-making (Webler & Tuler, 2002). Characteristics of fairness and competence are emphasized in the egalitarian deliberation perspective of stakeholder involvement, including improving participants skills to take part in the process and understanding others perspectives (Tuler & Webler, 2010). Characteristics of fairness are also included in the legitimacy factor of the Dynamic Framework for Watershed Management (Lubell et al., 2005).

Lastly, the process variables affect the outcomes. A variety of outcomes are possible, and the outcomes of this process are categorized as affecting either the policy or the capacity of the community affected and include:

- Policy Outcomes:
  - Collective satisfaction,
  - Reduction in risk,
  - Completed management plan,
  - Goals, tasks, timetable, and
  - Clear mandate.

- Capacity Related Outcomes:
  - Civic competence,
  - Degree of conflict,
  - Degree of trust,
  - Degree of empathy,
  - Level of knowledge,
  - Public participation organization skills,
  - Self-confidence, and
  - Tolerance for others' views (Webler & Tuler, 2002).

The policy and capacity related outcomes described by Tuler and Webler (2002) relate to public participation generally. Both process and environmental outcomes are components of the Dynamic Framework for Watershed Management (Lubell et al., 2005). However, successful collaboration is not, in itself, a final goal in watershed management planning. The ultimate goal is for “improved environmental outcomes” (Koontz & Thomas, p. 111, 2006). It is good practice to know what processes will result in the best environmental and social outcomes (Koontz & Thomas, 2006).

This theory is appropriate to apply to the case of the Red Cedar River Watershed Management Planning project since we have an understanding of the context we are working under and the

known desired outcomes, and we are looking to select an appropriate stakeholder involvement process. In summary, specific to the case study, we know the context variables:

- A watershed management plan is in progress to satisfy an existing TMDL,
- The existing political conditions, and
- The existing social conditions of the watershed.

We also know the desired outcome is to have:

- Stakeholder collaboration since there is no continuous established watershed entity,
- Surface water of a quality that is no longer regulated by a TMDL, and
- Surface water of a quality that meets the designated and desired uses of the watershed.

### **Models of Collaboration**

Finding a particular process model will help us to better understand the methods to use in building stakeholder collaboration. The literature about watershed management is rich with case studies, but very little is written about collaborative process models. General guidance and requirements detailing methods of the watershed management planning process can be found in watershed planning handbooks, such as the Handbook for Developing Watershed Plans to Restore and Protect Our Waters (EPA, 2008). Some have used known participatory tools such as affinity diagrams, flip charts, and the understanding of Tuckman's Cycle of Group Development: the stages of form, storm, norm, perform, and adjourn (Smolko et al., 2002). Others have made up their own processes; different models have been used in guiding collaborative watershed

management planning work (Spelleccy, 2009). One scientific model, Community Decision Support for Integrated, On-the-ground Nutrient Strategies (DECISIONS), involves soliciting and ranking stakeholder preferences by acting as an aide for stakeholders when choosing nutrient planning strategies. Participants believed the model helped to improve communication, but they criticized it for not incorporating enough collaborative discussion time and being too focused on the scientific model results (Bosch, Pease, Wolfe, Zobel, Osorio, Cobb, Evanylo, 2012). Benthrop (2001) proposes a model for collaborative environmental planning that connects the steps associated with each part of the collaborative planning process, from planning to implementation, including the antecedents, problem setting, direction setting, implementation, and monitoring and evaluation and is based on a catalyst starting the chain of events for collaboration.

Another model is the Model of Appreciative Inquiry, which avoids emphasizing problems and focuses on existing strengths. Appreciative Inquiry is an organizational change model that holds the assumption that “an organization is a mystery to be embraced” and not “a problem to be solved” (Hammond, p. 24, 1998). It outlines a process applicable in watershed management collaboration. It is a process of asking questions of an organization through four stages of exploration:

- Discovery- “What is,”
- Dream- “What might be,”
- Design- “What should be,” and
- Destiny- “What will be,” (Cooperrider et al., 2008).

The questions asked through these stages are phrased so that they facilitate the organization members' sharing of their opinions and ideas in a forward thinking and positive manner to promote change in that direction.

The process is set up to support the following principles:

- Positive Principle- positive change can be created by asking positive questions,
- Wholeness Principle- when organizations act collectively, strengths and creativity are fostered,
- Enactment Principle- for change to happen we must be what we desire,
- Free choice Principle- when people are given their own freedoms to choose, better outcomes result,
- Constructivist Principle- meaning is created through social discussions,
- Simultaneity Principle- change is created through inquiry,
- Poetic Principle- people can choose what they study and organizations are opportunities for study, and
- Anticipatory Principle- organizations move in the direction of their choice of study (Cooperrider & Whitney, 2005; Cooperrider et al., 2008).

In trying to achieve the results of these principles, the Appreciative Inquiry Model assumes that the following are true:

- “In every society, organization or group, something works.”

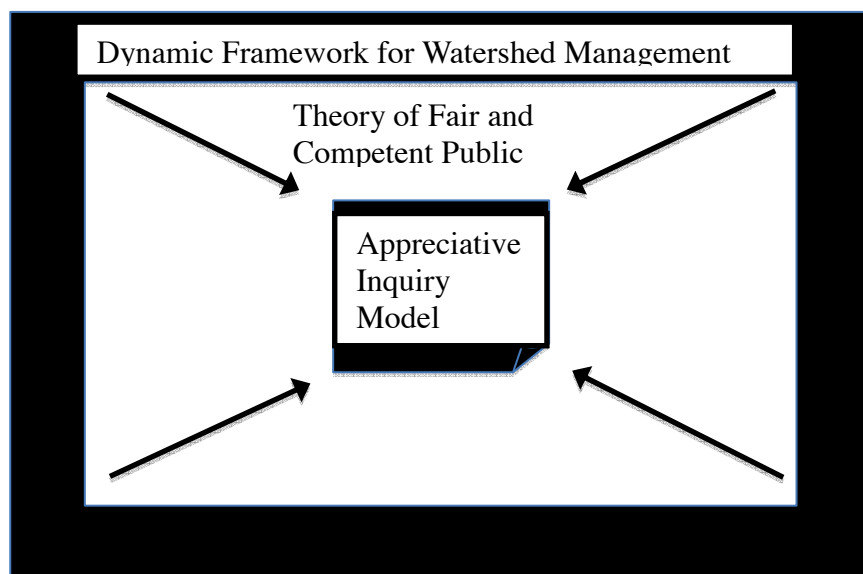
- “What we focus on becomes our reality.”
- “Reality is created in the moment, and there are multiple realities.”
- “The act of asking questions of an organization or group influences the group in some way.”
- “People have more confidence and comfort to journey to the future (the unknown) when they carry parts of the past (the known).”
- “If we carry parts of the past forward, they should be what is best about the past.”
- “It is important to value differences.”
- “The language we use creates our reality” (Hammond, p. 20-21, 1998).

The Model of Appreciative Inquiry is hypothesized to fit the context found in the Red Cedar River Watershed Planning Project that is described in more detail in Chapter Three. It also fits the characteristics of an egalitarian deliberation process. The model empowers the participants and encourages collaboration (Cooperrider & Whitney, 2005; Cooperrider et al., 2008), and the focus on positive exploration may diffuse polarization and distrust.

In some uses of Appreciative Inquiry, the process begins with, a “definition” stage, selecting an affirmative topic to focus on throughout the process (Cooperrider et al., 2008). The topic for this use of Appreciative Inquiry was established through the grant funded project goal that was set before the selection of the use of Appreciative Inquiry: improving water quality in the Red Cedar River Watershed.



We apply the Dynamic Watershed Management Framework, the Theory of Fair and Competent Public Participation, and the Appreciative Inquiry Model to the case study of collaboration with the agricultural stakeholders in the Watershed Management Planning Process of the Red Cedar River Watershed (see Figure 3). By following the process of Appreciative Inquiry and asking positively framed questions about an organization, through four stages, an organization should begin to move towards changing to reflect its new visions (Cooperrider & Whitney, 2005; Cooperrider et al., 2008). Success of the application of this process is measured with an analytical framework described in the next chapter.



*Figure 3.* Case Study Specific Framework, Theory, and Model Diagram (adapted from Ostrom, 2007).

## CHAPTER 3 ANALYTICAL FRAMEWORK AND METHODS

We use a case study in the Red Cedar River Watershed to implement and evaluate the Appreciative Inquiry Model as a tool to build collaboration among agricultural stakeholders for a plan to manage nonpoint source pollution in the watershed. Involving stakeholders is a requirement of the watershed management planning process. Relevant watershed management and stakeholder involvement theory described in Chapter Two were used to develop a specific stakeholder involvement process.

### **Context: Red Cedar Watershed Management Background Information**

The Red Cedar River watershed is approximately 461 square miles, and land use is comprised of 59% agriculture or bare; 14 % residential, commercial, or industrial; 13% forest or range; 14% wetland or water (Kline-Robach, 2012). After leaving the watershed, the water discharges into the Grand River, travels through the Middle and Lower Grand River Watersheds, and ultimately discharges into Lake Michigan. The location of the watershed is shown on Figure 4.



*Figure 4.* Red Cedar River Watershed Locator Map. For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this thesis.

A TMDL for *E. coli* was administered by the Michigan DEQ for portions of the watershed because designated partial and full body contact uses of the river were not being met (Department of Environmental Quality [DEQ], 2012). Recently, another draft TMDL was issued for portions of the watershed to address low dissolved oxygen levels, caused mostly from sedimentation and siltation that are negatively affecting the designated warm water fishery use of the watershed (DEQ, 2013). As a result of the current *E. coli* TMDL, grant funding from the

Michigan DEQ was awarded to Michigan State University (MSU) for the development of a Watershed Management Plan for portions of the Red Cedar River Watershed. The grant includes planning for prioritized portions of the watershed in order to prepare a reasonable scale of work. “The project goal is to create a plan to restore water quality in the Red Cedar River to support the designated uses of total/partial body contact recreation and WWF [Warm Water Fishery]” (Kline-Robach, p. 2, 2012). Through the planning process, pollutants and their causes and sources are identified, and the work is meant to complement (Kline-Robach, 2012) an existing watershed management plan that was developed for the urbanized area of the watershed to comply with National Pollutant Discharge Elimination System (NPDES) requirements (TetraTech, 2006).

The watershed management project planning team consists of the project manager at MSU, two subcontracted team members, including a private consultant with experience in watershed planning and an environmental planner, and me, an MSU graduate research assistant. To be eligible for the grant, MSU procured pledges from some watershed stakeholders, mostly employees of local jurisdictions, for grant matching resources in the form of project support, participation, and shared data.

The ultimate goal of the watershed project is for restored water quality achieved through the watershed management planning and implementation process (Kline-Robach, 2012). Typical to the process, a watershed management plan is drafted by the watershed management team with stakeholder input, approved by the Michigan DEQ, and, once approved, eligible for further grant funds for implementation of proposed action items. MSU as the grantee has intentions of

developing the watershed management plan with action items intended to improve water quality specific enough for implementation by MSU and by other organizations. MSU does not intend to lead a long-term watershed management organization, though it may be involved in some implementation of the plan. Because MSU will not play a continual leading management role through implementation, partners' approval and ownership of the plan is particularly important as they are the likely parties to implement the action items in the plan.

A number of local jurisdictions, including the health departments and jurisdictions with drinking water utilities, wastewater treatment plants, and Municipal Separated Storm Sewer Systems Permits agreed to support the watershed management planning process. In total, sixteen organizations or individuals wrote letters pledging financial support, often through their time, for the project. A majority of the partnerships involve paid local government employees, working mostly in the urban areas, performing the partnership duties during their workday. However, the *E. coli* impacts extend beyond just the urban areas, and, while the Michigan DEQ acknowledges the active urban watershed group, they report, "there is a need to coordinate planning efforts between the urban and rural areas" (MDEQ, p. 39, 2012). A major gap in existing plans and partnerships is in the rural areas, comprised mostly of agriculture in this watershed. The watershed management planning team viewed collaboration among agricultural stakeholders as a critical component of the watershed management planning process.

Given this context, the question became how to involve agricultural stakeholders in the watershed management planning process. The Dynamic Framework for Watershed Management, the Theory of Fair and Competent Public Participation, and other relevant literature were used to

help frame a process for gaining stakeholder involvement. The Appreciative Inquiry Model was selected as the specific model for building stakeholder collaboration. Using the watershed management planning project's desired outcomes, an analytical framework was designed to assess whether the Appreciative Inquiry Model helped attain the watershed management team's desired outcomes. Additionally, the analytical framework provides a structure with which to evaluate whether the Appreciative Inquiry Model achieves the outcomes desired from an egalitarian deliberation perspective of public participation (Tuler & Webler, 2010) and whether the legitimacy component of the Dynamic Framework for Watershed Management, not explicitly accounted for in the Appreciative Inquiry Model, is an outcome of this process.

### **Analytical Framework**

Through collaboration with agricultural stakeholders in this project, we try to better understand methods of collaboration in watershed management as related to current frameworks, theories, and models of watershed management and stakeholder participation. The stakeholder involvement process was designed and analyzed using a framework developed specifically for this research based upon the predetermined project needs and relevant watershed and public stakeholder participation literature. As described in Chapter Two, the Appreciative Inquiry Model, selected to guide the process of building collaboration among the agricultural stakeholders in this project, is an asset-based model used to promote positive organizational change. While the literature on frameworks, theories, and models provides general characteristics of effective stakeholder participation processes in watershed management, the specific characteristics can vary greatly case by case. This case study and analysis can add to the

understanding of how the Appreciative Inquiry Model can be applied based on the theory of Fair and Competent Public Participation and the Dynamic Framework for Watershed Management.

The analytical framework of this research was developed to address the following research questions:

1. Does the use of the Appreciative Inquiry Model in a collaborative watershed planning process achieve outcomes desired from the egalitarian deliberation perspective of public participation?
2. Does applying the Appreciative Inquiry Model facilitate collaboration among agricultural stakeholders to achieve the desired process and substantive outcomes of the Watershed Management Planning Project?

In this case study, a group of stakeholders was invited to participate in the watershed management planning process. Their insights about existing and preferred agricultural practices and programs in the watershed were sought to inform the process. Several specific process and substantive outcomes desired from the stakeholder participation were identified for this study, related to the literature and the watershed management planning project. Given philosophical similarities between the egalitarian deliberation perspective of public participation and the Appreciative Inquiry Model, the first substantive outcome sought from the collaboration building process using Appreciative Inquiry was to achieve outcomes desired in the egalitarian deliberation perspective of public participation. The second substantive outcome sought was legitimacy as described in the Dynamic Framework for Watershed Management, as this is not

explicitly accounted for in Appreciative Inquiry. In addition, specific outcomes desired to meet the needs of the watershed management planning project were sought including:

**Process Outcomes:**

- Participants attended meetings, and
- Participants participated at meetings.

**Substantive Outcomes:**

- Participants substantively participated at meetings,
- Progress was made toward identifying BMPs most applicable for the Red Cedar River Watershed,
- Agricultural landowners implemented BMPs,
- Participants engaged in and support the program coordination, and
- Improved water quality (see Table 2).



Table 2. *Analytical Framework*

<b>Process Outcomes</b>			
<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Measurement Approach</b>	<b>Measurement Tool</b>
Participants attend meetings	People come to one or more meetings	Meeting Attendance	Meeting Attendance
Participants participate at meetings	Participants identify other service providers who should be involved in the watershed management planning process	Meeting Question	What farmers or other agricultural service providers do you know who are supporters of BMPs and who have positive relationships in the community?
	Participants answer questions and share relevant information when asked	Researcher Observation	Review if information was collected that will contribute to the watershed management plan General overview of information collected at the meetings Evaluate number of responses received Evaluate tone of responses received
	Participants agree to sit on an agricultural committee for the watershed	Meeting Question	Are you willing to be a part of the Red Cedar River Watershed Management Plan Agriculture Subcommittee?
	Participants feel comfortable to participate with honesty	Post Meeting Evaluation Questions	Did you feel comfortable participating fully and honestly through this process? Did you feel this stakeholder participation process was a positive experience? How would you have improved it?

Table 2. (cont'd)

<b>Substantive Outcomes</b>			
<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Measurement Approach</b>	<b>Measurement Tool</b>
The egalitarian deliberation perspective of the public participation process is followed	The process improves the participants confidence in their abilities to take part in the watershed management planning process effectively	Post Meeting Evaluation Question	Did this process improve your skills to take part in the watershed management planning process effectively? What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed?
	The process improve the participants' understanding of others beliefs, values, and perspectives	Post Meeting Evaluation Question	Did the process improve your understanding of other participant's beliefs, values, and perspectives?
	The process improves the ability of participants to work together better	Post Meeting Evaluation Question	Did the process improve your ability to work with other participants on items related to water quality? What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed?
	The process improves the participants' confidence and self-esteem.	Future Evaluation	

Table 2. (cont'd)

Desired Outcomes	Indicators	Measurement Approach	Measurement Tool
The process is legitimate	The participants believe the planning process was fair	Post Meeting Evaluation Question	Did you feel comfortable participating fully and honestly through this process? Did you feel freedom with how and what you chose to contribute? Do you feel you are working collectively with other participants towards similar goals?
	The participants believe the outcomes of the watershed management plan will reduce <i>E. coli</i> water concentrations	Post Meeting Evaluation Question	Do you believe that work completed as a result of this process will reduce the levels of <i>E. coli</i> in the watershed?
	Long term changes to watershed socioeconomic and environmental outcomes	Future Evaluation	
Participants participate at meetings	Participants identify “early-adopter” producers in the watershed to include in the watershed management planning process	Meeting Question	What farmers or other agricultural service providers do you know who are supporters of BMPs and who have positive relationships in the community?

Table 2. (cont'd)

<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Measurement Approach</b>	<b>Measurement Tool</b>
Participants participate at meetings (cont'd)	Participants share a summary of their programs as they relate to water quality	Meeting Question	What are some of the most effective methods you use to work with the agricultural community to promote relationship building, changing conservation behaviors, BMP adoption, and helping to find funding for conservation practices? Meeting Attendance
	Participants answer questions and share relevant information when asked	Researcher Observation	Review if information was collected that will contribute to the watershed management plan General overview of information collected at the meetings Evaluate number of responses received Evaluate tone of responses received
	Participants agree to sit on an agricultural committee for the watershed	Meeting Question	Are you willing to be a part of the Red Cedar River Watershed Management Plan Agriculture Subcommittee?
	Participants' level of knowledge of the watershed management planning process increases	Post Meeting Evaluation Question	Did this process improve your skills to take part in the watershed management planning process effectively

Table 2. (cont'd)

<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Measurement Approach</b>	<b>Measurement Tool</b>
Progress is made toward identifying BMPs most applicable for the Cedar River Watershed	Participants identify where BMPs formerly existed and help figure out why they were removed or discontinued	Meeting Question	**How can we ensure our BMPs remain in use or not removed through the end of their useful life?
	Participants identify and prioritize appropriate BMPs for priority subwatersheds	Meeting Question Researcher Observation at Meeting	What are some of the most effective or accepted BMPs being used in this watershed? Where are they most successful? Reviewing the notes from the meetings, review if we have content that can contribute to the watershed management plan Evaluate gaps that the management team will have to supplement with additional information

Table 2. (cont'd)

<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Measurement Approach</b>	<b>Measurement Tool</b>
Participants engage in and support the program coordination	Participants identify program gaps that the watershed management team might address with an implementation proposal	Meeting Question, Researcher Observation	<p>What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed?</p> <p>What can we do to best utilize our existing strengths and make the BMP programs easier for producers to learn about, access, and adopt?</p> <p><b>**</b>What is a new approach we could try to improve water quality in this watershed?</p> <p>What is the smallest step we could take individually or together as a new group to have the largest impact?</p> <p>What would you like to add to what we came up with at our first meeting? Do you have different or additional visions and goals for the future?</p> <p>Review the notes from the meetings, review if we have content that can contribute to the watershed management team regarding program ideas to fill in for existing gaps</p>

Table 2. (cont'd)

<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Measurement Approach</b>	<b>Measurement Tool</b>
Participants engage in and support the program coordination (cont'd)	Participants help the watershed management team better understand constraints under which participants operate and propose appropriate programming incentives	Meeting Question	<p>What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed?</p> <p><b>**In the ideal world, what resources would you have available to you to optimize water quality, working relationships, and agricultural producer success?</b></p> <p><b>**What would the most ideal agricultural outreach experience for your organization look like?</b></p> <p>What can we do to best utilize our existing strengths and make the BMP programs easier for producers to learn about, access, and adopt?</p> <p>What characteristics would an ideal landscape and farm have in the Red Cedar River Watershed to optimize water quality and agricultural producer success?</p> <p>What would you like to add to what we came up with at our first meeting? Do you have different or additional visions and goals for the future?</p>
	Participants help us decipher available funding sources and eligibility criteria	Meeting Question	<p>What are the most useful and accepted funding and program resources available for conservation practices and who do they most cater to?</p> <p>What can we do to best utilize our existing strengths and make the BMP programs easier for producers to learn about, access, and adopt?</p>

Table 2. (cont'd)

Desired Outcomes	Indicators	Measurement Approach	Measurement Tool
Participants engage in and support the program coordination (cont'd)	Participants help to develop a plan to work closely with landowners in critical areas to identify BMPs or link them with existing programs	Meeting Question Researcher Observation	What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed? Review of all meeting discussion notes
	Common goals are developed among participants	Meeting Question Researcher Observation Report of watershed management plan status	**Thinking about the future, how could the watershed planning process create a useful and effective plan for watershed residents for improving water quality? What characteristics would an ideal landscape and farm have in the Red Cedar River Watershed to optimize water quality and agricultural producer success? What are your ideal visions and/or goals for the Red Cedar River Watershed as they pertain to water quality and agriculture? What would you like to add to what we came up with at our first meeting? Do you have different or additional visions and goals for the future? Tone of the meetings Review of researcher observation notes recorded after the meeting Report of watershed management plan status



Table 2. (cont'd)

Desired Outcomes	Indicators	Measurement Approach	Measurement Tool
Participants engage in and support the program coordination (cont'd)	Participants contribute ideas for actionable items for the watershed management plan	Meeting Question, Researcher Observation	What is the smallest step we could take individually or together as a new group to have the largest impact? **What is a new approach we could try to improve water quality in this watershed? Report notes from the meetings on what may be included in the watershed management plan
	There is a high level of agreement among participants	Researcher Observation at Meeting Post Meeting evaluation Question	Disagreements noted Review of researcher observation notes about the meeting Did you feel this stakeholder participation process was a positive experience? How would you have improved it?
	There is collective satisfaction	Post Meeting Evaluation Question	Do you feel like you are working collectively with other participants towards similar goals?
	Participants agree to and actually emphasize our priority 12-digit watersheds in their programming	Post Meeting Evaluation Question, Future Evaluation	Do you anticipate you and your organization will participate actively in implementing the final watershed management plan programming in the prioritized subwatersheds?

Table 2. (cont'd)

Desired Outcomes	Indicators	Measurement Approach	Measurement Tool
Participants engage in and support the program coordination (cont'd)	Partner organizations utilize their newsletters and websites to disseminate information about the watershed	Post Meeting Evaluation Question, Future Evaluation	Do you expect your organization to be able to help disseminate watershed planning information through your website and/or newsletter? Do you expect you or your organization to be able to help disseminate watershed planning information through your (circle one or more if applicable): website, newsletter, or word of mouth?
	Relationships within the watershed are improved	Post Meeting Evaluation Question Researcher Observation	Did you feel your working relationships with other participants improved through this process? Did the process improve your ability to work with other participants on items related to water quality?
	The partnership is continued over time	Future Evaluation	
	There is improved organizational capacity	Future Evaluation	
Agricultural landowners implement BMPs	Agricultural landowners implement BMPs	Future Evaluation	
Watershed water quality is improved	There is an approved watershed management plan developed through this process	Future Evaluation	
	A monitoring component is developed for the future	Future Evaluation	

Table 2. (cont'd)

Desired Outcomes	Indicators	Measurement Approach	Measurement Tool
Watershed water quality is improved (cont'd)	The participants believe the outcomes of the watershed management plan will reduce <i>E. coli</i> water concentrations	Post Meeting Evaluation Question	Do you believe that work completed as a result of this process will reduce the levels of <i>E. coli</i> in the watershed?
	The watershed becomes eligible for future funding	Future Evaluation	
	Partner organizations complete watershed management plan action Items	Future Evaluation Post Meeting Evaluation Question	Do you anticipate you and your organization will participate actively in implementing the final watershed management plan programming in the prioritized subwatersheds?
	<i>E. coli</i> concentrations in the watershed are measurably reduced	Future Evaluation	
	The watershed's is no longer regulated with a TMDL	Future Evaluation	

\*\* - Meeting question was not asked, or was combined with another question due to time constraints

Indicators were developed to assess whether the desired outcomes were achieved. The indicators were measured using various approaches, including questions asked at meetings, post-meeting survey questions, specific researcher observations at meetings, researcher observations post-meetings, and a review of meeting attendance. Questions used to elicit information at the meetings were phrased and organized according to the principles of the Appreciative Inquiry Model. The analytical framework used to evaluate the outcomes of the application of the Appreciative Inquiry Model is shown in Table 2. The first set of rows in the table shows the process outcomes and the second section shows the substantive outcomes. In the first column, the desired outcomes are listed. The indicators used to evaluate whether or not the desired outcomes were achieved are listed in the second column. The approaches used to apply the indicators are listed in the third column. The specific measurement tools and/or questions used to apply each of the indicators are listed in the fourth column. Due to the timing of this research within the larger watershed management planning project, not all outcomes and their indicators could be fully addressed in this research. Future activities of the planning team and implementation of the plan are expected to contribute to some of the outcomes identified as important accomplishments from stakeholder collaboration.

### **Agricultural Stakeholder Meetings**

To partner with the agricultural landowners in rural areas, the watershed management team first turned for support to organizations that provide services to the agricultural community, referred to as agricultural service providers for purposes of this thesis. Three organizations had already provided commitments to support the watershed management planning process, but many other

organizations had not been reached. A number of these organizations have been working with reduced resources compared to their past and to similar organizations in other regions. Many of these agricultural service provider organizations are regional satellites of state or federal organizations or agencies. As the watershed spans jurisdictional boundaries, in more than one instance two or more different service providers from the same type of organization provide service coverage of the watershed.

Second, the watershed management team worked to involve agricultural producers farming in the watershed who were already known to be supporters of environmental conservation practices. As this involvement was done as a part of the planning stage and not the plan implementation, the goal of their involvement was to learn about their opinions of BMPs and preferred methods of outreach and education. Educating producers about environmental conservation practices was not the intent of the collaboration being sought. Incorporating the stakeholders' input can be helpful in creating stronger new programs (Forester, 1999). In addition, the watershed management team wanted to get the "early-adopters" and leaders involved in the watershed planning efforts, as their support can help to influence others in the community to adopt BMPs (Lamba et al., 2009; Rosenberg & Margerum, 2008; Welch & Marc-Aurele, 2001). For these reasons, only producers known to be proactive environmentally were invited to participate in this part of the collaborative process. Together the agricultural service providers and the proactive agricultural producers comprised a stakeholder group with whom the watershed management team could build collaboration for the development of the watershed management plan. The watershed management plan will include plans to reach other agricultural

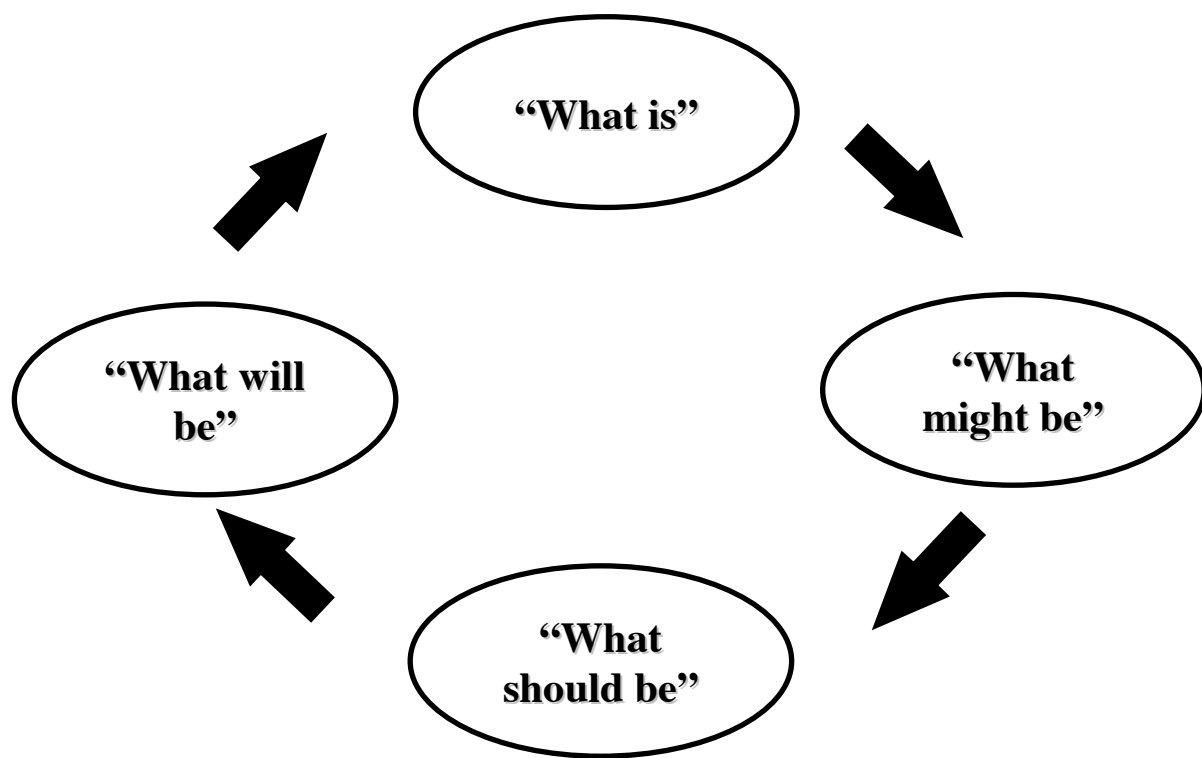
stakeholders, including other farmers who were not included among the stakeholders in this phase.

### **Meeting Format**

Two two-hour stakeholder meetings were held over a period of about two months. Agricultural service providers were invited to the first meeting with the watershed management team. Agricultural producers and agricultural service providers were invited to the second meeting with the watershed management team. A copy of the emailed invitation to these meetings is included in Appendix A. The intent of the meetings was to collect information needed for the watershed management planning as determined by the watershed management team, such as information about agricultural service provider programs as they relate to water quality and the identification of program gaps that we might address in the watershed management plan, and to build support for the watershed management planning project. The list of desired information was categorized into desired outcomes. The information was solicited by asking questions of the participants at the meetings, described in more detail below.

The meetings began with participant introductions and a presentation of project background information applying from the beginning the principles of Appreciative Inquiry: the tone of the opening part of the meeting was set to be very positive, appreciative, relaxed, and open, with an emphasis on wanting to learn from participants and expand the programs and practices in the watershed that were already protecting and improving the water quality. The lead project manager introduced the meeting's purpose, more specific details about the project and watershed, including the TMDL and results of *E. coli* sampling that had been done previously.

As a part of my research protocol, I explained that, with the participants' approval, research would be conducted on the process and outcomes of the meeting within the watershed management planning project. I also briefly reviewed the meeting agenda and the four phases of Appreciative Inquiry that were to be followed in the meeting, using the diagram in Figure 5. However, principles of and assumptions about the Appreciative Inquiry Model were not emphasized.



*Figure 5: Phases of the Appreciative Inquiry Model (adapted from Cooperrider et al., 2008).*

Following the Appreciative Inquiry Model, the meeting agendas were designed around four phases of questions: "what is", "what might be", "what could be", and "what will be" (Cooperrider & Whitney, 2005; Cooperrider et al., 2008). The agendas and the questions,

written to apply the Appreciative Inquiry Model, for the two meetings are in Appendices B and D. Questions were written on large flip-charts, and the attendees' attention was directed to the different questions as the meeting progressed. The attendees were asked to read each question, as a way of keeping the setting informal, and the full or a paraphrased question was read aloud. At times, the meeting conversation moved to answer questions on the agenda without prompting or to related topics that were not on the agenda and these additions were recorded as best possible. Further specifics of each meeting are detailed below.

### **First Agricultural Stakeholder Meeting**

Agricultural service providers who work in the watershed were invited to the initial meeting. Thirteen people from nine organizations, including county government, federal government, state government, MSU Extension, and non-profit organizations were invited by email to participate. These stakeholders work with the agricultural industry; some have farms, but that is not their main source of income. In addition, the watershed management leadership team of four people was invited to attend the meeting. Ten people attended the first meeting in total. All phases of the Appreciative Inquiry Model were explored during this meeting through different agenda items and subsequent Appreciative Inquiry questions, though the focus of the first meeting with the agricultural service providers was the “what is” and “what might be” phases of the Appreciative Inquiry Model. Appreciative Inquiry phases and their respective agenda items are below:

- “What is?” - Share with us: What is the current status of your organization’s work in the Red Cedar River Watershed?



- “What might be?”- Share with us: What are your visions and goals for the future of the Red Cedar River Watershed?
- “What could be?”- Share with us: What would you like to include in the Red Cedar River Watershed Plan?
- “What will be?” -Share with us: What actions might you take in the watershed planning process?

### **Second Agricultural Stakeholder Meeting**

The group invited to the second meeting included agricultural producers and some of the agricultural service providers invited to the first meeting. The agricultural producers who were invited were suggested by those attending the first meeting or by agricultural service providers who were invited but did not attend the first meeting. Five agricultural producers were contacted by phone and invited to a meeting to participate in the watershed management planning and research processes; four producers attended. Eleven people in total attended the second meeting: four agricultural producers, three agriculture service providers who attended the first meeting, and all four watershed management team members.

The agricultural producers invitee list is likely not a comprehensive list of all agricultural producers in the watershed who support and practice BMPs. A variety of opinions were desired, but this need was balanced with meeting dynamics. The watershed management team feared that

the attendance of too many participants might hinder full participation or would increase the chances of controversy. Controversy could possibly lead to disrupted relationships or chances of not collecting the desired information. In addition, the discussion was not to be about *whether* we should make plans for improving water quality but *how* to do so.

Producers at the meeting indicated little familiarity with watersheds, watershed planning, and TMDLs, and thus the introduction of this background information, review of some of the information collected at the first meeting, and the research project, took approximately one hour. After the project, watershed, and research introduction, the Appreciative Inquiry and content of the meeting began. All phases of the Appreciative Inquiry Model were explored during this meeting through different agenda items and subsequent Appreciative Inquiry questions, though the focus of the second meeting with the producers and agricultural service providers was the “what could be” and “what will be” phases of the Appreciative Inquiry Model. The Appreciative Inquiry phases and their respective agenda items are below:

- “What is?” - Past Meeting Review: What is our current status? What are our visions and goals for the future?
- “What might be?”- Share with us: Additions or edits to our visions and goals for the future?
- “What could be?”- Share with us: What would you like to include in the Red Cedar River Watershed Plan?

- “What will be?”- Share with us: What actions might you take in the watershed planning process?

### **Evidence Collection and Organization**

Evidence was collected in a variety of ways throughout and after the meetings:

- Meeting attendance;
- Responses during the meetings summarized and recorded on the flip charts throughout the meetings;
- Researcher observations collected during the meetings, including records of the number of different attendees participating in the responses to each of the questions, the tone of each response recorded as positive, neutral, or negative, and any disagreements;
- Research observations collected after the meetings summarizing information and conversations that took place as an aside to the formal part of the process or comments that particularly diverted the meeting from the planned agenda; and
- A post-meeting survey questionnaire.

The post-meeting survey questionnaire was emailed to the attendees of the first meeting soliciting feedback about the process. A post meeting survey questionnaire was handed out at the end of the second meeting soliciting feedback about the process. Six out of ten participants responded to the survey after the first meeting. Ten out of eleven participants responded to the

survey after the second meeting; I, the researcher, was the only person who did not respond to the survey.

### **Analysis**

Answers to questions elicited during the meetings, post-meeting survey responses, researcher observations, and attendance information from the meetings were summarized. The post meeting survey questions are included in Appendices C and E. The meeting discussion evidence included in Appendices F and I. The responses to the post meeting survey questions are included in Appendices G and J. The recorded researcher observations are included in Appendices H and K. A qualitative case study analysis was conducted using collected evidence and the analytical framework following modified methods described in Gillham (2010). Analysis of indicators was undertaken to determine whether process and substantive outcomes were met and ultimately, to respond to the research questions. Results of this analysis are presented in chapter four.

## CHAPTER 4 RESULTS AND CONCLUSIONS

This research applied the Appreciative Inquiry Model to a process of building collaboration for the watershed management planning project in the Red Cedar River Watershed. Data were collected through stakeholder meetings and analyzed according to the framework presented in Chapter 3. Two research questions were posed:

1. Does the use of the Appreciative Inquiry Model in a collaborative watershed planning process achieve outcomes desired from the egalitarian deliberation perspective of public participation?
2. Does applying the Appreciative Inquiry Model facilitate collaboration among agricultural stakeholders to achieve the desired process and substantive outcomes of the Watershed Management Planning Project?

Three sets of outcomes were sought as evidence for the research questions. These outcomes included substantive evidence that egalitarian deliberation and legitimacy were achieved and both process and substantive outcomes related to watershed project goals.

### **Egalitarian Deliberation Category of Public Participation**

A substantive outcome sought from the collaborative process was to successfully follow an egalitarian deliberation public participation process.

**Substantive Outcome: The achieved outcomes met the egalitarian deliberation perspective of public participation**

An evaluation of the indicators assessed in this case study of stakeholder collaboration supports the presence of characteristics of the egalitarian deliberation perspective of public participation. To explore whether the use of the Appreciative Inquiry Model in our collaborative watershed planning process achieved egalitarian deliberation in public participation (Tuler & Webler, 2010), four different indicators were proposed in the analytical framework. Three indicators were measured through post meeting evaluation questions. One indicator, whether the process improves the participants' confidence and self-esteem, could be measured in the future.

*Indicator: The process improves the participants' confidence in their abilities to take part in the watershed management planning process effectively*

Of 16 total responses collected after both meetings, the majority of stakeholders, 13, agreed that the process improves their confidence in their abilities to take part in the watershed management planning process effectively. One stakeholder reported they already had the confidence, another reported that they learned from the process, while another reported that they were not sure yet if the process improved their confidence.

*Indicator: The process improves the participants' understanding of others' beliefs, values, and perspectives*

Of 16 total responses collected after both meetings, the majority of stakeholders, 14, said the process improved their understanding of others' beliefs, values, and perspectives. One stakeholder indicated they already understood other's perspectives while one stakeholder responded it only improved their understanding some.

*Indicator: The process improves the ability of people to work together better*

Similarly, of the 16 total responses collected after both meetings, the majority of stakeholders, 13, agreed that the process improves their ability to work together better on items related to water quality. One stakeholder reported they already had the ability, another stakeholder was not sure yet, and another did not respond.

Support also was shown for the process in a comment made during the first meeting when a participant noted that the group could meet more frequently to optimize working relationships with producers in the watershed.

These results indicate that this planning process achieved outcomes desired for egalitarian deliberation in public participation (Tuler & Webler, 2010), empowering the participants in the process.

*Indicator: The process improves the participants' confidence and self-esteem*

This indicator can be evaluated in the future.

## **Legitimacy of Process**

A substantive outcome sought from the collaborative process was to achieve legitimacy, a component of the Dynamic Watershed Management Framework that is not explicitly accounted for in the Appreciative Inquiry Model.

### **Substantive Outcome: Legitimacy**

From the indicators measured, the process is considered fair, but it is too early to tell if this process will produce legitimate beneficial environmental outcomes. In the Dynamic Watershed Management Framework, legitimacy is connected to all of the factors within the framework.

*Indicator: The participants believe the outcomes of the watershed management plan will reduce *E. coli* water concentrations*

One way legitimacy was measured was by asking stakeholders after the second meeting if they believed outcomes of the watershed management plan would reduce bacteria levels. This was used to evaluate whether stakeholders believed their work would make a difference. There was no consensus in responses from the stakeholders. Four of nine responses were that stakeholders did not know; three of nine responses were that it would reduce bacteria levels; and two of nine responses were that it might reduce bacteria levels.



Indicator: The participants believe the process was fair

In addition, legitimacy was measured by asking stakeholders if they felt the process was fair. Responses following both meetings all indicate participants felt comfortable participating fully and honestly through the process. In addition, responses following both meetings all indicate participants felt freedom with how and what they chose to contribute. Procedural fairness in this evaluation is considered to include whether participants felt their contribution was heard. Lubell et al. found that “while not all attempts at inclusiveness succeed....[there is] some evidence that involvement in collaborative institutions does satisfy many of the participants’ own concerns regarding procedural fairness” (p. 281, 2005). Though participants were not asked directly if they felt their contributions were heard and going to be incorporated, we can deduce this from the post-meeting surveys. The majority of participants, 13 out of 16, responded that they felt they were working collectively with other participants towards similar goals. Two participants responded that they somewhat were working collectively with other participants towards similar goals, and only one participant responded that they did not think they were working with other participants towards similar goals yet. Deducing from this response, the process is considered fair.

Indicator: Long term evaluation of outcome changes to watershed socioeconomic and environmental conditions

This indicator cannot be measured until implementation of the watershed management project is underway. The analytical framework proposes a long-term evaluation of watershed socioeconomic and environmental outcomes as a measure of legitimacy in the future (Lubell et al., 2005).

## **Watershed Project Goals**

The process and substantive outcomes sought from the collaborative process related to the watershed management planning project goals were:

### **Process Outcomes:**

- Participants attend meetings,
- Participants participate at meetings

### **Substantive Outcomes:**

- Participants substantively participate at meetings,
- Progress is made toward identifying BMPs most applicable for the Red Cedar River Watershed,
- Participants engage in and support the program coordination,
- Agricultural landowners implement BMPs, and
- Watershed water quality is improved.

The outcomes also reflect the policy-related and capacity-building outcome variables proposed in the Fair and Competent Public Participation Theory (Webler & Tuler, 2002).

### **Process Outcome: Stakeholders attend meetings**

*Indicator: People come to one or more meetings*

Based on the evidence used to measure this indicator, the stakeholders' meeting attendance outcome was only partially achieved. One purpose of the meeting was to collect information

from the agricultural stakeholders for the watershed planning project. Without stakeholder attendance at the meetings, the information cannot be collected. Stakeholders' continued participation throughout the different meetings is supportive of the watershed management team's needs of involving stakeholders, building partnerships, and acquiring stakeholders' support for their ultimate participation in the watershed plan implementation.

In the first meeting, outside of the watershed management team, 13 people were invited to participate from nine different organizations. Outside of the management team, six people attended from five organizations. This attendance represents about half of the people and organizations invited.

For the second meeting, outside of the watershed management team, nine agricultural service providers were invited from eight organizations. Three agricultural service providers attended from two different organizations. There was a decline in agricultural service provider participation from the first meeting to the second meeting. Five agricultural producers were invited to the meeting, and four producers attended the meeting. One producer agreed to attend the meeting, but did not show up. Nevertheless, based on the goals of the management team, there was adequate attendance from the agricultural producers at the second meeting.

The watershed management team goal was to have strategic attendance and participation from the appropriate stakeholders. Though many organizations and producers attended the meetings, the process did not have attendance from all key stakeholders. Although there was adequate participation from the agricultural producers, half of the invited agricultural service providers in

the watershed did not attend any meetings, and there was a decline in participation from the first meeting to the second meeting. Although it is unknown why some agricultural service providers did not attend, we can hypothesize that the lack of attendance could be due to time and resource shortages or a lack of interest. This outcome was only partially achieved.

### **Process and Substantive Outcome: Stakeholders participate at meetings**

The evidence indicates that stakeholders participated in the process and substantively contributed to the meetings. The watershed management team determined it needed specific information from the stakeholders for the planning process, and, without stakeholder participation, the information desired for the watershed management plan could not be collected. Stakeholder participation at the different meetings is also helpful for the watershed management team's needs of involving stakeholders, building partnerships, and acquiring stakeholders' ultimate participation in the watershed plan implementation. Stakeholder participation was measured at the meetings by evaluating the information contributed in the meetings, stakeholders' responses to questions asked of them after the meetings, and a general evaluation of the amount of responses solicited.

Participation is both a process and substantive outcome. The stakeholders participated in the process and achieved both the process and the substantive outcomes. The process outcome is evaluated by reviewing stakeholders' reported comfort in the process, their willingness to continue to participate, the amount and adequacy of the information collected, and the number of stakeholders providing responses. The substantive outcome is evaluated by reviewing stakeholders' willingness to continue to participate, the amount and adequacy of the information

collected, and their evaluation of whether or not the process improved their skills to take part in the process effectively.

*Process Indicator: Stakeholders feel comfortable participating fully and honestly*

One indicator used to measure stakeholders' participation at meetings required asking about their own comfort in participating in the process. All respondents after both meetings indicated that they felt comfortable participating fully and honestly through the process, validating that their level of participation in the process was honest. This response indicates adequate stakeholder participation.

Most participants, 13 out of 16, who responded indicated they felt the process was a positive experience, though many offered suggestions for improvement. Suggestions for improvement include opinions on which stakeholders to include or not include in the process, a request for the questions to be provided ahead of time, and setting a mechanism for follow-up. One person reported the process "was well done because I feel both sides learned things". Two stakeholders did not directly answer whether they thought the process was a positive experience but did include a suggestion to focus on sources outside of agriculture. One stakeholder, however, felt uncomfortable at the beginning of the second meeting, reporting the experience was positive "for the most part. There was a level of miscommunication and blaming ag at the beginning. I did feel slightly uncomfortable".

*Process and Substantive Indicator: Participants agree to sit on an agricultural committee for the watershed*

To assess both process and substantive outcomes, stakeholders' continued participation was also evaluated as an indicator of participation in the watershed management planning process as a member of an agricultural subcommittee. An adequate number of stakeholders are expected to be on an agricultural committee for the watershed. The watershed management project manager indicated the most desirable subcommittee would include at least one small scale and one large scale farmer and one agricultural service provider. When asked about willingness to sit on an Agricultural Subcommittee for the watershed, two producers responded that they would be willing, depending on their schedules. Three agricultural service providers continued to participate in the second meeting, though they did not commit to sitting on the subcommittee. The agricultural service providers were not formally asked to sit on the Agricultural Subcommittee, but two agricultural service providers have continued to work and share information with us through the planning process indicating their continued support. The inclusion of small farmers as well as larger farmers was a suggestion made at the second meeting, and, though names of small farmers who practice proactive conservation behaviors have been collected, no small farmer meeting has been held yet to solicit a small farmer subcommittee member. The small farmer stakeholder meeting is expected to happen during the project implementation. As a subcommittee is not intended to include all of the stakeholders, this response from participating stakeholders is evaluated as adequate.

Process and Substantive Indicator: Participants identify other service providers who should be involved in the watershed management planning process and participants identify “early-adopter” producers in the watershed to include in the watershed management planning process

Stakeholders shared helpful information when asked, indicating substantive participation. The willingness of stakeholders to offer suggestions of other possible participants, other agricultural service providers or farmers with positive community relationships and BMP supporters was an indicator of participation. Twelve additional organizations and five farmers were listed through this inquiry at the first meeting. Two responses to this inquiry were about problems in the watershed. After the meeting, additional information and names were shared.

After the second meeting, six additional farmer names were shared with the watershed management team. This response was adequate, provided the watershed management team with a list of other potential supporters or partners to contact, and showed support of the watershed management team’s efforts by the stakeholders involved. More than that, we invited producers whose names were shared at the first meeting to attend the second meeting and most of the producers attended, evidencing the information shared at the meetings contributed to gaining further stakeholder involvement, a desired outcome of the stakeholder involvement process.

Substantive Indicator: Participants share a summary of their programs as they relate to water quality

The stakeholders’ willingness to share helpful information about their existing programs for increasing conservation practices to improve water quality indicates substantive participation. Stakeholder responses to a question about their effective methods of promoting water quality

programs elicited descriptions of four methods currently used to promote relationship building and conservation behaviors, one method under consideration for use, three suggestions of new ideas that could be used to promote conservation behavior, and three additional pieces of relevant information. It is difficult to measure adequacy of substantive participation from these responses. A small number of responses about existing activities could be indicative of a lack of outreach taking place with the agricultural producers, evidence of a few proven effective methods or programs in use, a lack of proven effective methods of reaching the agricultural community, or a lack of participation in responding to the question. This response could also reflect poor meeting attendance by the agricultural service providers since half of the service providers invited were not in attendance. Most of those who did attend said they felt comfortable participating fully and honestly in this meeting process, and considering all stakeholders participated at some point during the meeting at which this was asked, it is not interpreted as a lack of participation and the quality of the responses is considered adequate.

A shortage of outreach identified with this question may reveal a watershed need. A mix of responses was contributed about current and possible methods of reaching the target audience and improving conservation practices, and some of the suggestions will likely go into the watershed management plan. The stakeholders' willingness to share helpful information on their existing programs indicates adequate substantive participation.



*Process and Substantive Indicator: Participants answer questions and share relevant information when asked*

Process and substantive participation is also measured by evaluating the contributions to the watershed management plan and planning process elicited from the meetings. Much of the information collected during the meetings can contribute to the watershed management plan for approval by the MDEQ and for ultimate eligibility for funding to support implementation in the watershed to help improve water quality. Many suggestions listed in the meetings are typically listed in watershed management plans for waters with elevated bacteria levels, such as recommending manure storage, cover crops, and filter and buffer strips. Other more area-specific information was shared that can be helpful in developing the watershed management plan, such as learning that, in the area, producers commonly perceive that free cattle access to streams is acceptable. However, fencing cattle from streams is an important BMP.

A variety of information was shared that is applicable to many different parts of the watershed management plan, including suggestions for financial resources, target audience populations to reach through outreach and education, information and education methods, potential partners, existing watershed activities, and some specific BMPs to apply in the area including manure storage management and excluding cattle from streams. Though it requires supplementing to meet all regulatory requirements, the information collected was adequate for inclusion in the watershed management plan.

In addition, at the first and second meeting, on average, approximately six participants contributed responses to each question asked. Though some participants responded more than others, every person contributed at least one response at each meeting (see footnote 4 in the Appendix K about responses from meeting 2). The tone of the majority of the responses was neutral or positive, and few responses had a negative tone. A positive or neutral tone is interpreted here as supportive participation from the participants.

In addition, researcher observations recorded after the meeting indicated that discussion throughout both meetings ensued with little need for facilitation, indicating stakeholders were participating in the process. However, not all responses followed the process format. Researcher observations upon completion of the meetings indicate that during the second meeting the discussion did not always answer the specific questions at hand. Often, agricultural service providers asked additional questions of the producers about the service providers' specific programs and ways to improve them. Some defensive answers or blaming responses were also recorded. Though the discussions did not always directly answer the question at hand, the meeting provided a place for discussion between service providers and producers, which are the two primary parties involved in the implementation of agricultural watershed management improvements. Therefore, despite going off topic during the meeting, the information collected was perceived as beneficial to the watershed management planning process, indicating that stakeholders substantively participated at the meetings.

*Substantive Indicator: Participants' level of knowledge of the watershed management planning process improves*

Another indicator of substantive participation is improved abilities of stakeholders to participate effectively in the watershed management planning process. Stakeholders' responses after both meetings indicated that 13 of the 16 respondents felt their participation in the meetings improved their skills to take part in the watershed planning process. One person replied they already had the appropriate skills, another replied maybe, and another replied that they learned from the meeting discussion. Most responding participants reported that they felt the process improved their ability to participate in the watershed management planning process; thus, substantial participation in the meetings was evident. Stakeholders were engaged enough to not only feel comfortable participating, but also to learn from the process.

**Substantive Outcome: Progress is made toward identifying BMPs most applicable to the Red Cedar River Watershed**

An evaluation of the indicators used to measure this outcome supports that this outcome was partially met, only some BMPs were discussed and additional BMP selection will need to be done in the future, but other important information regarding program implementation was shared. The watershed management team is seeking, through the watershed management planning process, a suite of BMPs that provides agricultural landowners a variety of options for implementation.

*Indicator: Participants help us identify and prioritize appropriate BMPs for targeted sub-watersheds*

One need of the management team was to hear from the local agricultural stakeholders which BMPs they believe are most applicable for this watershed. One indicator used to measure this outcome was responses from stakeholders about specific BMPs that are the most effective or accepted in the watershed and where they are most successful. Programs or BMPs were listed by the stakeholders: Michigan Agriculture Environmental Assurance Program (MAEAP), sediment loading reduction, manure storage, drain commissioner credit programs, filter and buffer strips, no-till, tile maintenance, conservation plantings, and wetland restorations. However, discussions noted that no-till has only a small presence in the watershed. Two types of educational support were listed. Specifics on where to apply each of these programs were not reviewed by stakeholders.

Researcher observations after the meeting noted that many responses to the questions asked during the meeting addressed communication and education, resources, and programs, not the specific technical information such as which BMPs work the best. The agricultural producers frequently said that there were many ways to farm and that everyone does things differently depending on what they can get to work for them for their income needs and with the equipment they have.

The questions asked for this indicator elicited a variety of responses that, while not directed specifically toward the question, are nevertheless applicable to many other parts of the watershed management plan, including suggestions for financial resources, target audience populations,

information and education methods, potential partners, existing watershed activities, and action item recommendations for agricultural service providers. This type of information is helpful in informing the planning and implementation process. For example, it was shared that, in this area, farmers typically find it acceptable to allow cattle free access to streams instead of considering it an unacceptable practice that contributes to pollution of the water. Also, assistance is needed by some producers to repair or upgrade BMPs that are not functioning properly. Responses also noted other watershed specific information perceived about agricultural service provider programs, barriers, and working relationships with agricultural producers. Additionally, some shared that the technical information is the important resource they rely on. These types of responses, though they did not provide lists of specific BMPs, can be valuable as they ultimately help to increase the likelihood of providing the services that producers find helpful and more successful program implementation when applied to the programs and services. Therefore, additional work by the watershed management team will be required to adequately address specific BMP selection in the watershed management plan. However, the suggestions discussed that improve successful implementation are important since a plan is only as good as its implementation and outcomes.

*Substantive Indicator: Participants identify where BMPs formerly existed and help figure out why they were removed or discontinued*

Another question used to measure this indicator and assess the outcome was asked but was not answered by the group due to a lack of time. Overall, the information collected was helpful, but much more work needs to be completed by the watershed management team to adequately complete the watershed management plan for this topic.

### **Substantive Outcome: Participants Engage in and Support the Program Coordination**

An evaluation of the indicators used to evaluate stakeholders' engagement in and support for the program coordination finds that overall participants did engage in and support the program coordination by offering helpful information about current standard practices and guidance for the planning and implementation processes. Though participant support was evidenced, some additional information needs to be collected and evaluated to complete the watershed management plan. A number of indicators are proposed for evaluating this and are summarized below. A full measurement of these indicators cannot be completed until the watershed management planning project is further underway and even into the implementation or monitoring phases.

*Indicator: Participants identify program gaps that the watershed management team might address with an implementation proposal*

Data for this indicator suggest the outcome was met; the suggestions elicited here dealt with working relationships, staffing, and implementation rather than specifics of any one program or BMP, and provided very helpful information. Stakeholders' identification of program gaps that could be addressed in an implementation proposal is one indicator of stakeholders' engagement and support of program coordination. This indicator was measured by asking questions in the meetings and by evaluating all meeting content collected. Three questions were combined into two questions at the first meeting due to time constraints and used to measure this indicator. In response to these two questions asked about optimizing relationships with farmers and about making small changes to have a large impact, the stakeholders provided three ideas to improve

the program coordination, one barrier that stakeholders face, and three different educational ideas to include in our plan to close program gaps. One suggestion in particular that will likely be included in the plan for implementation was to create a more holistic picture of what services each agricultural service provider offers since each provider does not currently understand what others provide. During the second meeting, other gaps and deficits were identified when stakeholders were asked how they could best use existing strengths to make it easier for producers to access, adopt and learn about BMP adoption. The discussion noted stakeholders missing from the conversation, including small farmers, horse owners, and landowners with septic systems and gaps in various program communication methods with producers, such as programs providing conflicting information, not enough support, or not enough communication of different types. Problems were also discussed at the second meeting that help the management team understand programming gaps, including problems with past working relationships, frustration with understaffing, turnover, communication from the service provider at inopportune times, and frustration when installed BMPs do not function properly. Again, the suggestions elicited here dealt more with program gaps that were related to working relationships, staffing, and implementation than specific technicalities of any one program or BMP, but still they provide very helpful information about existing conditions in the watershed programs now and what types of help are desired. The suggestions are considered helpful for understanding the program gaps in the watershed for the watershed management planning process.

*Indicator: Participants help us better understand constraints under which they operate and propose appropriate programming incentives*

The information from the meetings helped the watershed management planning team understand constraints of the stakeholders' operations and is indicative of participant engagement and support. Two questions selected for measuring this indicator were not asked due to time constraints. As described above in the program gaps section, one question designed to evaluate this was asked: What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed? In response to this question, three improvements were suggested, including meeting more frequently, using mass mailings that municipalities send out, and having a more holistic picture of what each resource does. One problem was noted: turnover of agricultural service provider employees. Many of the program gaps described above are also considered to be constraints, such as programs providing conflicting information, not enough support, or not enough different types of communication. In addition, understaffing at agricultural service providers, staff turnover, communication from the service provider at inopportune times, and frustration when installed BMPs do not function properly were mentioned in the meetings and are considered to be constraints. Producers also reported some programs were a hassle, and they had difficulty understanding and reasonably being able to apply the programs. Throughout the meetings, many program constraints were reviewed. The helpful programming incentive mentioned most frequently was technical assistance. Some ideas on how to reach producers were also reviewed.



*Indicator: Participants help us decipher available funding sources and eligibility criteria*

The evidence collected did not provide sufficient information to use this indicator to assess whether the desired outcome was achieved; however the lack of sufficient information is likely not a result of the lack of participant engagement and support. The watershed management team was seeking information from stakeholders at the first meeting about funding sources that producers can access to support their adoption of BMPs and related eligibility criteria for the funding sources. Not much of the information shared by the stakeholders was fund specific. Two local programs were suggested, three bigger picture ideas to consider were suggested, such as funding that doesn't come from the government and examples of other programs to consider. Two unrelated pieces of information about building producer relationships were shared, and one common practice that is destructive to water quality was noted. The lack of responses about funding in particular could speak to the lack of stakeholder knowledge or support of the programs, the lack of the number of available funding sources, the lack of sufficient stakeholder participation, or the difficulty in deciphering funding sources that may be shared by all. It also may be that this question should have been asked at the second meeting instead of the first meeting. Deducing from one producer's comments at the second meeting about installing BMPs without additional funding or the difficulty in participating in certain programs, the lack of response to this inquiry at the first meeting may have been indicative that the biggest challenges come with receiving the funding. Researcher observations also noted that there was not producer interest in NRCS programs; they wanted to do the work themselves but they were interested in receiving the technical information resources. Conversations in the room seemed to imply there was not interest in the cost-sharing programs and their requirements. The watershed

management team will need to seek additional information on funding sources for inclusion in the watershed management plan.

*Indicator: Participants help to develop a plan to work closely with landowners in critical areas to identify BMPs or link them with existing programs*

A review of the measures for this indicator suggests the desired outcome was achieved. Similar to the results found in reviewing other indicators, much of the meeting discussion helpful for this indicator was about implementation and how to reach landowners through different venues. Though specific BMPs, program information, or ways to work more closely with landowners were not made explicit, helpful information was still collected, indicating support from and engagement of stakeholders.

When stakeholders in the first meeting were asked what would optimize relationships with landowners, three improvements were suggested and one barrier was highlighted. However, none of these responses focused precisely on relationships with landowners referred to in this question asked for this indicator. Nevertheless, other responses throughout the first meeting did address strategies that could optimize landowner relationships, such as paying attention to your attire and working through high visibility farmers. Discussions in the second meeting also included a number of suggestions from participants on how to reach landowners, including the desire for programs to be offered through the Conservation District, paying attention to the timing of agricultural service provider contact with landowners, ideas on how to reach the producer audience by presenting at other meetings attended by producers in the area, and using multiple sources of information dispersal. Some suggestions were made about which types of

landowners needed to be reached, including those with septic systems and those operating small or hobby farms. Again, much of the discussion in the meeting related to this indicator was about how to reach landowners through different venues. The specific BMP or program information as applied to specific areas was not reviewed. Work will need to be done on matching the programs to the landowners, and this is a reasonable task for the watershed management planning team to do using the information collected in this meeting.

*Indicator: Common goals developed*

The measures assessed indicate that common goals among stakeholders were developed through this process. To determine whether common goals were developed, four questions were proposed for analysis, although one question was not asked due to time constraints. In response to the question asking the agricultural service providers what their ideal goals were for the watershed as related to water quality and agriculture, eight social and technical solutions were offered. All of the goals were in support of the watershed management teams goals, including lower bacteria levels, no bare soil in the winter, and overall education and awareness. When agricultural service providers and producers were asked what an ideal landscape would look like to optimize agricultural producer success and water quality, an array of technical solutions, problems, questions, and information was provided. None quite answered the question asked, but discussion helped create a picture of the current landscape and some of the problems to overcome. Ideas supportive of the watershed management plan and how to overcome problems were offered, including providing technical information, rebuilding relationships, and using other organizations' meetings as opportunities for producer education about conservation practices. When the producers were asked to add their goals and visions to the list generated at the first

meeting, problems instead of goals were described. This list of problems was helpful as it represents barriers they face in implementing conservation practices. This implies that the group was supportive of making changes to improve conservation programs, but it also might be a sign that the group felt the need to deflect perceived blame despite the fact that the discussion questions were designed to have a positive focus to implement Appreciative Inquiry, or that the introduction portion of the meeting was not well received by the participants. Researcher observations recorded after the meeting note that during the responses to this question, one participant responded by asking if the perception was that the TMDL was agriculture's fault. Also, participant discussion at the end of the meeting recorded in the researcher observations suggested that producers may have been afraid that they were there because they were going to have another program pushed on them. As the meeting progressed, it appeared the group was truly focusing together on how to enhance conservation programs within the agricultural sector of the watershed. In addition, few disagreements were noted. The positive cooperative tone likely encouraged cooperation and common goal setting, focused on enhancing program support rather than placing blame.

*Indicator: Participants contribute actionable items for the Watershed Management Plan*

Though additional work will be required by the watershed management team, the questions for this indicator elicited a number of actionable items for the watershed management plan, indicating participants' support of the program. Two questions proposed for this indicator were not asked due to time constraints. One question used to measure this indicator elicited three educational methods that are currently used or could be used. These responses did not adequately answer this question. At the time of this research, the watershed management plan

was still being drafted, so a report of what was included in the plan cannot be included here; rather the research includes an evaluation of the information collected and what is expected to be contributed to the watershed management plan. Information elicited from stakeholders throughout both meetings contributed to a list of actionable items that are expected to be included in the watershed management plan. Many of the actionable items for inclusion in the watershed management plan include suggestions related to the required information and education component of the plan, such as the creation of an agricultural informational brochure with information on all of the agricultural services and programs in the watershed, or provision of program resources for BMPs that are not working properly. Another suggestion was to develop a subcommittee of smaller producers to support the program. One emphasized action item was to provide adequate technical resources. Manure storage programs, MAEAP, exclusion of cattle from streams, and filter and buffer strip programs with maintenance were some of the structural and management BMPs discussed in the meetings.

*Indicator: There is a high level of agreement between participants*

Participant engagement and support for this program is evidenced through observation of a high level of agreement between participants. To measure the level of agreement between participants throughout the meetings, disagreements during meeting discussions were noted on a rubric included in Appendices H and K. Only two disagreements were noted in the first meeting. Disagreements were not noted in the second meeting, though the researcher observation notes a producer asking if we were suggesting agriculture was to blame for the *E. coli* water quality problem. In addition, a participant indicated in a post-meeting survey response that the process was positive “For the most part. There was a level of miscommunication and blaming ag at the

beginning. I did feel slightly uncomfortable.” In addition, the majority of responses through both of the meetings had a neutral or positive tone. Though some responses received had a negative tone, few resulted in disagreements between participants, indicating participant engagement and support in the program.

*Indicator: There is collective satisfaction*

A review of the associated evidence indicates there was participant engagement and program support, as measured through confirmed collective satisfaction among stakeholders. The majority of stakeholder responses, 13 out of 16 responses, indicated that they felt they were working collectively with other participants towards similar goals. Three responses were that they only somewhat or did not yet feel they were working collectively with other participants towards similar goals.

*Indicator: Participants agree to and actually emphasize our priority 12-digit watersheds in their programming*

A review of this measure finds that most participants anticipate supporting the program, indicating achievement of the outcome. Of the ten responses from stakeholders elicited after the second meeting, nine out of ten said they would actively participate in implementing the final watershed management plan programming in the prioritized subwatersheds.

*Indicator: Partner organizations use their newsletters and websites to disseminate information about the watershed*

Though this indicator cannot fully be evaluated until a future date when actual participation in support of the program is observed, stakeholder support in communication about the watershed is expected. Another indication of program support used in this evaluation is participants' help in sharing information. When asked, the majority of stakeholders, 13 out of 16 responses, after both meetings, indicated they expected that they or their organizations would be able to help disseminate watershed planning information. Only three responses were no or a non-response. This result indicates that most stakeholders support the program enough that they plan to engage in the program coordination.

*Indicator: Relationships within the watershed are improved*

Most stakeholders reported feeling their working relationships with other stakeholders improved. The majority of stakeholder responses received after both meetings, 13 out of 16, indicated they felt the process improved their ability to work with participants on items related to water quality. Others responded that they already had that ability or that they didn't know yet. All ten responding stakeholders after the second meeting felt their working relationships with other stakeholders improved through the process. In addition, at the end of each meeting, conversations among stakeholders continued, and they scheduled additional meetings on their own initiative.

Indicators: There is improved organizational capacity and the partnership is continued over time

These indicators can be evaluated in the future by watching for improved organizational capacity and partnerships continued over time.

**Substantive Outcome: Agricultural landowners implement BMPs**

It is too soon to measure if agricultural landowners have implemented BMPs.

Indicator: Agricultural landowners implement BMPs

This indicator cannot be measured until the watershed management plan has been developed and approved and the program moves into the implementation stage.

**Substantive Outcome: Watershed water quality is improved**

It is too soon to measure whether watershed water quality is improved through this process since the meetings were to support planning and not implementation. While the evidence collected suggests the agricultural stakeholders included so far are supportive of the program, views are mixed as to whether the work completed as a result of this process will reduce *E. coli* levels. Only two indicators of water quality improvement could be measured during the time of this study: whether participating stakeholders anticipate participating in the implementation of the watershed management plan in prioritized areas and whether stakeholders believe the outcomes of the watershed management plan will reduce *E. coli* concentrations.



*Indicator: Partner organizations complete watershed management plan action items*

Assessing stakeholders' plans for participation will not guarantee improved water quality, but it will be an indication of participants' willingness to help implement watershed improvement projects which, it is hoped, will result in improved water quality. Nine of ten questionnaires completed indicate that the stakeholders anticipate participating in the implementation of the watershed management plan; one stakeholder did not respond.

*Indicator: The participants believe the outcomes of the watershed management plan will reduce *E. coli* water concentrations*

When asked if stakeholders believed that work completed as a result of the process would reduce *E. coli* water levels, ten varied responses were received. Four stakeholders reported they did not know, three reported they thought work completed would reduce *E. coli* levels, two participants said it might reduce *E. coli* levels, and one participant did not think the work would reduce *E. coli* levels. This indicator measures participant perceptions and not actual watershed outcomes. This indicator has been used as one of six criteria for measuring watershed management success by Leach, Pelky, and Sabatier (2002) since water quality data before and after the completion of watershed work often is not available.

Aside from these two indicators, measuring watershed water quality improvement will largely be accomplished by future observations including:

- An approved watershed management plan developed through this process,
- A monitoring component is developed and implemented,
- The watershed becomes eligible for future funding,

- Partner organizations complete Watershed Management Plan action items,
- *E. coli* concentrations in the watershed are measurably reduced, and
- The watershed is no longer regulated with a TMDL.

Though the improved water quality outcome cannot fully be measured within the time frame of this case study, the evidence evaluated for this outcome at this point in time suggests participants will help implement the watershed management plan but they do not believe the process will help achieve the desired outcome of improved water quality.

### **Summary of Process and Substantive Outcomes**

The meeting outcomes evaluated above are summarized in the last column of Table 3.

Table 3. *Achieved Outcomes*

<b>Process Outcomes</b>		
<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Achieved Outcomes</b>
Participants attend meetings	People come to one or more meetings	Partially
Participants participate at meetings	Participants identify other service providers who should be involved in the watershed management planning process	Yes
	Participants answer questions and share relevant information when asked	
	Participants agree to sit on an agricultural committee for the watershed	
	Participants feel comfortable to participate with honesty	

Table 3. (cont'd)

<b>Substantive Outcomes</b>		
<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Achieved Outcomes</b>
The egalitarian deliberation process is followed	The process improves the participants confidence in their abilities to take part in the watershed management planning process effectively	Yes
	The process improve the participants' understanding of others beliefs, values, and perspectives	
	The process improves the ability of participants to work together better	
	The process improves the participants confidence and self-esteem	
The process is legitimate	The participants believe the planning process was fair	The process is considered fair but it is too soon to determine whether or not it is considered legitimate
	The participants believe the outcomes of the watershed management plan will reduce <i>E. coli</i> water concentrations	
	Long term changes to watershed socioeconomic and environmental outcomes	
Participants participate at meetings	Participants identify "early- adopter" producers in the watershed to work with in the watershed management planning process	Achieved outcome
	Participants share a summary of their programs as they relate to water quality	
	Participants answer questions and share relevant information when asked	
	Participants agree to sit on an agricultural committee for the watershed	
	Participants' level of knowledge of the watershed management planning process increases	

Table 3. (cont'd)

<b>Substantive Outcomes</b>		
<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Achieved Outcomes</b>
Progress is made toward identifying BMPs most applicable for the Red Cedar River Watershed	<p>Participants identify where BMPs used to exist and help figure out why they were removed or discontinued</p> <p>Participants identify and prioritize appropriate BMPs for priority subwatersheds</p>	Only some BMPs were discussed, but important information regarding program implementation was shared
Participants engage in and support the program coordination	<p>Participants identify program gaps that the watershed management team might address with an implementation proposal</p> <p>Participants help the watershed management team better understand constraints under which participants operate and propose appropriate programming incentives</p> <p>Participants help us decipher available funding sources and eligibility criteria</p> <p>Participants help to develop a plan to work closely with landowners in critical areas to identify BMPs or link them with existing programs</p> <p>Common goals are developed among participants</p> <p>Participants contribute ideas for actionable items for the watershed management plan</p>	Overall participants did engage in and support the program coordination by offering helpful guidance for the planning process, though some more information needs to be evaluated and collected for the watershed management plan

Table 3. (cont'd)

<b>Substantive Outcomes</b>		
<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Achieved Outcomes</b>
Participants engage in and support the program coordination (cont'd)	There is a high level of agreement among participants	
	There is collective satisfaction	
	Participants agree to and actually emphasize our priority 12-digit watersheds in their programming	
	Partner organizations utilize their newsletters and websites to disseminate information about the watershed	
	Relationships within the watershed are improved	
	The partnership is continued over time	
	There is improved organizational capacity	
Agricultural landowners implement BMPs	Agricultural landowners implement BMPs	Future Evaluation
Watershed water quality is improved	There is an approved watershed management plan developed through this process	This outcome cannot be measured at this time. Stakeholders anticipate supporting the process, but were mixed on their responses to whether or not the work completed as a result of this process would reduce <i>E. coli</i> levels
	A monitoring component is developed for the future	
	The participants believe the outcomes of the watershed management plan will reduce <i>E. coli</i> water concentrations	
	The watershed becomes eligible for future funding	
	Partner organizations complete watershed management plan action Items	

Table 3. (cont'd)

<b>Substantive Outcomes</b>		
<b>Desired Outcomes</b>	<b>Indicators</b>	<b>Achieved Outcomes</b>
Watershed water quality is improved (cont'd)	<i>E. coli</i> concentrations in the watershed are measurably reduced	
	The watershed's is no longer regulated with a TMDL	

### **Appreciative Inquiry's Application of Egalitarian Deliberation**

Use of the Appreciative Inquiry Model achieves outcomes that characterize the egalitarian deliberation perspective of public participation (Tuler & Webler, 2010). All indicators were met supporting the achievement of this outcome.

### **Legitimacy**

The legitimacy outcome, which is a component of the Dynamic Watershed Management Framework, is not fully measureable at this point in the project. While the process is considered to be fair by participants, responses are mixed on whether participants anticipate *E. coli* reduction as a result of this process. The long term effects of the process on water quality cannot be measured at this time.

### **Watershed Management Planning Project Outcomes**

The desired process outcomes of the watershed management planning project were met in part. The desired meeting attendance outcome was not met. Historical factors or the way the participants were invited likely influenced the lack of meeting attendance. Cooperrider et al.

(2008) recommend introducing Appreciative Inquiry early by modeling the way it will be carried out during the participant invitation portion of the process. However little detail about how to do this is provided. Carrying out the participant invitation process differently could have affected the meeting attendance.

The substantive outcomes were achieved fully or in part based on some indicators, but most indicators could not be measured at this time. Participants substantively participated at meetings, some progress was made in identifying BMPs most applicable for the Red Cedar River Watershed, and participants engaged in and supported the program coordination. Where the substantive outcomes were achieved only in part, including the identification of BMPs for the watershed, unanticipated outcomes were achieved that nevertheless often provided helpful information. Some desired outcomes, including improved water quality, cannot be assessed for this study as the indicators can only be measured in the future.

### **Conclusions, Implications, and Limitations**

Based on the outcomes, this study found:

- 1.) The Appreciative Inquiry Model can be applied effectively in scenarios where the egalitarian deliberation process is most beneficial for stakeholder involvement.

The majority of participants felt the process improved their skills to take part in the watershed management planning process effectively, improved their understanding of other participants'

beliefs values and perspectives, and improved their ability to work with other participants on items related to water quality. One participant even reported wanting to meet more frequently. This evidence supports the conclusion that the process helped to empower participants, a main characteristic of the egalitarian deliberation public participation perspective.

- 2.) Using the Appreciative Inquiry Model to frame the facilitation of collaborative agricultural stakeholder meetings' achieved some of the desired process and substantive outcomes of the Watershed Management Planning project.

Using Appreciative Inquiry, information was successfully collected for the watershed management plan and stakeholders successfully collaborated with each other and the watershed management planning team. However, the extent to which collaboration will continue and the impact of the process on the watershed's water quality cannot fully be measured at this time. Program ideas were contributed that are expected to be used in the watershed management planning process; participants showed support of the process and worked towards developing common goals; and stakeholders helped the watershed management team understand the program gaps, including gaps in working relationships and desires for technical information. Neutral or positive tones were dominant in the discussions, and some participants continue working with the watershed management team, volunteered to continue contributing, or were meeting with other participants on items related to water quality.

The use of the Dynamic Watershed Management Framework, the Theory of Fair and Competent Public Participation, and the Appreciative Inquiry Model in framing the facilitation of



collaborative agricultural stakeholder meetings can yield desirable watershed management planning outcomes. Understanding this can help inform other collaborative watershed management planning processes.

Stakeholder attendance was lacking, and likely this is a shortfall in matching the context to the process. Though Appreciative Inquiry principals are to be followed during the participant invitation portion of the process, less direction is provided by the model for this, and carrying out the invitation step differently may affect the outcome (Cooperrider et al., 2008). As the Dynamic Watershed Framework (Sabatier et al., 2005) and the Theory of Fair and Competent Public Participation (Webler & Tuler, 2002) explain, the existing context is an important input into deciding what process should be used. In this particular context, where there is a gap in plans and partnerships in the rural area and service providers are working with fewer resources, the way the meeting invitations were extended may have been a shortcoming of the way the model was implemented or the minimal direction the model provided during this phase of the process. Though some agricultural service providers attended and some new connections between providers were made, half of the agricultural service providers who were invited did not attend.

The positive framing of the meeting, based on the Appreciative Inquiry Model, likely helped with the success of the meetings, and the success of the second meeting in particular. One agricultural service provider noted after the meeting that the producers were afraid they were going to have another program pushed on them and implied they were relieved when this was not the case. Even with the attempt at a positive tone, one producer indicated that he felt agriculture was being accused of being the cause of the TMDL problem. Another reported in the post-

meeting survey that though the process was, for the most part, a positive experience, they felt uncomfortable at the beginning of the second meeting when there was a level of miscommunication and blaming of agriculture. Without emphasis on this positive tone, it is likely that more blame might have been felt by the producers. Likely, with more blame felt by producers, chances of them being willing to work collectively on the watershed management plan would have decreased.

This stakeholder involvement process resulted in unanticipated discussions that often provided information other than or in addition to the information that was expected or being sought. This shows that indeed the stakeholders added value to the process. For example, the producers suggested holding a separate meeting with small farmers about the watershed management plan. This suggestion will be included as a recommended implementation item in the watershed management plan. This additional contribution of information may have resulted from the open ended nature of the questions or from the meeting environment.

Using the egalitarian deliberation perspective of stakeholder involvement did not elicit adequate responses to the technical questions asked during the process. While another method of stakeholder involvement may have elicited the technical responses desired, as described, the egalitarian deliberation stakeholder involvement process was deemed more appropriate for this context.

The Appreciative Inquiry Model was tested as a way to achieve egalitarian deliberation in stakeholder involvement. A different perspective discussed by Tuler and Webler (2010) is a

science-centered perspective, in which scientific data is emphasized over stakeholder empowerment. In some cases, a science-centered perspective might have resulted in obtaining more complete responses to some of the questions. For example, one desired outcome of the process was for progress to be made in identifying BMPs most applicable to the Red Cedar River Watershed. This outcome was only partially met; some BMPs were discussed, but not in relationship to their needed locations. In addition, two indicators used to measure participant engagement and support of the program coordination were only partially supportive of the outcome, in particular because more technical information was needed. While some scientific data were presented to the participants to review in the meetings, the data were not emphasized nor used in the questions asked. This lack of discussion of very technical information in the responses should be anticipated when technical information is not emphasized in the meeting agendas. With our process, instead of exchanging technical information through the meetings, other important information regarding how the program could be introduced to producers was elicited, in addition to stakeholders' preferred types of resource support and technical resources.

In summary, the watershed management team was able to collect useful information from participants through this process. The stakeholders collaborated together through the meetings; they worked together to contribute suggestions, made additional plans to meet outside of the meetings, and most agreed to support the programs of the watershed management plan in the future. In addition the watershed management team had a chance to reach a set of stakeholders who were mostly not in attendance at other stakeholder meetings, and agricultural producers and service providers were provided with a platform for communication. Most left feeling they were collectively working together through this process. The results of these meetings achieved many

of the outcomes the team sought out to achieve, though the impact on water quality is yet to be measured. The Appreciative Inquiry process was a largely successful method of building initial collaboration among the stakeholders. A meeting of a different format, for example a meeting with excessive technical information, might not have been successful without first having included stakeholders in these meetings to build a sense of empowerment among participants.

Future recommendations for this watershed management planning process include:

- Holding a meeting for the small farmers using the same Appreciative Inquiry Model meeting format, and
- Holding a meeting with a science-centered or an informed-democratic format (Tuler & Webler, 2010) with all of the stakeholders to collect the more specific technical information needed for the project.

This study evidenced some limitations, as a case study, it is an example of the Appreciative Inquiry Model applied in only one watershed with one set of stakeholders. Different outcomes may result in other applications of this model or with different stakeholders present.

The meetings agendas were designed to follow the Appreciative Inquiry Model; however, at times the meetings deviated from the agenda and model. Some of the questions could not be asked due to a shortage of time. A fewer number of questions were asked in the second meeting in particular, likely due to a larger number of participants in the room and more time used in the meeting for explaining the watershed management planning process. In addition, the responses

to the questions did not always directly answer the questions, and additional unplanned questions were often asked by the agricultural service providers seeking information from producers about the service providers' specific programs and ways to improve them. Despite this, the discussions that were off-track were mostly applicable and helpful for the watershed management planning process. Because of these diversions, it is difficult to tell whether the Appreciative Inquiry Model was indeed critical to the success in meeting desired outcomes or whether simply having the meeting platform for the parties to communicate was enough. Other formats for running the meeting might also have been successful. There were signs that the Appreciative Inquiry Model phases were experienced, at least during the first meeting. One phase of the model is the "dream" phase where ideas of "what might be" are explored. Even though none the phases of the model were overly emphasized nor the word dream used in describing the model to the stakeholders, one stakeholder at the first meeting offered a suggestion they would implement if we were "really dreaming". Another suggestion included the phrase "pie in the sky". Responses with these phrases are indicative of the stakeholders experiencing the dream phase of the Appreciative Inquiry Model. It is also likely that the Appreciative Inquiry Model likely helped contribute to the common goals developed through the process. At least one participant reported feeling a sense of blame at some points during the process, and likely without such a positive approach to the meeting, more participants might have felt blame. A higher number of participants feeling blame might have diminished the successful outcomes of the process.

Many of the outcomes cannot be measured at this time. The achievement of the actual outcomes measured in the future may substantially impact the watershed management planning project's measures of success. To gain a fuller understanding of the outcomes of this stakeholder

involvement process, the indicators that are labeled for future measurement should be measured and their implications for the outcomes analyzed.

Applying this model in more and different contexts would provide more information on the contexts in which it is most successful and could help to validate the success of this model in more than just this case. The successful use of the Appreciative Inquiry Model in this case study does not mean that other frameworks, theories, or models might not also have been successful in this context. Comparative studies across other collaborative models in similar contexts would also provide information beneficial to the watershed management planning process literature and theory.

## APPENDICES

## APPENDIX A      Meeting Email Invitations

### **Invitations and Reminder Emails for the First Meeting**

November 27, 2013

Dear Red Cedar River Watershed Agricultural Service Provider,

As you may be aware, the MSU Institute of Water Research is leading the development of a Watershed Management Plan for portions of the Red Cedar River Watershed to improve water quality by addressing the Total Maximum Daily Load for *E. coli* as well as other pollutants of concern. The project is being funded through a grant from the DEQ Section 319 Nonpoint Source Pollution Program.

As part of the watershed management planning process we are collaborating with numerous community partners, identifying sources and causes of water quality impairments, and crafting solutions to improve water quality. Since much of the watershed consists of agricultural land, we want to be sure to include agricultural stakeholders in this planning process. We understand your job duties include working with agricultural producers in the watershed and we would value your insight and contributions to the process.

We are inviting you to attend a meeting to share information about your work and your organization's current activities in the watershed. We are also interested in hearing your vision and goals for the watershed, and will begin to discuss the details of the watershed plan. This



initial meeting will be scheduled for a two-hour timeframe. An additional meeting may be scheduled in the future to continue the discussion. A meeting agenda is attached.

As part of this process, information will be collected for a research project that is being completed for a Master's Thesis pertaining to the body of literature on the watershed management planning and stakeholder involvement process. Your participation in the research is completely voluntary, and we will share additional information about the research project at the meeting.

With your participation we hope to produce a more comprehensive and useful watershed management plan. Thank you and we look forward to meeting with you in January

December 18, 2012

I would like to confirm our meeting to gather and discuss engaging agriculture in the Red Cedar River watershed planning process. We will meet on:

Date: **Tuesday, January 15, 2013**

Time: **9:00 am – 11:00 am**

Location: **Lansing, MI**

If you are unable to attend the meeting, but are willing to provide input into the watershed

planning process, please let me know.

Thanks – we are looking forward to your comments and suggestions!

### **Invitations and Meeting Reminders for the Second Meeting**

January 25, 2013

Thank you again for participating in our meeting last week regarding agriculture as it pertains to the Red Cedar River Watershed Management planning process. It was really helpful to hear from you all about the details of your work and programs, and to begin to develop some ideas on how we can together work to improve the watershed's water quality.

We want to continue developing ideas and plans to contribute to the watershed management planning process and improved water quality in the Red Cedar. We are scheduling a follow up meeting with you in combination with the farmers in the watershed who practice conservation measures and who have positive relationships in the community.

Please use this link and mark on the calendar your availability to attend a meeting at the end of February or beginning of March:

[link]. This will be a lunch meeting with lunch provided.

Also, if you haven't had a chance to fill out the follow up survey for my research, it is attached again. I would really appreciate your help in this! You can email it back to me or [name]. Again, as a part of this next meeting, information will be collected for a research project pertaining to the stakeholder involvement process of watershed management. Your participation in the research is completely voluntary and additional information will be shared at the meeting.

Thank you,

February 5, 2013

Our follow up meeting to discuss agriculture in the Red Cedar River Watershed Management Planning Process together and with producers in the watershed will be held MONDAY FEBRUARY 25 FROM 12:00-2:00 PM. Lunch will be provided. We will meet again at the [LANSING, MICHIGAN].

We want to continue an open discussion following the same format as our last meeting, a draft agenda is attached. If you agree, I will continue my research about the process and outcomes of this type of stakeholder involvement process.

Please let me know if you are able to attend or have any questions.

February 18, 2013

Hello everyone,

I am emailing to remind you of the follow-up meeting to discuss agriculture in the Red Cedar River Watershed Management Planning Process on Monday February 25 from 12:00 to 2:00 pm at the [Lansing Michigan, 48911]. Lunch will be provided.

I think we had a really productive meeting last time, and I am looking forward to this meeting with some of the watershed's agricultural producers joining us on Monday as well.

If you have not yet responded to me, please let me know if you plan to attend so I can plan lunches accordingly.

Thanks for your participation!

February 24, 2013

I will see you all at the meeting on Monday for the Red Cedar Watershed. Last time we had a great discussion with much focus on what was going on in the watershed currently. We will continue our discussion from last time, but this time with watershed farmers. Our focus will be on looking forward more and developing what we want to include in the watershed management plan.

**Sample Reminder Email to Agricultural Producers:**

Sent approximately February 22, 2013

This is a reminder email about the meeting to discuss plans for improving water quality through the Red Cedar River Watershed Management Planning Process.

The meeting will be held at [Lansing 48911] from 12:00 to 2:00 pm on Monday February 25. Lunch will be provided.

I look forward to meeting you, and thank you in advance for your time and insight.

**Red Cedar River Watershed Management Plan**

**Agricultural Service Providers Meeting**

January 15, 2013

Agenda

- I. Introductions
- II. Red Cedar Watershed Management Plan background, current status, direction, and research overview
- III. Share with us: What is the current status of your organization's work in the Red Cedar River Watershed?
- IV. Share with us: What are your visions and goals for the future of the Red Cedar River Watershed?
- V. Share with us: What would you like to include in the Red Cedar River Watershed Plan?
- VI. Share with us: What actions might you take in the watershed planning process?
- VII. Forming an Agriculture Subcommittee to develop plans for the Red Cedar Watershed Management Plan
- VIII. Next Meeting

## **Meeting 1 Discussion Question Guide**

### **Agenda Item III.**

What do you think are the greatest attributes and characteristics of the Red Cedar River Watershed farmers?

What are some of the most effective or accepted BMPs being used in this watershed?  
Where are they most successful?

What are some of the most effective methods you use to work with the agricultural community to promote relationship building, changing conservation behaviors, BMP adoption, and helping to find funding for conservation practices?

What farmers or other agricultural service providers do you know who are supporters of BMPs and who have positive relationships in the community?

What are the most useful and accepted funding and program resources available for conservation practices and who do they most cater to?

**Agenda Item IV.**

What are your ideal visions and/or goals for the Red Cedar River Watershed as they pertain to water quality and agriculture?

What would the most ideal agricultural outreach experience for your organization look like?

**Agenda Item V.**

What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed?

**Agenda Item VI.**

What is the smallest step we could take individually or together as a new group to have the largest impact?

What is a new approach we could try to improve water quality of this watershed?

**Agenda Item VII.**

Are you willing to be a part of the Red Cedar River Watershed Management Plan Agriculture Subcommittee?



**Post Meeting 01/15/2012 Survey Questions**

Did you feel comfortable participating fully and honestly through this process?

Did you feel this stakeholder participation process was a positive experience? How would you have improved it?

Did you feel freedom with how and what you chose to contribute in this process?

Do you feel you are working collectively with other participants towards similar goals?

Did this process improve your confidence in your abilities to take part in the watershed management planning process effectively?

Did the process improve your understanding of other participants' beliefs, values, and perspectives?

Did the process improve your ability to work with other participants on items related to water quality?

Do you expect your organization to be able to help disseminate watershed planning information through your website and/or newsletter?

**Red Cedar River Watershed Management Plan**  
**Meeting with Agricultural Service Providers and Producers**

February 25, 2013

Agenda

- I.      Introductions
  
- II.     Red Cedar Watershed Management Plan Background, Current Status, and Direction
  
- III.    Past Meeting Review: What is our current status? What are our visions and goals for the future?
  
- IV.    Share with us: Additions or edits to our visions and goals for the future?
  
- V.     Share with us: What would you like to include in the Red Cedar River Watershed Plan?
  
- VI.    Share with us: What actions might you take in the watershed planning process?
  
- VII.   Forming an Agriculture Subcommittee to develop plans for the Red Cedar Watershed Management Plan

## Meeting #2 Discussion Question Guide

### **Agenda Item III.**

A summary of some points discussed during the first meeting were written out on paper and reviewed with the stakeholders. These were points raised by agriculture service providers that helped us gain an understanding of their perspectives on how environmental conservation practices are working or could work in this watershed.

### **Agenda Item IV.**

What would you like to add to what we came up with at our first meeting? Do you have different or additional visions and goals for the future?

### **Agenda Item V.**

Thinking about the future, how could the watershed planning process create a useful and effective plan for watershed residents for improving water quality?

What characteristics would an ideal landscape and farm have in the Red Cedar River Watershed to optimize water quality and agricultural producer success?

In the ideal world, what resources would you have available to you to optimize water

In the ideal world, what resources would you have available to you to optimize water quality, working relationships, and agricultural producer success?

**Agenda Item VI.**

What can we do to best utilize our existing strengths and make the BMP programs easier for producers to learn about, access, and adopt?

How can we ensure our BMPs remain in use or not removed through the end of their useful life?

What is the smallest step or a new approach we could take together as a new group to have the largest impact?

**Agenda Item VII.**

Are you willing to continue working with us as a part of the Red Cedar River Watershed Management Plan Agriculture Subcommittee?

**Post Meeting Survey Questions 02/25/2013**

Did you feel comfortable participating fully and honestly through this process?

Did you feel this stakeholder participation process was a positive experience? How would you have improved it?

Did you feel freedom with how and what you chose to contribute in this process?

Did you feel you are working collectively with other participants towards similar goals?

Did this process improve your confidence in your abilities to take part in the watershed management planning process effectively?

Did the process improve your understanding of other participants' beliefs, values, and perspectives?

Did the process improve your ability to work with other participants on items related to water quality?

Do you expect you or your organization to be able to help disseminate watershed planning information through your (circle one or more if applicable): website, newsletter, or word of mouth?

Did you feel your working relationships with other participants improved through this process?

Do you anticipate you and your organization will participate actively in implementing the final watershed management plan programming in the prioritized subwatersheds?

Do you believe that work completed as a result of this process will reduce the levels of E. coli in the watershed?

**Meeting 1 Discussion Question Summary<sup>1</sup>****What Agenda Item III.**

What do you think are the greatest attributes and characteristics of the Red Cedar River Watershed farmers?

- [a local agricultural service provider organization] [progressive conservation management]
- Community Interest groups- number of groups & cooperation among them
- Farmers want to do the right thing but don't always know what is right/wrong because water quality perspective is different than [for] profit perspective and [farmers] don't always know the regulations
- [Red Cedar] goes through MSU
- Documented history and photos

<sup>1</sup> Some of the recorded notes in this discussion guide summary are purposefully modified to protect the privacy of participants. Some modifications are noted with [brackets] and other [brackets] are included to clarify recorded notes to reflect what was understood to be said in the conversation.



What are some of the most effective or accepted BMPs being used in this watershed?

Where are they most successful?

- Manure storage programs- NRCS
- Sediment loading- EQIP programs – NRCS
- MAEAP – 10% [of farms in both counties are MAEAP certified]. Helps all farms but most helpful in incorporating small farms who weren't previously regulated. Some [farmers] come to program, some [are recruited] by mailings. [Some farmers come to program because of] TMDL fear- Lake Erie, Farm Bureau literature/ mailings [Story about western Lake Erie's watershed requirements and the discovery about the two different types of phosphorous in the Lake. The P pollution may be from no-till practices, and tile maintenance might be necessary]
- Hobby farms are high risk for pollution contributions
- Some [farmers] buy in on filter/ buffer strips and some farm to the edge of the ditch.
- No-till is minority practice but increasing (equipment is cost prohibitive).
- Maybe tillage practices are not enough. What about tile maintenance?
- [One] Drain Commissioner gives credit for conservation practices
- Some education / [because] some don't want to use BMPs
- Conservation plantings
- Wetland restoration
- Conservation tours/ Field Tours

What are some of the most effective methods you use to work with the agricultural community to promote relationship building, changing conservation behaviors, BMP adoption, and helping to find funding for conservation practices?

- Find high visibility farms everyone knows and work with them and advertise [conservation] work
- Talk about free services, not about liability or what they are doing wrong. Use right delivery.
- TMDL carrot, if [farm is] MAEAP verified in TMDL watershed, that farm is exempt from other changes required through TMDL
- It would be useful to have TMDL education brochure from MSUE about what it means to live in watershed with TMDL
- MSUE [is] #1 trusted information source
- Conservation Districts #3 trusted information source
- Friends and Neighbors are #2 trusted information source- demonstration days- (Found this in Clinton County) hard to get first person on board
- NRCS [trusted source] #4 or 5
- One agricultural service provider is considering BMP program
- Need holistic resource on all resources in county/watershed in one spot
- [Drain Commissioner] assessment lowering with BMPs in place (put in brochure?)
- Need buffer strip program with maintenance
- [there are] a lot of tile blow outs

- [Drain Commissioner] [does farmer conservation] education but not big on enforcement

What farmers or other agricultural service providers do you know who are supporters of BMPs and who have positive relationships in the community?

- Pheasants Forever
- Turkey Federation
- Ducks Unlimited
- Trout Unlimited
- County Farm Bureau- MAEAP Supporter
- County Farm Bureau- (don't know them much)- have a good young farmer program. Farm Bureau conservation- support varies by county
- [Local Farmer] named with good [farm and conservation] practices
- [Local Farmer]
- [Local Farmer]
- [Local Farmer]
- [problem] One Subwatershed has biosolids spreading too, horses, and 2 big cow dairies
- [problem] This watershed has active horse community we should consider.  
Many do not know water quality. Can have higher concentration of horses on land. No [waste] spreading, usually just stockpiling.
- Michigan Milk Producers

- [problem] Ag service providers and inspectors don't even know all [conservation] programs like Drain Commissioner. Give them a list of programs to share with landowners.
- Conservation District has a [conservation program] list on web
- Could use grain elevators to hold meeting with drain commissioners
- Greenstone
- Waste effect on heard health and [include] veterinarians

What are the most useful and accepted funding and program resources available for conservation practices and who do they most cater to?

- Need funding source that doesn't come from government
- Drain Commissioner assessment reductions and advertise them
- Pheasants Forever
- Nontraditional BMPs/ methods
- Relationships/dress
- Look for problem and look at relationship, don't just use a formula [when working with farmers]
- Look at W. Lake Erie's programs
- Problem: cattle in creek challenge. So many people do it. Hard to change perception and change behavior.

#### **Agenda Item IV.**

What are your ideal visions and/or goals for the Red Cedar River Watershed as they pertain to water quality and agriculture?

- No bare soil in winter
- Overall education and awareness
- Lower bacteria levels
- Broadened agricultural community definition (include small farms)
- Collaborate instead of point finger
- Educational day to educate stakeholders (agribusiness [including] fertilizer [companies])
- An end to conflicting water quality / agriculture. AND not OR. They can work together
- Manure digesters + energy

What would the most ideal agricultural outreach experience for your organization look like?

- Skipped question because of timing and it seemed we had already covered some of the question

#### **Agenda Item V.**

What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed?

- Have a better holistic/ collaborative picture of what each resource does
- Meet more frequently- [utilize] teleconference
- Challenge [on two above points] is turnover [of employees]
- Mass mailings- combine messages in mailings (Drain Commissioner, municipalities' tax billings, utilities)

#### **Agenda Item VI.**

What is the smallest step we could take individually or together as a new group to have the largest impact?

- [combined this question with the next question because of time]
- [example] Drain Commissioner elementary school does education on erosion, has water model on the stream table, could be used or modified to use for adults too.
- Conservation District – groundwater flow model
- YouTube NRCS video on tillage practices

What is a new approach we could try to improve water quality of this watershed?

- [combined this question with the previous question because of time]

## **Agenda Item VII.**

Are you willing to be a part of the Red Cedar River Watershed Management Plan

Agriculture Subcommittee?

- [question asked, there was interest in the room, but we did not count who would or would not agree to be on the committee]

**Did you feel comfortable participating fully and honestly through this process?**

Yes (5)

Yes this informal process does facilitate a relaxed and open discussion. (1)

**Did you feel this stakeholder participation process was a positive experience? How would you have improved it?**

Yes (2)

Yes. I thought the meeting was very successful. If I had to make a suggestion for improvement I would like to see questions you've prepared for the group ahead of time, giving us more time to brainstorm prior to the meeting. (1)

It was positive. The only improvement I would make is to set up a mechanism for follow up.

We had a lot of good ideas, need to be sure we follow up on them and take action. (1)

It was a positive experience, which offered a lot of insight into the topic (1)

Yes – it was a great meeting (1)

**Did you feel freedom with how and what you chose to contribute in this process?**

Yes (4)

Yes, and I think there was an opportunity for everyone to take part in the discussion. (1)

Yes all contributions were accepted and discussed, anything offered would have been considered in this setting. (1)



**Do you feel you are working collectively with other participants towards similar goals?**

Yes (3)

Yes, somewhat, there is a lot of overlap but we still have specific agendas. (1)

The whole group seems focused on related goals. (1)

Not yet – but it was good to hear what others are doing in the watershed. (1)

**Did this process improve your confidence in your abilities to take part in the watershed management planning process effectively?**

Yes (4)

Yes I think it does offer confidence for all parties involved (1)

Maybe – not sure yet. (1)

**Did the process improve your understanding of other participants' beliefs, values, and perspectives?**

Yes (4)

Yes, these types of meetings are always helpful to see the perspective of groups or individuals

whose goals overlap your own. (1)

Yes the various perspectives offered by the involved groups were made clear in the open format discussion (1)

**Did the process improve your ability to work with other participants on items related to water quality?**

Yes (3)

Yes by understanding their interest in the project it does make cooperation much easier. (1)

I think so, had to tell at this point. (1)

Yes, now I will be more comfortable calling those with whom I have not previously worked. (1)

**Do you expect your organization to be able to help disseminate watershed planning information through your website and/or newsletter?**

Yes (2)

Yes! (1)

Yes I think this is a possibility (1)

Yes, as long as information about the planning process is shared (1)

No (1)

## APPENDIX H      Meeting #1 Researcher Observations

- During the meeting I allowed participants to read questions, while I just gave a summary. This may have been the reason why some questions didn't always yield answers that were directly an answer to the question. Example Question 1 answers are about good characteristics of the farmers and the watershed, not just the farmers. Information collected was still helpful.
- Discussion ensued with little need for me, the facilitator, to keep the conversation going.
- Participants shared stories throughout the meeting. For example, stories were shared about having a digester for energy with tours, a man who wears overalls and shorts overalls, and one of skepticism of the government.
- Participants discussed how to relate to farmers: dress appropriately, connect on where you live, connect on your pastimes.
- Participant used the word "dream" during the process, "if we are really dreaming", and then they offered their suggestion.
- The phrase "pie in the sky" was also used when offering an idea.
- Setting a comfortable relaxed tone of the room, a variable outside the designed questionnaire list, but a variable that likely mattered.

## **Meeting Observation Tracking 01/15/2013**

### **Meeting 1 Discussion Question Guide**

#### **Agenda Item III.**

What do you think are the greatest attributes and characteristics of the Red Cedar River Watershed farmers?

Summary, 2 people spoke, 8 different comments, mostly positive tone.

What are some of the most effective or accepted BMPs being used in this watershed?

Where are they most successful?

Summary, 6 people spoke, 15 different comments, mostly with a neutral tone<sup>2</sup>

What are some of the most effective methods you use to work with the agricultural community to promote relationship building, changing conservation behaviors, BMP adoption, and helping to find funding for conservation practices?

Summary, 6 people spoke, 13 different responses, mostly positive tone.

<sup>2</sup>One participant arrived late to the meeting and contributed to this response after this record was taken.

What farmers or other agricultural service providers do you know who are supporters of BMPs and who have positive relationships in the community?

Summary, 6 people spoke, 17 different responses, mostly positive tone

What are the most useful and accepted funding and program resources available and who do they most cater to?

Summary, 9 people spoke, 20 different responses, mostly positive or neutral tone, there was one disagreement noted

#### **Agenda Item IV.**

What are your ideal visions and/or goals for the Red Cedar River Watershed as they pertain to water quality and agriculture?

Summary, 7 people spoke, 11 different comments, mostly positive, and there was one disagreement.

What would the most ideal agricultural outreach experience for your organization look like?

Skipped question because of time constraints

### **Agenda Item V.**

What, if anything, would optimize working relationships with farmers that you know or don't yet know in this watershed?

Summary, 6 people spoke, 5 different comments were made, indicating there must have been a recording error, likely in recording the number of responses and tone. The tone was mostly positive.

### **Agenda Item VI.**

What is the smallest step we could take individually or together as a new group to have the largest impact?

Summary, 4 people spoke, 5 different responses, all positive tones.

What is a new approach we could try to improve water quality of this watershed?

Combined this question with above question because of time constraints.

What do you anticipate farmers' opinions will be about the watershed management plan and implementation?

This question was included on the agenda, but it was unlikely that we were going to ask the question in the meeting, and the question was not asked during the meeting.

**Agenda Item VII.**

Are you willing to be a part of the Red Cedar River Watershed Management Plan  
Agriculture Subcommittee?

Asked question, but didn't receive or record responses during meeting.

**Meeting 2 Discussion Question Summary<sup>3</sup>****Agenda Item IV.**

What would you like to add to what we came up with at our first meeting? Do you have different or additional visions and goals for the future?

- Turnover in resource programs. Changing rules in programs are difficult to manage (program example)
- [example of] Installed BMPs not working and having to be changed [hassle]
- NRCS trying to figure out ways to deal with BMPs that don't work.  
Understand [there is a ] turnover problem at NRCS with CNMP
- [there was a] Conservation District dysfunction in past. Programs need to come out of that office. (NRCS and others). [farmers] Want programs to come from there.
- [there is a problem of] understaffing at NRCS and others- it takes a long time to hear [back] from a program

<sup>3</sup> Some of the recorded notes in this discussion guide summary are purposefully modified to protect the privacy of participants. Some modifications are noted with [brackets] and other [brackets] are included to clarify recorded notes to reflect the what was understood to be said in the conversation.



- [In response to broadened agriculture definition of including small farms] that is not their full time job, they need same conservation practices. They may not know impact of programs

### **Agenda Item V.**

Thinking about the future, how could the watershed planning process create a useful and effective plan for watershed residents for improving water quality?

Question not asked due to time constraints

What characteristics would an ideal landscape and farm have in the Red Cedar River Watershed to optimize water quality and agricultural producer success?

- Timing of program response working with landowners isn't always at the most opportune time [programs have a long lag time when they respond back with landowners, and the actual resource information often comes at the wrong time in the ag producers' work schedule]
- Are there too many programs of overwhelming information?
- Number of problems at small farms exceeds the [problems at the] large farms
- Are there services districts could provide that NRCS isn't doing?

- Conservation District predecessors spent time driving farmers away. [there are] many years to overcome. Must separate yourself from NRCS and past Conservation District.
- MSUE, FSA piggy backs on other farm meetings to get 10 minutes to speak at them. Ex: Chemical Meetings, Mason Elevator Appreciation, Seed, Extension Service
- Crop cover [cover crop] issues in magazines now.
- Do you prefer cost share or ....programs?
- Prefer Technical assistance programs
- Information is important part.

In the ideal world, what resources would you have available to you to optimize water quality, working relationships, and agricultural producer success?

Question not asked due to time constraints

### **Agenda Item VI.**

What can we do to best utilize our existing strengths and make the BMP programs easier for producers to learn about, access, and adopt?

- Conservation District helped get some involved.
- Connect with all organizations to learn about programs. [don't rely on getting a message out through one source].

- [there was an experience with receiving?] Discrepancies from program resources.  
Checking with many programs is a hassle.
- List of providers that can provide resource information, would that be helpful?
- [farmer] didn't use federal government [for implementing a certain BMP]
- How do you learn about benefits [of BMPs]?
- [participant's] Dad in the past
- Talk to other farmers who are using conservation practices
- Demo Day? Yes
- Fall tour at Conservation District? Do you want more of these?
- [It depends on] who do you want to reach?
- [In the past there was a] pasture walk in the evening
- Evening meetings are better way to reach farmers who have other jobs. [but there is not consensus in this, because some have evening commitments with kids or who do not want to go to a meeting in the evening]. [there was discussion about Saturdays but I did not hear a positive response to this. Lunch meetings were good and common with the large farmers].
- Need multiple communication methods. Yes, the electronic method is effective [but not everyone has a computer].
- [need] Different meetings for different types of sizes of farms
- [need] Different communication avenues
- Get the point across that farm size doesn't matter. They need to adopt [conservation] practices too
- Include horse farmers

- Reach them through MSUE. MSUE has a list of names of people who have come through the MSUE office [in the past for other information].
- Worry of staff turnover. [MSUE retirements discussed and concern of who will be next.] some staff at MSUE have so much information sent out from them [which is] good. They like that information but do not know if small farmers like that information.

How can we ensure our BMPs remain in use or not removed through the end of their useful life?

- Contract expiration

What is the smallest step or a new approach we could take together as a new group to have the largest impact?

- What can we change in MAEAP Program?
  - Timing. Make connections all season through.
- Talk up liability reduction part of MAEAP Program
- Cover Crops
- Is it helpful for [conservation] districts to help on maintenance tips? yes
- Fuel Storage- make info more user friendly
- Would listserv be useful?
- Complicated fuels storage program- so farmer will do on own.
- People need to know that MAEAP on farm site is confidential.
  - Agreed
- Each person has their own way of doing work/farm
- Small operators don't have money to fix and need more money to help.

- Large operators don't want to go out of business.
- MAEAP barriers- well location proximity to manure etc.
- Regulators don't use common sense- go by rules only.
- Problem- Interpretation differences
  - Two people interpret differently.
- Grassed waterways and filter strips – best
- Require maintenance so don't eat at edges
- One Conservation District outside the watershed has loan program for no-till. Helpful?
  - No. Management more problem than equipment.
- Conservation District used to have voluntary no tillage in fall
- Not many no till in area.
- Many different reasons for doing what we do.
- No till farmers are usually willing to give up some money to be more committed to environmental sustainability. Less EQIP benefit.
- Is it helpful for districts to help on maintenance tips?
  - Yes
- Would farmers consulting service be helpful?
  - No
- Large to small farms
- Chisel plow vs. no till
- Risk with rental equipment from CD?
  - Yes
- Number of rural residents without proper septic systems?

- Replaced well, some septic tile that go long distances
- Invite small farm representatives but watch for intimidation
- [Attendee] has numbers loss of how much money people are losing to top soil
- Large equipment makes it hard to operate around wind breaks
- Insects are problems that come with grassed waterways

APPENDIX J

Meeting #2 Post Meeting Survey Responses

(10 Survey Responses)

**Did you feel comfortable participating fully and honestly through this process?**

Yes (9)

after we got into the meeting (1)

**Did you feel this stakeholder participation process was a positive experience? How would you have improved it?**

Yes (3)

For the most part. There was a level of miscommunication and blaming ag at the beginning. I did feel slightly uncomfortable. (1)

It was done well because I feel both sides learned things (1)

yes, maybe less introduction, get to group discussion earlier in the process (1)

focus more on strategies to [can't read word] inputs outside of ag. We focus on Ag for practices because we know we can fix them. We don't know how to fix [can't read word] problems i.e. septic (1)

add smaller farm representation (1)

yes. Remove government agencies will get farmers to open up more (1)

yes. Maybe identify and invite in representation of small farms (1)

**Did you feel freedom with how and what you chose to contribute in this process?**

Yes (10)

**Did you feel you are working collectively with other participants towards similar goals?**

Yes (8)

for the most part (1)

yes, knew all the farmer participants (1)

**Did this process improve your confidence in your abilities to take part in the watershed management planning process effectively?**

Yes (7)

already had it (1)

It made me more aware of issues to be mindful of to improve process the next time (1)

Sure (1)

**Did the process improve your understanding of other participants' beliefs, values, and perspectives?**

Yes (6)

already knew it (1)

definitely (1)

Yes! Very much so (1)

Some (1)

**Did the process improve your ability to work with other participants on items related to water quality?**

Yes (7)



No answer (1)

Yes, definitely (1)

we worked together already (1)

**Do you expect you or your organization to be able to help disseminate watershed planning information through your (circle one or more if applicable): website, newsletter, or word of mouth?**

Yes (2)

Yes to all (1)

Website (2)

website, newsletter, word of mouth (1)

website, newsletter, Yes, grower meetings/education events (1)

somewhat- suggested several communication sources/procedures (1)

No answer (1)

No (1)

**Did you feel your working relationships with other participants improved through this process?**

Yes (9)

we all felt at ease + willing to speak up (1)

**Do you anticipate you and your organization will participate actively in implementing the final watershed management plan programming in the prioritized subwatersheds?**

Yes (7)

Yes will participate (1)

Yes? (1)

No answer (1)

**Do you believe that work completed as a result of this process will reduce the levels of E. coli in the watershed?**

Yes (2)

it should (1)

maybe (1)

too soon to tell. A lot of unknown (1)

? Too early in process (1)

I'm sure it is possible (1)

too early to say (1)

? (1)

no (1)

- Introduction discussed looking at septic, wildlife, urban areas too.
- This whole introduction process took an hour. It was a different introduction than the one presented at the first meeting. There was interest in the background information and a lot of information to cover since the audience wasn't fully familiar with the watershed management planning process. No mention of DEQ grant. Included applause for the producers for being the people already practicing conservation measures.
- After the introduction and after introducing discussion results from the last meeting, a comment, "so it is ag's fault" was made. In response, we discussed again how there were many contributions to the bacteria problem and that agriculture was one of them, and that we were addressing the others separately; the health department meetings were given as an example.
- Little attention was paid to the questions being asked through the process. Discussion ensued based on the introductory information shared. The agricultural service providers had a list of their own questions that they wanted to ask of the producers throughout the meeting about their specific programs and ways to improve them. It was almost as if there were two different agendas in the room with the three different parties present (agricultural service providers, watershed management plan managers, and producers). I interpret this to mean it was useful to have a meeting with the people in the same room, and that service providers have unanswered questions too. I did not stop their questions to redirect the room back to my questions because ultimately the agricultural service providers are the people providing the services and they need information from this

process too. At least 3 people asked separate questions to the farmers aside from my questions. I couldn't get through all of the questions I had planned because there was so much discussion. Once I reported what we discussed at the last meeting, there was just a lot of information that the farmers wanted to add too. The discussion naturally progressed to answer some of the questions I had prepared so I moved to those questions for the sake of time.

- Because of this progression through the discussion, and other questions being asked, I don't feel like we experienced all of the phases of the AI process in the second meeting as we didn't get to set the stage and ask all of the questions.
- Two farmers followed up with emails that they would be involved in future watershed meetings.
- Many responses were in regards to communication, resources, and programs, not really on the technical information.
- One farmer reported he did the conservation practices because he understood the value of them.
- There was mention that people pick which BMPs they chose to implement and want information about the BMP but not always the extra hassle to participate in the [federal] program.
- There was a common response that small farmers are a different category than large farmers and they should be included in this project in their own separate meeting. There is intimidation between the two types of farmers. (It was implied that some participants felt almost as if the small farmers' contributions were worse than large farm contributions.)

- Discussion likely led to answer many of the questions on my list, but not by me asking all of them. Because of this, the tally of the meeting observations (recorded by another person) doesn't always match how I was recording question answers. I switched questions sometimes to match the topic without the observation tracking person knowing that. This could reflect my lack of experience in this type of situation.
- Many times one person reported an idea and others affirmed their idea, but idea was only recorded once.
- Many agreed that there are many ways to farm and everyone does things differently depending on what they can get to work for them for their profit and with the equipment they have.
- The question was posed about if farmers would use a piece of equipment if a Conservation District owned it and rented/loaned it to many people. There was some concern about disease from this option. I do not recall it to be a popular idea.
- No out loud affirmations of people wanting to participate in future meetings.
- Reports at the end of the meeting from service providers suggested that producers were afraid they were there because they were going to have another program pushed on them ("down their throats"). I interpret this response, with suggestion from the agricultural service provider, means that producers are so used to being blamed, they came in with the idea in their head they were just there to get blamed for something else so their defenses were up. Positive tone is likely better to work with this history.
- After the meeting, most everyone lingered in the room. The meeting time was over but the conversation continued.
- One agricultural service provider scheduled 3 follow up visits with farmers

- Small farmer contact names were shared in person and by email by one farmer and by one agricultural service provider.
- After the meeting, watershed team members reported how rare it was to have a meeting with stakeholders like this in the same room. I interpret this as meaning, that getting everyone in the same room may have been equally or more important than the process.
- Hypothesis: Was it helpful to have a third party in the meeting to have discussions between farmers and agricultural service providers? One participant thought this was helpful based on other work they have been involved in.
- The Appreciative Inquiry Process wasn't emphasized, so it was hard to make sense of the information (the "What is" and "What might be") from the first meeting to the second meeting, and fitting them into the Appreciative Inquiry phases. Therefore, we didn't get totally relevant follow up information to this question about what could be added to the summary of information reviewed from the first meeting. Information provided in this transition was relevant to the watershed management planning process, but did not really pertain to the question asked. This was likely the case for the answers to many questions asked.
- There was discussion that even within the room they used differed BMPs.
- One participant reported concern that farmers didn't open up all of the way because of the agricultural service providers present in the meeting.
- There was no interest in NRCS programs; the producers could do the work on their own, but they do want the information.
- Some organizations in the watershed did not participate in this process at all.
- Farmers didn't all sit next to each other; they were spread around room.

- There was small talk in the beginning and it was very friendly
- There was a discussion about the CARRS Department name change and disappointment in the word agriculture being dropped from the new name prior to the start of the meeting.
- After the meeting one producer gave names of two small farmers for me to contact who use conservation practices.
- One agricultural service provider said she has suggestions of small farmers who support conservation practices who we can contact.
- One agricultural service provider shared they have a brochure they use for education in this type of work.
- One agricultural service provider suggested looking into MAEAP farmers and the effect of TMDLs on them.

## **Meeting 2 Observation tracking <sup>4</sup>**

### **Agenda Item IV.**

What would you like to add to what we came up with at our first meeting? Do you have different or additional visions and goals for the future?

Summary, 8 people spoke, 24 different comments, mostly positive though some neutral and negative tones were present.

### **Agenda Item V.**

Thinking about the future, how could the watershed planning process create a useful and effective plan for watershed residents for improving water quality?

Summary, 7 people spoke, 11 different responses.

<sup>4</sup>During this meeting, though conversation diverged from the questions often, the recorder writing the discussion notes down tried to capture the discussion as best as possible, sometimes switching from question to question to record responses. The recorder capturing the information below was not always able to follow the quick changes between questions and recorded the discussion as best possible. Disagreements in this meeting were not recorded. Though there may have been some, the researcher does not recall this to be a majority. The notes here reflect that two people did not participate in the meeting discussions. I recall these two people to be me facilitating the meeting, and the recorder taking these notes. Thus, the invited stakeholders likely all contributed to the meeting.



What characteristics would an ideal landscape and farm have in the Red Cedar River Watershed to optimize water quality and agricultural producer success?

Question not asked due to time constraints.

In the ideal world, what resources would you have available to you to optimize water quality, working relationships, and agricultural producer success?

Question not asked due to time constraints.

## **Agenda Item VI.**

What can we do to best utilize our existing strengths and make the BMP programs easier for producers to learn about, access, and adopt?

Summary, 6 people spoke, 11 different comments, mostly positive tone.

How can we ensure our BMPs remain in use or not removed through the end of their useful life?

Summary, 7 people spoke, 14 different comments, mostly positive tone.

What is the smallest step or a new approach we could take together as a new group to have the largest impact?

Summary, five people spoke, 16 different responses, mostly positive tone.

**Agenda Item VII.**

Are you willing to continue working with us as a part of the Red Cedar River Watershed Management Plan Agriculture Subcommittee?

Asked question, but didn't receive or record responses during meeting.

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