

THE RELATIONSHIP BETWEEN LEADER BEHAVIORAL STYLE AND TEAM  
CULTURAL TYPE IN WATER RESOURCES COLLABORATIVE TEAMS

by

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A Dissertation Presented in Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Management in Organizational Leadership

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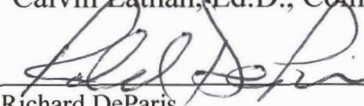
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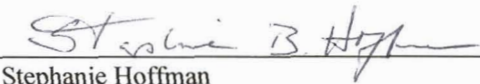
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## ABSTRACT

The purpose of this quantitative, correlation research study was to measure the relationship between six dimensions of leader behavioral style and four cultural types for a sample of 38 water resources collaborative teams. The study used two validated instruments, the LaFasto and Larson Collaborative Team Leader and Cameron and Quinn Organizational Cultural Assessment Instruments, to measure leadership behavioral style and team culture, respectively. A demographic questionnaire was also used. Results indicated that multi-sector, multi-disciplinary water resources collaborative teams provide few correlations with regard to leader behavioral style and team culture. The implication of this research is that collaborative leaders may face leadership challenges that are not fully understood, providing impetus for future research in the leadership and organization management fields.

## DEDICATION

*To Anita:*

For her love, patience, and support,  
all of which kept my passion alive during this endeavor.

*To Christopher and Jennifer:*

May the completion of this work provide a lifelong symbol  
that you are never too old to achieve your dreams.

## ACKNOWLEDGMENTS

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Finally, I would like to convey a special thanks to the collaborative water resources teams and their leaders that participated in this study. Without them, this research would have never reached fruition.

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## CHAPTER 1: INTRODUCTION

The realities of the twenty-first century have impinged upon the abilities of single organizations to solve multi-faceted problems. Often, leaders of organizations find they must join with others in a collaborative manner to address complex issues (Cameron, 2004). When multiple organizations collaborate as a team, a diverse array of agendas, professions, and political affiliations often become involved (LaFasto & Larson, 2001). Important to the interaction of these organizations and interests are the leader's behavioral style and the culture of the collaborative team (Schein, 1992; Wilson, 2002).

The present research effort focused on the relationship between leader behavioral style and cultural type, from a team perspective, for a sample of 38 collaborative teams addressing water resources issues. Chapter 1 presents an overview of the study's research problem, purpose, research question, hypotheses, theoretical underpinnings, definition of terms, assumptions, variables, scope, limitations, delimitations, and recommendations for future research. Background information is also included to provide an understanding of collaborative processes, their significance to water resources, and the importance of the relationship between leader behavioral style and team cultural type.

### Background of the Problem

Organizations in the public, private, and nonprofit economic sectors are increasingly confronted with complex issues that require external expertise and resources (Hafer, 2001). As a result, organizations are finding that problem-solving endeavors may benefit more from collaboration between organizations and people with diverse perspectives (LaFasto & Larson, 2001) than from a narrowly focused command and control approach (Straus & Milton, 2003). Conflict among diverse organizations is a

well-known and established barrier to problem solving and knowledge creation (Creamer, 2004). Organizations can no longer continue to represent their own interests; rather, they must consider greater inter-organizational responsibility (Cameron, 2004) and cooperation for solving problems. Today, organizational leaders find themselves obligated to cooperate, rather than compete, for the effective management of finite resources or for gaining an advantage in a market (Howe, 2005), especially in response to the intense growth of technology and competition (Mortehan, 2004). Organizations and their leaders therefore, must continue to develop a knowledge base regarding how to make collaboration more effective as a problem-solving tool (Lynn & Salzman, 2006).

Koutsoyiannis, Efstratiadis, and Karavokiros (2002) stated that another consequence of dealing with complex issues is that various professional disciplines may be required to conduct a thorough analysis of a problem and reach a consensus regarding a solution (Lele & Norgaard, 2005). With regard to water resource issues, involved disciplines may include science-based fields such as engineering, hydrology, biology, geology, and meteorology. Non-scientific forms of expertise that play important roles include law and policy. Environmental legislation enacted in the latter half of the 20th century, such as the National Environmental Policy Act, known as NEPA (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982), has required the inclusion of other areas of expertise such as economics, archeology, and sociology (Environmental Protection Agency, 2006a). Two important components to these collaborative interactions between the diverse disciplines and organizations are the collaborative team leader's behavioral style (Wilson, 2002) and team cultural type



(Schein, 1992). Trice and Beyer (1993) articulated this relationship as being definitive with respect to how leaders affect team culture as a component of effective problem solving. The observation of these researchers has important societal implications because ineffective or failed collaborations can be costly wherein water resources issues facing society and the environment might not be effectively resolved (Connick, 2003). Water resource leaders, therefore, must gain an appreciation of how their behavioral style contributes to the culture of collaborative efforts as a factor of performance (Paul & McDaniel, 2004). The present research investigation provided new information in this regard.

#### Statement of the Problem

The United Nations (2005) stated that a major concern of the 21st century is effective management of water resources. Because the management of this natural resource often involves several diverse stakeholders (Blomquist & Schlager, 2005), organizations increasingly find themselves working with others to address a range of issues (Hafer, 2001; Leach, 2000). As a result, a greater awareness and subsequent promotion of the importance of collaboration among public, private, scientific, and nonprofit stakeholders has been observed (Bouwen & Taillieu, 2004; Low & Randhir, 2005; Margerum & Whitall, 2004). Despite its growing visibility, collaboration is regarded as an area lacking research specific to the function of how a leader's behavioral style influences or is related to collaborative team processes such as team cultural development (Huxham & Vangen, 2000; Pennington, 2001).

This quantitative correlation study addressed this research gap by determining the relationship between leader behavioral style and cultural type for a sample of at least 30

water resources collaborative teams, with diverse memberships, operating in the United States. The memberships of these teams were surveyed with regard to six dimensions of leader behavioral style as defined by LaFasto and Larson (2001) and the strength of four cultural types as defined by Cameron and Quinn (1999). The relationship between the dimensions of leader behavioral style and the cultural type for each sample team was analyzed in terms of correlation. Study results will provide water resources collaborative leaders with new information regarding how their behavioral style relates to the cultural type of the collaborative teams they lead.

#### Purpose of the Study

The purpose of this non-experimental, quantitative, correlation research study was to determine the relationship between six dimensions of collaborative leader behavioral style and the strength of four cultural types for a sample of water resources collaborative teams, with diverse memberships, operating in the United States. The quantitative non-experimental research method was determined to be an appropriate approach because validated survey instruments were required to collect a set of numerical data for determining the relationship between predictor and criterion variables to address the study research question. Because neither observational data nor a broad qualitative elaboration of variables were attempted, qualitative or mixed methods were not employed (Creswell, 2003; Simon & Francis, 2001).

The study engaged two validated survey instruments to measure predictor and criterion variables and a demographic questionnaire to determine selected teams' fit with sampling criteria. Because the study focused on the relationship between leader behavioral style and the cultural profile of their respective team, each team surveyed

represented a single sampling unit. Predictor variables consisted of team member perceptions of their collaborative leader with regard to six dimensions of leadership behavioral style (focusing on the goal, ensuring a collaborative climate, building confidence, demonstrating sufficient technical know-how, setting priorities, and managing performance). These variables were measured through the LaFasto and Larson Collaborative Team Leader Instrument (LaFasto & Larson, 1996) presented in Appendix A. Criterion variables consisted of each sample team's membership perception of the cultural type of their collaborative team (clan, hierarchy, adhocracy, and market). Cultural type was measured through the Cameron and Quinn Organizational Cultural Assessment Instrument (OCAI) (Cameron & Quinn, 1999), presented in Appendix B. Demographic data was used to determine if a selected collaborative team and its respondents represented a diverse membership based on (a) sector represented (public, private, and nonprofit), (b) respondent professional expertise, and (c) representative organizational expertise. The demographic questionnaire is presented in Appendix C.

Survey data were analyzed by a correlation approach, a common technique for determining the strength of a relationship between numerically based, non-manipulated predictor (independent) and criterion (dependent) variable data (Leedy & Ormrod, 2001; Simon & Francis, 2001). Because the research study was an initial investigation in the relationship between collaborative leader behavioral style and team culture, statistical analysis of the measurement data was confined to Pearson correlation. Further analysis techniques such as discriminant analysis were not employed as they were beyond the scope of the study.

### Significance of the Study

Because collaboration is becoming an important tool in the management of water resources (Low & Randhir, 2005), society could benefit from an improved understanding of how collaborative leaders contribute to the effective functioning of collaborative teams. In the natural resources field, of which water resources is an element, collaboration has become recognized as a cost saving means for bringing diverse interests to a common focus (Department of Interior, 2006). In turn, water and other natural resources leaders must understand how the collaborative process can be used to enhance the management of the earth's resources in conjunction with human activity (Norton, 2005). Two components of this understanding, team leader behavioral style and its relationship with team culture were the focus of the present research investigation.

### Significance of the Study to Leadership

The study has significant implications to the field of leadership because it served to fill a gap in the body of leadership knowledge involving collaborative leadership behavioral style and the relationship it holds with cultural type in collaborative team units (Huxham & Vangen, 2000). Because of the increased tendency to use collaboration in recent decades, leaders need to understand how their actions contribute to team culture (Low & Ranhir, 2005). The current study provided collaborative water resources leaders with a means of assessing how their behavioral style relates to the cultural type of the collaborative teams they lead.

### Nature of the Study

The study used a quantitative, correlation, and non-experimental approach for analyzing how leader behavioral style relates to the strength of four cultural types for a

sample of 38 water resources collaborative teams with diverse memberships. The quantitative non-experimental methodology was selected because numerically based validated survey instruments were required to collect data necessary for measuring statistical relationships between predictor (the leader's collaborative behavioral style) and criterion (team cultural type) variables. Because neither observational data, nor a broad qualitative elaboration of study variables were intended as part of the study scope, qualitative or mixed methods were not used (Creswell, 2003; Simon & Francis, 2001). The correlation design was employed for measuring the strength of the relationships between the aforementioned variables. The correlation design was also selected because survey data were not manipulated, controlled, or referenced with regard to causality.

The study employed two validated surveys from previous research (Cameron & Quinn, 1999; LaFasto & Larson, 1996) and several demographic questions. Permission was obtained to use the two validated surveys by their developers. Permission documentation is presented in Appendix D. The instruments were used to survey a sample of collaborative teams in the United States addressing water resources issues. Each surveyed team was required to have a defined leader and exhibit diversity among its members in the form of at least two stakeholders that represented either two or more economic sectors or two or more areas of personal or organizational expertise.

The LaFasto and Larson Collaborative Team Leader Instrument (LaFasto & Larson, 1996) was used to collect data on the behavioral style of collaborative leaders. The instrument employs a Likert-type scale to measure six behavioral style dimensions: (a) focusing on the goal, (b) ensuring a collaborative climate, (c) building confidence, (d) demonstrating sufficient technical know-how, (e) setting priorities, and (f) managing

performance. The Organizational Culture Assessment Instrument developed by Cameron and Quinn (1999) was used to collect data with respect to the strength of each of four cultural types: (a) clan, (b) hierarchy, (c) adhocracy, and (d) market. The strength of each cultural type was measured through six OCAI elements: (a) team dominant characteristics, (b) team leadership, (c) management of employees or team members, (d) organizational glue, (e) strategic emphasis, and (f) criteria for success. A set of demographic questions was used to provide information on whether selected teams and their survey respondents met or did not meet the criteria of a diverse membership described previously.

Survey data were analyzed by the Pearson correlation technique to address the research question and to test the significance of the stated null hypotheses. The Pearson method was selected because it is not intended to develop theory or imply causation between variables, as do other approaches such as descriptive or causal-comparative methods (Simon & Francis, 2001). The selected approach was only used to evaluate the individual relationships between study variables for each sample team.

#### Research Question and Hypothesis

A single research question represented the crux of this research. The research question was grounded in understanding the relationship between six elements of a leader's behavioral style and four cultural types in 38 water resources collaborative teams. The research question was

To what extent were the six leadership styles and the four cultural types, as identified by LaFasto and Larson (1996) and Cameron and Quinn (1999)

respectively, correlated for a sample of 38 water resources collaborative teams with diverse memberships?

Based on the research question stated above, 24 related hypotheses were formulated. Each hypothesis represented a pairing of predictor and criterion variables. Expressed in the null form, the hypotheses were

H<sub>10</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H<sub>20</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H<sub>30</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H<sub>40</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999)

market cultural type in water resources collaborative teams with diverse memberships.

H5<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H6<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H7<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H8<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.



H9<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H10<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H11<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H12<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

H13<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron

and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H14<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H15<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H16<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

H17<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of setting priorities and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H18<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style

dimension of setting priorities and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H19<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of setting priorities and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H20<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of setting priorities and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

H21<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H22<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H23<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999)

adhocracy cultural type in water resources collaborative teams with diverse memberships.

H24<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

The relationships tested by these hypotheses are displayed in matrix form in Table 1.

Table 1

*Relationships Tested between Predictor and Criterion Variables*

	Clan	Hierarchy	Adhocracy	Market
Focus on the Goal	H1 <sub>0</sub>	H2 <sub>0</sub>	H3 <sub>0</sub>	H4 <sub>0</sub>
Ensuring Collaborative Climate	H5 <sub>0</sub>	H6 <sub>0</sub>	H7 <sub>0</sub>	H8 <sub>0</sub>
Building Confidence	H9 <sub>0</sub>	H10 <sub>0</sub>	H11 <sub>0</sub>	H12 <sub>0</sub>
Demonstrating Sufficient Technical Know-How	H13 <sub>0</sub>	H14 <sub>0</sub>	H15 <sub>0</sub>	H16 <sub>0</sub>
Setting Priorities	H17 <sub>0</sub>	H18 <sub>0</sub>	H19 <sub>0</sub>	H20 <sub>0</sub>
Managing Performance	H21 <sub>0</sub>	H22 <sub>0</sub>	H23 <sub>0</sub>	H24 <sub>0</sub>

Theoretical Framework

Due to the complexity of the postmodern environment and the increasing reliance on collaboration, additional research is required to gain a more comprehensive understanding of leadership's role in managing the collaborative inter-organizational interface (Clegg & Hardy, 2002). With regard to managing natural resources, Leach (2000) stated that public policymaking and implementation in the United States are

increasingly reliant upon a process of consensus making that involves a broad range and depth of government and stakeholder representation. Hafer (2001) observed that broad scale collaboration in the natural resources arena is becoming more common.

Water resources management is no stranger to the practice of organizations joining forces to address problems. Because water is a basic natural element, its management can have a profound impact on the health and functioning of the Earth's natural resources systems (Environmental Protection Agency, 2006b). Water management also has important implications for human endeavors such as industry and community development. Water related issues increasingly involve several stakeholders and types of expertise, necessitating a collaborative approach (Hafer, 2001; Leach, 2000). Thus, water resources leaders need to consider the importance of their role in creating opportunities to align themselves and their organizations with other entities for effectively addressing water resources issues (Mehan, 2007).

Rickenbach (2000) illustrated this through his example of watershed councils interfacing with woodland owners to resolve stakeholder concerns, such as water quality and supply for effectively managing local fishery habitats. In his example, no individual stakeholder had the expertise to resolve this complex issue. Instead, each entity was dependent on the expertise of others in the form of foresters, fishery biologists, and water resources professionals.

Wilson (2002) stated that collaborative leadership is important to the successful interaction of people who represent diverse perspectives. He defined the collaborative leader as "one who inspires commitment and action, leads as a peer problem solver, builds broad-based involvement, and sustains hope and participation" (p. 22). Vangen

and Huxham (2003) stated that leaders who possess the proper skills to facilitate team collaboration in a partnering venture are essential to managing tensions that can arise between ideology and pragmatism. Huxham and Vangen (2000) added that cooperative efforts depend upon a leader's ability to build trust and understanding and negotiate joint goals. They alluded to the notion that leaders require energy, commitment, skill, and the ability to nurture the process of collaboration. The leader's ability to instill these requirements may be associated with how the leader's behavior influences the team's culture. As Schein (1992) stated, leaders "create culture" (p. 209) through their role as cultural managers.

Schein (1992) affirmed that for one to comprehend the relationship between leadership and culture, the importance of leadership in the formation of an organization's culture should be understood. He explained that organizational culture emanates from three sources: (a) the beliefs and values of the organization's founders, (b) the experiences of organizational members as the group evolves, and (c) new beliefs or values brought in by new members. Brown, Ohlinger, Rusk, Delmore, and Ittmann (2003) agreed that culture is basic to how well an organization functions and fulfils its mission. In the case of a collaborative organization, leaders can influence a team effort while serving in several capacities such as group founder, fellow participant in its evolution, or new influence on the group if taking over from a previous leader (LaFasto & Larson, 2001).

Summarizing, a leader's collaborative ability influences how effectively teams work toward a common goal and how team culture evolves (Northouse, 2001; Schein, 1992). The current study was designed to add to the body of research knowledge

regarding the leader-culture aspect of the collaborative process. Results could potentially provide water resources collaborative leaders with new insight into how to address complex issues through enhanced knowledge of their influence on the collaborative process.

### Definition of Terms

Several terms, specific to this study, are used throughout this document. Each represents an important component of this research. In order to avoid any undue misunderstanding the following terms and concepts are operationally defined below:

*Adhocracy Culture:* For purposes of this study, adhocracy culture, one of four organizational cultures described by Cameron and Quinn (1999), represented an environment with no centralized form of power or authority relationships. In adhocracy culture, power is considered to flow from person to person or team to team within the organization. Individuality, risk-taking, and forward thinking are valued attributes of organizational members. Adhocracy culture is characterized by creativity and an entrepreneurial and risk oriented style of dynamics (Cameron & Quinn, 1999).

*Clan Culture:* Clan culture is one of the four cultural types described by Cameron and Quinn (1999). For purposes of this study, clan culture was defined as a family-type of atmosphere that exhibits shared values and goals, participation, individuality, and a sense of cohesion. The clan cultural form represents a friendly workplace in which people share themselves with others in the organization. Leaders are viewed as mentors and parenting figures. The clan organization has an air of strong loyalty and commitment and places high value on teamwork, participation, and consensus (Cameron & Quinn, 1999).

*Collaboration:* For purposes of this study, collaboration was defined as a process that involves cooperative interaction between a diverse array of organizations or individuals working together to solve water related problems. Collaboration can be viewed as a partnership or alliance in which entities work together on a specific task or project while retaining their individual independence and identity (Nicola, 2005; Schulte & Osborne, 2003; Shaw, 2003).

*Collaborative Culture:* In this study, culture was defined as the sharing of a pattern of assumptions that water resources teams learned while solving water-related problems. Defining these cultures involved what Cameron and Quinn (1999) described as a process of “external adaptation and internal integration, that has worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” (p. 12). For purposes of this study, the collaborative culture of a water resources team is defined by the relative strength of the four cultural types defined by Cameron and Quinn.

*Collaborative Organization or Team:* For study purposes, a collaborative organization or team was defined as a single entity, composed of one or more represented organizations or members consisting of a diversity of professional expertise or stakeholders. Since this study was focused on team-based results, each collaborative team represented a single sampling unit. Beyerlein, Freedman, McGee, and Moran (2003) described these types of organizations in terms of a collaborative work system organized as a team or as a team-based organization.

*Cultural Type and Strength:* In this study cultural type and strength was represented by the relative score of cultural type (clan, hierarchy, market, and adhocracy)



as measured by Cameron and Quinn's (1999) OCAI. The strength of each of the four OCAI cultural types were based on a 100-point scale among the six OCAI elements: (a) team dominant characteristics, (b) team leadership, (c) management of employees or team members, (d) organizational glue, (e) strategic emphasis, and (f) criteria for success. Details on the scoring process used by Cameron and Quinn for the OCAI are presented in chapter 3.

*Hierarchy Culture:* Hierarchy culture is one of the four cultural types of organizations described by Cameron and Quinn (1999). For purposes of this study, hierarchy culture was defined as the bureaucratic organizational concept envisioned by Weber (1922). The hierarchy cultural type is characterized as a stable, controlled environment with a clear line of authority. Hierarchy culture operates on a defined set of rules or regulations. Organizational members are assigned based on skill or specialty and are accountable for their assigned duties and often work or relate to others in a non-personal format. Organizations operating under a hierarchical culture stress efficiency, a set form of communication and flow of power, and a reliable, predictable output. Leaders of these organizations are expected to be good coordinators and organizers and organizational members are expected to follow the rules (Cameron & Quinn, 1999).

*Leadership Behavioral Style:* The current study subscribed to the definition of leadership behavior style defined by Joyce (2004) as the process a leader uses to make a team or organization successful. Kuo (2004), Outhwaite (2003), and LaFasto and Larson (2001) linked leadership to several elemental dimensions of behavioral style. In the present study, the behavioral style of a collaborative leader was measured through six

dimensions of behavior through LaFasto and Larson's (1996) Collaborative Team Leader Instrument.

*Market Culture:* Market culture is one of the four organizational cultures described by Cameron and Quinn (1999). In this study, market culture was defined as the culture of an organization that functions in accordance to transactional arrangements and costs. Market culture focuses its operations on the economic influence of the market. Competitiveness and productivity drive the market cultural type (Cameron & Quinn, 1999).

#### Assumptions

A primary assumption of the study was that leaders are important in the creation of the culture of an organization (Cameron & Quinn, 1999). Hence, it was assumed that the leader is a vital link to the development of cultural type in water resources collaborations. Another assumption was that the LaFasto and Larson (2001) dimensions of a leader's behavioral style are related to Cameron and Quinn's cultural types in collaborations and that the information provided by the study instruments would adequately address the research question. Because feedback was required from the collaborative team member perspectives, it was assumed that each respondent would answer all survey questions and that selected collaborative teams would provide an adequate response level that, at minimum, would represent the level of diversity required for the study. Another assumption was that survey respondents would answer the survey questions in a timely and truthful manner.

### Scope of the Study

The study scope was limited to addressing the relationship between leader behavioral style and team cultural type in water resources collaborative teams, with diverse memberships, operating in the United States. This relationship was addressed on a team unit basis. Data collection, analysis, and discussion of results were limited to data collected from the LaFasto and Larson (1996) Collaborative Team Leader Instrument and the Cameron and Quinn OCAI (1999).

### Limitations

Several study limitations were identified. Limitations included the influence of the variety of water issues (water supply, water quality, wetland management, flooding, hydropower, navigation, and terrorism) addressed by collaborative teams. Another limitation was that teams were required to have a diverse membership. The diversity requirement entailed each team to have representation from at least two economic sectors and/or have either individual or organizational expertise in at least two categories identified in the demographic questionnaire. A third limitation was that personal perceptions were used to define leader behavioral style and the cultural type of each collaborative team. Personal bias and misunderstandings of survey questions on the part of respondents could affect the results. A fourth limitation was the drawback of using the correlation research design. With correlation, there was no test of cause and effect. Thus, study results could only state that the two variables in each hypothesis test do or do not relate to one another on a statistically significant level. Because of this limitation, the direction of influence between all the study variables was not known (Bradley, 2007).

Controlling effects of study limitations was accomplished through adherence to the stated research question and methodology as well as restriction of data collection to the data obtained from the survey instruments. Study teams were limited to those with diverse memberships addressing water resources issues in the United States. Data collected were limited to the six leadership behavioral dimensions described by LaFasto and Larson (1996) and four cultural types defined by Cameron and Quinn (1999). The study methodology restricted the researcher to analyzing survey responses to the results of the Pearson correlation methodology.

#### Delimitations

Delimitations included the restriction of the study sample to water resources collaborative teams, with diverse memberships, operating in the United States. Another restriction was that team leaders were not surveyed due to the study scope only focusing on team member perceptions of their leader's behavioral style and their team's cultural type. Finally, the study was designed to focus only on team unit results, rather than on individual team member responses.

#### Summary

Chapter 1 has presented the problem addressed by this study. Organizations of the twenty-first century are now often finding themselves relying upon a collaborative process to address complex issues (Cameron, 2004). One field of endeavor that increasingly uses collaboration is natural resources management (Hafer, 2001; Leach, 2000) and more specifically, water management. Water-focused organizations, though often having competing agendas, are frequently directed to work together for the common goal of equitably apportioning a limited supply of water among many interests

(Leach, 2000). Represented organizations also may depend upon a diverse array of professional disciplines (LaFasto & Larson, 2001) such as the engineering, natural, and social sciences as well as legal or politically based expertise. The increased reliance on the collaborative process means an expanding need for teams to enhance their ability to blend diverse technical and social frames of reference (Wade et al., 2002). How collaborative groups organize and create knowledge has been linked to leadership (Duemer et al., 2004) and team culture (Cameron & Quinn, 1999). Thus, a study of the importance of the relationship between collaborative leadership behavior and the cultural type of collaborative proceedings is warranted.

Chapter 2 presents a detailed review of the research literature on leadership and organizational culture. The review provides an in-depth discussion of the importance of two elements of these topics: leader behavioral style and organizational culture. Chapter 2 also presents literature associated with the collaborative process and collaborative leadership. Literature has been cited to support the selection of the study sample (water resources collaborations) and the selection of the study survey instruments to address the research question.

## CHAPTER 2: LITERATURE REVIEW

Chapter 2 presents a review of the historical literature on leadership and organization theory from the traditional and collaborative points of view through addressing the historical underpinnings of how organizations develop, function, and adapt in terms of organization theory. Literature cited is used to discuss the importance of leadership and culture in the collaborative process as well as provide a link to the study sample of water resources collaborations. The literature review provides support for the selection of study survey instruments and presents information regarding the importance of exploring the relationship between leader behavioral style and collaborative team cultural type.

### Title Searches, Articles, Research Documents, Journals Researched

To perform a comprehensive review of peer reviewed journal articles and doctoral dissertation work, several of the University of Phoenix Library Internet search engines were used: EBSCOhost, ProQuest, InfoTrac One File, ProQuest Digital Dissertations, and ERIC. Keywords used in searches involved several topical components of leadership, organization theory, team processes, organizational culture, and leadership and organizational topics linked to natural and water resources management. Published information was also retrieved from government Websites, journals, textbooks, and research libraries that specialize in leadership, collaboration, organizational culture, and water resources management.

### Gaps in the Historic and Current Literature

The body of knowledge and empirical research regarding leadership and organization theory is vast. Much of the historic and current literature on leadership and

organizations provides a foundation for the study concepts of leadership behavior and organizational culture, but does not provide detail on the relationship between the two (Marrone, 2005; Pennington, 2001; Schein, 1992). Research is limited regarding the relationship in the context of collaborative teams (Clegg & Hardy, 2002). For example, Huxham and Vangen (2000) observed the need for research regarding the role of leadership to mobilize the collaborative process.

DeWald (2002) also indicated the lack of research involving the negative impacts of the team leader on team effectiveness. McGuire (2006) added that with regard to skills required in collaborative settings, there is a gap between the knowledge of practitioners and the research. McGuire emphasized the need for developing new techniques and competencies for effective collaboration. Regarding culture, Bray (2003) indicated that the ability of a leader to encourage cultural development among subordinates requires further research.

With regard to water resources collaborations, Layzer (2002) stated that the effect of the collaborative process on environmental resource issues requires additional research. Moore and Koontz (2003) added that past research has primarily emphasized the uniqueness of various resource management collaborations, but has ignored theory. With regard to the diversity of team membership in many water resources collaborations, little is known regarding the collaborative process between represented disciplines or functions, which are common elements of large complex collaborative projects (Hoegl, Weinkauff, & Gemuenden, 2004). An example is the lack of research regarding the interaction between tribal and non-tribal stakeholders in water related collaboration (Cronin & Ostergren, 2007). At this juncture, no research focuses specifically on the

relationship between cultural aspects of water resources collaborative teams with diverse memberships and the leader's behavioral style.

### Leadership Theory and Collaborative Leadership

Leadership is an important component of collaboration. The leader is a catalyst for bringing people together (LaFasto & Larson, 2001; MacVaugh, 2007) emphasizing the importance of understanding the theory behind the relationship between leaders and collaborative organizations. Many theories developed over the past century have application in terms of how a leader interfaces with individual or multiple followers in single organizations rather than the multi-organization format common to collaboration. The applicability of these theories to the collaborative process has only begun to emerge in the last 60 years. The next section outlines the growth of leadership theory as background to the discussion of the complexities of leadership and its influence on collaborative organizations and provides support for the selection of the LaFasto and Larson (1996), and Cameron and Quinn (1999) instruments for measuring the relationship between leadership behavior and culture in collaborative teams.

#### *Classic and Modern Leadership Theory*

Leadership theory evolved from the single concept that leaders possess innate talents to an array of intricate concepts that describe the complexity of relationships between leaders, organizations, and followers. The great-man theory popularized during the mid-19th century by Carlyle, James, and Galton (Bass, 1990), focused on innate personal leadership traits as definitive of effective leadership. As the great-man debate evolved through the 1800s, trait theory began to emerge through the work of Kohls and Irle, Bernard, and Bingham. Popularized in the early 20th century, trait theory stated that



leaders are naturally suited to lead because of a predetermined set of desirable leadership characteristics that included mental capacity, achievement, responsibility, participation, and social status (Bass, 1990). The great-man and trait theories laid a foundation for future theoretical development in the area of collaborative leader behavioral style. For example, collaborative leaders, through their natural or developed competencies, can demonstrate effective team leadership through the behavioral style dimensions identified by LaFasto and Larson (2001).

In the 1930s, leadership thought refocused on the importance of the follower on a leader's effectiveness. At that time, behavioral theory emerged, positing that a leader's behavior serves as a cue to influence the actions of followers and that follower behavior can reinforce or modify the leader's actions (Bass, 1990). Behavioral theory supported Goldstein's (2005) observation that the followers' actions and knowledge also influence a leader's ability to tap into their collective ideas, opinions, and experience.

Closely tied to behavioral theory was psychoanalytic theory, which emerged before World War II through the work of Freud, Frank, and Redl. Based on the idea that leadership behavior and character development begin in early childhood, psychoanalytic theory postulated that the early family environment could influence a leader's development of ability and style (Bass, 1990). Other theories that emerged in this period set the stage for postmodern leadership thinking. Power theory or the Machiavellian leader style was based on the assumption that leadership is oriented toward political manipulation, control, and use of position to motivate others (Wren, 1995). Power theory deviated from social and humanistic-based ideas of leadership because it postulated that power, when used as a tool of persuasion, can be an effective means to direct others.

The leadership dialog in the mid-twentieth century witnessed a merging of the individualist perspective of leadership theory with a broader view of environmental and organizational influences. Situational and personal-situational theories emerged through the work of Stogdill, Hersey-Blanchard, Westburgh, Case, and others (Bass, 1990). Westburgh exemplified these theories by stating that leadership includes the affective, intellectual, and action traits of the individual, combined with influences of the surrounding environment (Bass, 1990). Both theories represented advancement in developing more complexity with regard to the understanding of leader-group interactions. They also provided a link with the importance of LaFasto and Larson's (1996), and Cameron and Quinn's (1999) research of leader behavioral style and organizational cultural type.

As conjectural and philosophical discussions on leadership continued to evolve, so did the complexity of leadership theory. Shortly after World War II, development of the leader-role theory bridged the modern and early postmodern eras. Homans articulated that leadership roles are based on three variables: action, interactions, and sentiments (Bass, 1990). Leader-role theory touted the influence of rules and processes on a leader's control. Developers of this theory contended that leaders operating in strict rule situations may tend to lead through rule reaction rather than by risk taking or personal creativity. Similarly, LaFasto and Larson's (2001) collaborative dimensions of goal focusing, setting priorities, and managing performance is representative of rule-based process concepts in that the components of a collaborative leader's own rule-making creativity can build behavioral style.

### *Leadership Theory in the Postmodern Era*

After the Second World War, a new era of technology, communication, and organizational development forced theorists to rethink the subject of leadership. During that period, humanistic and environmental influences gained prominence. One of the first postmodern forms of leadership theory was reinforced change theory, which held the notion that “leadership is the observed effort of one member in a group to change the motivation, understanding, or behavior of other members” (Bass, 1990, p. 45).

Reinforced change theory focused on modifying followers’ expectations of rewards and punishment for their performance through the leader’s ability or authority to reward or punish. LaFasto and Larson (2001) also listed reward and incentives as behavioral style dimensions of collaborative leading, linking them to the leadership skill of aligning rewards with team goals and performance.

In the 1970s, transformational theory emerged through the work of Burns, Hollander, Downton, and others who linked group processes with the perceived needs of the group or organization and the personal interest of each team member (Bass, 1990). Transformational theory stated that leaders achieve change by encouraging individuals to reach a high level of human awareness, relationship, motivation, and morality through the leaders’ traits of charisma, and intellectual prowess. Transformational leadership provided a link to the work of LaFasto and Larson (2001) in terms of the behavioral dimension of a leader’s ability to instill team confidence.

In the 1970s, theorists including Graen, Blau, and Jacobs championed exchange theory, which emphasized the importance of social interaction within an organization in the form of a trade of power, material, and social-psychological benefits (Bass, 1990).

Exchange theory linked the aspects of reward, behavior, and goals of earlier theoretical work to the importance of the effectiveness of leader-follower interaction. LaFasto and Larson's (2001) behavioral style dimensions touched upon exchange theory in terms of a leader's use of rewards to enhance team confidence.

LaFasto and Larson's (1996) collaborative leader instrument and Cameron and Quinn's (1999) culture assessment tool have similar but weaker links to contingency theory developed by Fielder in the 1970s. Contingency theory continued to focus on the leader-follower relationship, stressing the importance of the environment or culture in which the relationship operates. Fielder stated that the success of a situation is contingent on the "esteem of the least-preferred co-worker" (Wren, 1995, p. 86), meaning that the development or training of the *least* preferred worker or group member can provide a leader with more situational control and provide the leader with the ability to recognize performance problems. A weakness of contingency theory was that it did not explain how better performing subordinates contribute to an organization's success (Wren, 1995). Contingency theory conflicted with LaFasto and Larson's (2001) leader behavioral style dimensions in that it did not fully address the idea that contingency reward or group process, when not used equitably, can undermine the building of confidence and trust in the collaborative team, thereby limiting its morale and cultural development (Cameron & Quinn, 1999).

Pfeffer, Calder, Green, and Mitchell developed attribution theory in the 1970s, augmenting the reward-punishment aspect of leadership (Bass, 1990). Attribution theory focused on how leader behavior responds to the leader's interpretation of subordinate performance. Based on this interpretation of follower behavior, leaders could be tempted

to take a more punitive-style approach if poor results affect unit performance (Wren, 1995).

Path-goal theory emerged through the work of Georgopolous, Mahoney, Jones, Evans, House, and Mitchell in the late 1970s (Bass, 1990). The path-goal concept expanded on the function that contingent reward plays in influencing the motivation and satisfaction of subordinates (Bass, 1990). Path-goal theory was based on the rationale that situational awareness determines leader behavior for accomplishing path-goal purposes and that situational awareness may be influenced by the technical competence of the leader and team. Path-Goal theory provides another link to the LaFasto and Larson's (1996) instrument in that technical competence, a dimension of leader behavior, can lend credibility to the team and its leader by facilitating a clearer setting of priorities and goals and a more open culture in the group.

Several theorists, including Sharf, Burke, and Bourdieu, developed communication theory in the 1960s and 1970s. Communication theory stressed the importance of communication to organizational relationships, leadership status, and goal accomplishment (Bass, 1990). Communication theory relates to several dimensions of LaFasto and Larson's (2001) leader behavioral style dimensions and Cameron and Quinn's (1999) cultural types in that clarity of goals, priorities, and performance standards are important dimensions of both behavioral style and team culture.

One theory of leadership, political theory, has transcended time from the ancient to postmodern philosophers. Originated by Plato (Bass, 1990), political theory continues to play a role in contemporary leadership dialogue and is applicable to the highly charged environment in which natural resources collaborations operate. Political theory defined

the leader-member relationship and explained in part how leaders can emerge through election, necessity, force, and power. Political activity is important to the developing culture of an organization, a point that many leaders fail to recognize (Trice & Beyer, 1993).

The historical theories covered in this review lay the groundwork for understanding the more contemporary notion of collaborative leadership. They provide relevance through their link with several of LaFasto and Larson's (2001) and Larson and LaFasto's (1991) dimensions of collaborative leadership, which were used as a basis for this study. These theories also relate to the development and management of the culture of a collaborative group as defined by Cameron and Quinn (1999) which also served as an important foundational element.

#### *Collaborative Leadership Theory*

Collaborative leaders are charged with guiding a team of cooperating members who often represent a diverse array of personal, organizational, or political interests. The next two sections explore the idea of collaborative leadership from two perspectives: the leader-team relationship, or a followership and teamship point of view, and the function of the leader, emanating from a leadership and organizational viewpoint. Each perspective is presented theoretically and in terms of the application of study instruments.

*The role of followership and teamship in collaboration.* As far back as 1933, researchers recognized that followers had an important impact on the effectiveness of their leaders. Follet (1926) stated that a follower's role is not only to follow, but also to actively engage the leader in order to keep the leader effective and in control. Follet also stressed that the relationship between leaders and followers is critical to team

functioning. Brown and Thornborrow (1996) discussed followership with respect to organizational functionality. These researchers indicated that most organizational members spend a majority of their time following rather than actively leading. Consequently, they are unable or unwilling to lead.

Brown and Thornborrow's (1996) perception was viewed by other researchers as misleading and detrimental to organizational or team success. For example, Brown and Thornborrow's concept countered the work of LaFasto and Larson (2001) and Schein (1992) in that it negated the importance of the team-leader relationship. Athanasaw (2003) further countered that follower characteristics, especially in cross-functional teams, lend value to the proceedings. Townsend and Gebhardt (1997) also disagreed with Brown and Thornborrow (1996) by arguing that for leaders to be effective, they must understand the importance of the subordinate. Leaders often must switch back and forth from follower to leader roles throughout the course of a task (Lussier & Achua, 2004). Consequently, a leader should possess good follower characteristics in order to cement the leader-follower relationship into the notion of teamship.

Townsend and Gebhardt (1997) illustrated the leader-follower concept by using examples from the U.S. military. The U.S. Marines, for example, teach their leaders the concept that a leader must be an effective follower to lead. The U.S. Coast Guard Academy takes followership so seriously that it devotes a full academic year to the concept.

Examples such as these led Townsend and Gebhardt (1997) to several conclusions. They stated that followership takes energy, commitment, and a sense of judgment, and that leaders need followers who are not mere reactors to their actions. Both

followers and leaders must actively contribute, know their function, and take pride in their role to encourage effective teamwork and in turn, successful collaboration. The human dimension of followership, as described by Ayers et al. (2005), serves to support the importance of studying leadership and culture from the collaborative team member or follower viewpoint.

*The organizational role in collaboration.* Hall and Densten (2002) examined the role that leader-follower relations play in the organizational context, which has applicability to multi-organizational collaborative efforts. Since team members often speak for organizations and can either be subordinate to a leader or lead the organization, they play a role similar to what Hall and Densten referred to as follower organizations. Using an example of technology development, these researchers introduced the idea that follower organizations often take direction from leading entities while providing value to the lead organizations through creativity and insight. Similarly, in collaborations, follower groups such as support teams may add value to the joint process by providing valuable information to the leader or lead organization.

The ability to take direction and contribute as followers is in part dependent on the leader's ability to provide an open climate for the organizational group. The concept is supported by LaFasto and Larson's (2001) collaborative leadership dimension and Leach's (2000) notion that a successful team process partly depends on fairness and equal representation of all views and all team members require an equal knowledge base and equal access to available knowledge (Jamal, 2004). Equality also relates to the cultural aspects of an organization or collaborative group in that leaders and followers can



mutually influence the organization's ability to set ideologies, norms, and acceptable behavior (Lussier & Achua, 2004; Trice & Beyer, 1993).

Townsend (2002) emphasized the importance of the leader-follower relationship in team efforts. He described it as a continuous spectrum along the Leadership/Teamship/Followership (LTF) Continuum between passive followership and strong leadership. *Teamship* occupies the area of the continuum between these two poles. The benefit of the LTF is that it recognizes that teamship operates along a large part of the spectrum that extends into both leadership and followership areas. Hence, teamship could be considered either fluid or dynamic. Larson and LaFasto (1991) and LaFasto and Larson (2001) also recognized the idea of teamship through their leadership dimensions of building confidence between different members of the team, and allowing for management and recognition of performance.

*The role of the leader in collaboration.* Boswell and Cannon (2005) stated that leaders are a key component to successful collaboration. Lasker and Weiss (2003) contended that the leader or manager of partnering events acts as the “‘glue’ that makes it possible for a broad array of community stakeholders to combine their knowledge, skills, and resources so they can understand complex problems and carry out innovative and comprehensive interventions” (p. 132). Wilson (2002) stated that collaborative leadership aids interaction between participants who represent diverse perspectives. He defined the collaborative leader as “one who inspires commitment and action, leads as a peer problem solver, builds broad-based involvement, and sustains hope and participation” (p. 22). He also recognized that collaborative leaders could be influenced by such factors as clarity of goals and objectives, balance in approach, level of self-facilitation, existence of

ground rules, contribution of participants, and the taking of responsibility by participants. Leaders also cultivate networks (Kezar, 2005), and can play a key role in creating opportunities for collaborative association (Feldman, Khademian, Ingram, & Schneider, 2006). The collaborative notion of leadership has been demonstrated in British politics, in which collaboration is considered the final phase in community problem solving (Leach & Wilson, 2002).

Despite this research, there exists a degree of uncertainty as to how leaders should best assert influence on a team. Huxham and Vangen (2000) stated that there frequently is “ambiguity and complexity surrounding the membership of collaborations, so there is no clear, consensual sense of who should be influenced or which organizations should be influenced” (p. 1160). They contended however, that an important influencing factor is the leader’s ability to build trust and understanding and negotiate joint goals depends upon the leader’s energy, commitment, skill, and ability to nurture the process. Beatty and Brew (2004) stressed the need for collaborative leaders to build relationships and understanding on a foundation of trust to contribute to the development of the initial cultural climate and shape partner interactions (Inkpen & Curral, 2004), team culture, and set the stage for collaborative performance (Paul & McDaniel, 2004).

Many dilemmas associated with leaders of organizations or collaborative proceedings require the collaborative leader to make ethical and moral decisions about the course of action. Several researchers have developed useful analytical techniques for collaborative leaders facing moral quandaries. For example, Hosmer (2003) described a diagnostic process based on a basic understanding of leaders, their organizations, society’s moral standards, the moral problem at hand, and the potential impact of the

choice. Carlson and Kacmar (1997) stated that ethical decision-making processes could be grouped and analyzed from three main frames of reference: (a) moral philosophy, (b) cognitive moral development (CMD), and (c) ethical value systems. Cognitive moral development stresses that leaders' cognitive powers and personal process systems can bias their frame of moral judgment affecting personal or organizational consequences, performance perceptions, personal motivation, expectations of others, and perceived societal duties.

Collins (2001), in *Good to Great*, explored the tactics that could improve the effectiveness of postmodern collaborative leaders and partnerships. He coined the term Level Five leadership that is grounded in a five-level hierarchy of talents, characteristics, and temperaments. The first level stresses that leaders must possess the talent, knowledge, and skills to operate within their required realm. The second level states that leaders must be willing to contribute to the team in terms of group goals and objectives. The third level stresses that leaders must be competent in organizing subordinates or team as well as marshalling available resources such as funding, computing power, and capital. These three levels combine into the fourth level of Level Five leadership, leading with confidence while maintaining a strong commitment to a collective vision.

At the top of the hierarchy or fifth level, lies what Collins (2001) described as strong executive skills, needed to interface with all facets of the organization as well as with others who may contribute or have a stake in the outcome of the task. Level Five leaders build their reputations and inspire respect based on personal humility and professional will. Ego or self-promotion does not necessarily make a leader effective in

team situations; rather, leaders need to overcome their egos and personal agendas to be effective (Cavanaugh & Cheney, 2002).

Collins (2001) also related his Level Five leadership concepts to the cultural development of the group. Collins credited George Rathman, a founder of the Amgen biotechnology company, with emphasizing the need to create a culture of discipline in an organization. Rathman advocated avoiding a bureaucratic culture and instead seeking a culture of people “who take disciplined action” (p. 124) to build a non-tyrannical culture of freedom and responsibility, meaning that the leaders, through their contribution to a culture of discipline, can energize the group’s passion, talents, and motivation.

Similar to Collins’ leadership ideas (2001), Goleman, Boyatzis, and McKee (2002) developed the idea of Emotional Intelligence (EI) to describe leaders who understand when to diverge from an organizational or personal view and instead collaborate with others to make effective decisions. EI leaders appreciate collaboration as a means of aligning their personal priorities with those of the group. These leaders can nurture relationships, bring issues into clearer focus, and create a team culture of synergy. They can also draw a collaborative group into an “active, enthusiastic commitment to the collective effort and build spirit and identity” (Yoder, 2005, p. 52).

#### Organizations and Collaboration

Collaborative proceedings involve the interaction between leaders and participants grouped in a single team or system of teams. These proceedings also illustrate the importance of organization theory to the cooperative process. The remainder of this section presents the development of organization and systems theory in relation to

the collaborative process to support the use of LaFasto and Larson's (1996) and Cameron and Quinn's (1999) instruments for study data collection.

### *Organization Theory*

Organization theory has examined the classical, modern, and postmodern industrial world to appreciate how humans strive for productivity, communication, value, and culture alongside the processes of performing work and achieving goals. The progression of organization theory has evolved in complexity as organizations have adapted to cope with the dynamics of their environment. This evolution of complexity is described in the next several paragraphs.

*Classical and early modern organizational concepts.* Classical organization theory focused on either sociological or managerial issues. The sociological angle addressed the changing dynamics and roles of formal organizations as well as the broader influences that industry placed on organizations. The management side addressed practical problems that managers of organizations face (Hatch, 1997).

As the early modern era approached, organizational and management theory began to develop into forms that are more complex. For example, the concept of the usefulness of the division of labor, devised by Adam Smith (1776), was criticized by Luther Gulick in the 1930s, who stated that labor segregation is limiting, if overdone, and can reverse the organizational optimization process. Gulick (1937) surmised that division of labor by specialty requires planning and coordination, bolstered by appropriate managerial control.

Fayol (1916) extended this line of thought by developing concepts related to discipline, unity of command, centralization, line of command, order, equity, tenure,

initiative, fair compensation, and esprit de corps. Dyck (2004) critiqued Smith's concepts as having been "designed for [a] time when community bonds were sufficient to keep competitive individualism from turning against the common good. Our world is entirely different from Smith's in terms of its enormous flows of international capital, labor, travel, and communications" (p. 316). Dyck further stated that a culture of global collaboration is important to building a sustainable civilization.

Another classical theorist was Taylor (1916), who espoused the concept of scientific management. Taylor stated that organizational management or leadership was the outgrowth of a revolution in the minds of managers and workers toward their duties, their employers, and themselves for achieving the least expensive outcome. Conceived in the form of linear thinking and process, scientific management was deemed valuable to technical activities such as assembly and processing, but it did not meet the needs of the complexity of problems and products that would evolve in the latter half of the 20th century (Hatch, 1997).

Another contributor to the classical school was Weber (1922), who described the concept of bureaucracy. According to Weber, a bureaucracy is an organization that operates under an extensive system of laws and regulation. Bureaucracies form a type of organizational culture, as described by Cameron and Quinn's (1999) hierarchy culture. Bureaucracies are stable environments for both management and workers, which often provide lifelong tenure with regular compensation. Hierarchy within bureaucracies rests on the concept of seniority, which Weber postulated limits the inflow of new ideas. In the postmodern world, bureaucracies still exist and often participate in collaborative efforts.

The late classical era of organization theory began during World War II. Neoclassical theorists turned to empirical research to counter the simplistic and mechanistic views of the classical theorists. Noteworthy theorists of the neoclassical school were Simon (1946), Barnard (1938), and Selznick (1948). Simon argued that classical theory was not applicable to many modern management situations. Barnard contended that the executive leadership of an organization has the responsibility of contributing a sense of morality to its members, rather than just directing processes. He also discussed incentives for employees that included material, personal, and environmental motivating factors, alluding to the power of persuasion as a leadership style for enhancing workforce cooperation.

Selznick (1948), a sociologist, viewed organizational functionality from the standpoints of economics and social structure. He coined the term *co-optation* to describe the process that brings together the goals and aspirations of workers and management. Selznick's focus on relationships between managers and employees formed a new line of organizational thought that was further developed in postmodern times.

*Late modern and postmodern organization theory – including the human element.*

The theory of the relationships between organizations and their workers began to evolve in the late 1950s, resulting in the idea that the human component should be viewed as a valuable organizational resource. After World War II, human resources and their impact on organizational behavior became the subject of several observational studies on organizational effectiveness. A famous research process during that time was the Western Electric Hawthorne plant near Chicago (Roethlisberger, 1941). Here, observational experiments were conducted to investigate the influence of environmental factors on

productivity. Mixed results raised the observation that human situations are complex and not fully predictable with respect to productivity. Researchers found that the complexity of human output in the workplace could increase or decrease due to environmental changes, individual attitudes, personal history, social situations, or workplace culture.

Other theories related to organizational dynamics continued to evolve in the late twentieth century that focused on the influence of power, economics, and external influences on an organization. Organizational economics surfaced in the late 1930s when Ronald H. Coase (as cited in Reed, 2002) argued that the field of economics could not rely on price theory or structure to explain the characteristics of an organization. Rather, organizational economics needed to focus on the enticement of managers and their subordinates to function in the best interests of their organization's leaders or owners. DiPalma (2004) pointed out that the impact of power and politics on the establishment of organizational goals through coalitions could be used to meet objectives through continual bargaining and collaboration.

Morgan (1998) contributed to the evolution of organization theory by visualizing the organization as operating under a complex mix of theories to explain the roles of structure, environment, politics, and power. Perrow (1986) outlined several concepts relative to an entity's structure and functioning because of the influence of external and internal environments, economics, and power. He conceded that no single theory speaks to the complexity of human organizations, just as no single leadership dimension or team attribute can singly explain the success level of an organizational entity. Perrow instead alluded to the idea that a system of theories offers a more comprehensive explanation to the concept of organizational leadership, process, and culture.



*Postmodern organization theory – organizations as systems.* The birth of systems thinking originated from early chaos theory, as described by Poincare, a mathematician who demonstrated that chaos has a self-organizing aspect that can derive natural clarity and self-organization from the chaos of nature (Capra, 1996). Dolan, Garcia, and Auerbach (2003) contended that the self-organizing aspect of chaos benefits organizations by promoting creativity in and between organizations and between participants and their leaders. Under chaotic conditions, leaders and followers are not bound by structured roles. Instead, they can develop a capacity for dealing with unique and unplanned chaotic events without a leader’s guidance enhancing their potential to contribute creatively to the organization. These researchers contended that a shared set of values among colleagues could act as a catalyst for self-organization and encourage the formation of a culture that favored autonomy, responsibility, independence, pro-action, innovation, and creativity. Each of these characteristics can be important to dealing with “short term chaos [being] mitigated by an overall long-term sense of direction” (p. 23).

In General Systems Theory, Bertalanffy, a biologist, portrayed nature as a system operating with a nest of complex subsystems (Checkland, 1993). Eventually, organizational theorists began to correlate the concept of systems to organizational and management science. In 1961, Norbert Wiener linked the idea of organizational systems under the term cybernetics, to describe the phenomenon of open-ended organizational systems functioning under multidisciplinary, computer-based, and sociological forces (Capra, 1996). His work combined the idea of systems thinking and cybernetics with the organizational concepts of communication and control. These interact through feedback, a transmission of performance information within an organizational structure (Checkland,

1993). Katz and Kahn, as cited by Checkland, defined open organizational systems in terms of an energy exchange between people and their output, which may translate back into an organization as energy.

Checkland (1993) also realized that organizations are very much like living systems, with parts that network or interact to facilitate biological survival, a concept that can be likened to the achievement of human goals through the linking of systems within an organizational construct. Checkland developed the concept of CATWOE for describing human organizational systems. CATWOE is based on the idea that an organizational system generally functions in conjunction with six elements. The first element involves the relationship between an organization and its beneficiaries or customers (C). Operating within an organization will be actors (A) who carry out the main system activities. These components combine to convert or transform (T) system inputs (such as politics, funding, and customer needs) into outputs. The general outlook of an organization or its *Weltanschauung* (W) acts as a cultural lens to bring meaning to the six CATWOE elements within an organization. The fifth element is the influence of ownership (O), or executive level management steers the system in the direction of its goals or intentions. Finally, the environmental (E) influence on the system, which can provide opportunities or constraints on an organization's ability to function or transform inputs to outputs.

All CATWOE system components have relevance to leadership and teamship functions of collaboration. Both leaders and followers must work toward properly integrating the six CATWOE mechanisms. Senge (1994) added that a leader's adoption of a systems approach could lead to the development of a culture within which an

understanding exists that relationships, rather than simple cause and effect logic, can foster the use of a group's talents, culture, ideas, and passion for its assigned mission. The systems concept requires that leaders understand their own culture, values, and priorities as well as those of other organizations involved in collaborative efforts (Kiltz, Danzig, & Szecsy, 2004). In the systems approach, leaders are viewed as agents of change who must be able to eliminate barriers between systems, organizations, disciplines, and complex communities (Nissen, Merrigan, & Kraft, 2005).

#### *Organization Theory and its Relevance to Collaboration*

Each school of organization thought has contributed to the understanding of how humans bond together or collaborate to accomplish common goals. The classical school contributed the concepts of division or specialization of labor and scientific management. Collaborative processes often have representative agencies or individual participants that specialize in natural resources management. For example, the U.S. Fish and Wildlife Service specializes in the conservation and protection of plants, fish, wildlife, and their habitats (U.S. Fish and Wildlife Service, 2005), the Environmental Protection Agency specializes in protecting human health and the environment (Environmental Protection Agency, 2006c), and the Bureau of Reclamation focuses on the protection, management, and development of water and related resources (Bureau of Reclamation, 2006). Various professions within these organizations contribute to the collaboration process such as engineering, biology, economics, and sociology.

Through its empirical research, the neoclassical school helped lay the foundation for understanding how environment and culture can affect worker productivity. The neoclassical school also introduced the importance of the management-worker interface,

especially in the late modern era of high tech communications and processes. These elements of organization theory have important implications for collaborations between leaders and participants in within collaborative organizations.

Indeed, collaboration can also be viewed by the postmodern concept of a system. Collaboration is a system of organizations that have bonded together to achieve a desired outcome. Agranoff (2006) described collaborations as networks of organizations that can be considered real-world entities in themselves. Liang (2004) summarized that today's collaborative organization represents a form of collective intelligence as represented by his 3C-OK concept, which integrates the idea of collective intelligence, connectivity between groups and culture (3C), organizational learning, and knowledge management (OK). The 3C-OK framework illustrates the complex interaction between human beings and organizational learning.

Collaborative problem solving can also be viewed as a systemic process. For example, in recent years, collaborations have begun to use computer models and decision support software to evaluate issues. Walsh and Pawlowski (2003-2004) articulated this trend through their position that computer models can assist collaborative teams in visualizing and synthesizing learning across various disciplines, including those that deal with natural resource problems. Examples of these systematic approaches include the Integration Conflict Resolution System devised by Li, Zhou, and Ruan (2002) for collaborative design projects and the consensus module of the Watershed Assessment Risk Management Framework (WARMF) program, used by stakeholders as a roadmap for integrated water basin management (Environmental Protection Agency, 2006d). The Human Environmental Regional Observatory (HERO) project, for example, has been a

subject of research in collaborative resources management. HERO is an Internet based tool based on three critical roles of infrastructure: developing networks, using collaborative (software) tools, and engaging such individuals as environmental scientists and decision-makers (Pike, Yarnal, MacEachren, Gahegan, & Yu, 2005). Each tool brings a more systematic form of evaluation, and consensus making to collaborative organizations.

### The Link between Organizational Leadership and Culture

The link between organizational leadership and culture is a central theme of the current research effort. The research question posed by this study focused on defining the relationship between several elements of leader behavioral style and the cultural character of team-based organizations. Therefore, a review of the literature relevant to the link between organizational leadership and culture is appropriate. The next several sections present a discussion of the literature that describes this link and its relevance of the leadership-organization relationship to collaboration.

#### *Leadership and its Association with Collaborative Organizations*

According to Lussier and Achua (2004), a team “is a unit of two or more people with complementary skills who are committed to a common purpose and set of performance roles and to common expectations, for which they hold themselves accountable” (p. 261). Collaboration within the water resources field can be limited to a single team or comprise several teams with special functions that interface to meet the mutual goal of the entire collaborative team. Leadership in these teams, even if they are self-managed, is often provided by an individual responsible for an outcome (Lussier & Achua, 2004). These leaders influence group effectiveness through their actions.

According to Lussier and Achua, a team leader can effectively achieve goals by appropriately using recognition and rewards, building on team strengths, developing trust, dealing with change, empowering team members, motivating actions, encouraging team decisions, and challenging teams. Marrone (2005) provided an example of the importance of the leader in that in the banking industry, leaders may represent the greatest influence on a team's outcome success.

Team structure and size are also important to a leader's effectiveness. Lussier and Achua (2004) indicated that teams of under 12 people often are more effective than large groups and that large collaborative or multiple teams could constrain a leader's effectiveness. Lussier and Achua listed three types of teams that could each be a part of a collaborative organization: (a) functional, (b) cross-functional, and (c) self-managed.

A functional team consists of a group of people who belong to the same functional department or discipline. Examples of these teams in collaborative organizations are legal or engineering teams. Cross-functional teams consist of members from different functional specialties who together perform a given task. Often such teams are present in collaborations requiring analysis of complex resources issues that entail many facets, such as soil, biology, wildlife, and river operations.

The self-managed team is relatively autonomous and whose members often rotate leadership or take on the responsibility of a task for the collaborative effort. Often, functional or cross-functional teams operate in an autonomous fashion to perform their technical analysis with only occasional need for direction from a leader. When these teams are required to interface with other groups however, the leader must often step in to coordinate the effort to provide adequate and quality resources, rewards, recognition, and

a supportive climate and culture, and provide a balance between flexibility and synergy with structure (Lussier & Achua, 2004). Strong leadership behavioral skills, blended with trust among partners, clear roles, commitment, clear communication, and sufficient resources all coalesce to enhance collaborative effectiveness (Haire & Dodson-Pennington, 2002).

#### *Leadership Behavior and its Association with Collaborative Team Culture*

Lussier and Achua (2004) stated that leaders are important to team or organizational culture because of their role in matching team members with the right assignments, balancing autonomy with direction, providing necessary resources, motivating, and encouraging creativity. Leaders shape the environment of a group and are instrumental in creating and maintaining a culture that encourages contributions from individual team members, empathy for the other's view, and a sense of wholeness. Collaborative leaders must understand that their behavior will affect the followers in a group (Looman, 2003).

Trice and Beyer (1993) articulated the strong relationship between leadership and culture: "Since the presence of leadership is usually known from its consequences, one way to approach the analysis of cultural leadership in organizations is to identify a set of cultural consequences that occur repeatedly in descriptions and analyses of organizations" (p. 262). They defined the impact leaders on creating, influence, and transforming an organization's culture or just maintaining a cultural status quo.

#### The Natural and Water Resources Collaborative Process

The natural resources field in recent decades has become more dependent on a collaborative (Walker & Hurley, 2004) and multi-disciplinary styled approach to making

decisions, developing policy, and solving technical dilemmas. Low and Randhir (2005) observed that collaboration in natural and water resources have been on the rise since the early 1990s. Leach and Sabatier (2005) indicated that collaborative partnerships are increasingly more common especially in the natural resource and environmental policymaking arenas. Margerum and Whitall (2004) added that collaboration on water resources issues in the United States are increasingly being promoted at both the state and federal levels. Low and Randhir reported that 64% of all the collaborative groups dealing with natural resource issues were formed since 1991.

The collaborative approach is becoming more common at all levels of government and increasingly involves the public. Innes and Booher (2004) alluded to the idea that collaboration in environmental science has become viewed as a positive step in changing the role of the public from that of bystander to active participant. Additionally, non-technical stakeholders have increased their influence in the collaborative process (Beierle, 2004) and advance governance through providing multiple points of view and values (Fung, 2006).

Collaboration, as a form of decentralized, democratic management in natural resources has become the rule (Sanwal, 2004). In the United States, pro-environment citizens have distanced themselves from command-and-control approaches favoring more inclusive approaches (Van Putten, 2005). In other countries such as India, collaboration has become the most popular venue for dealing with one of its scarcest resources; water (Baviskar, 2004).

Through advancements in technology, natural resource management has become increasingly complex in recent years. Despite these advancements, the knowledge that



has been created and catalogued is still only weakly integrated due to a complex array of legal and cultural barriers (Moritz, 2004). As a result, awareness of the importance of collaboration among public, private, scientific, and a nonprofit stakeholders has increased (Bouwen & Taillieu, 2004). Leach (2000) added that public policymaking and implementation in the United States is also increasingly using a process of consensus building through collaboration that involves various levels of government and stakeholders. Clegg, Pitsis, Rura-Polley, and Marosszeky (2002) coined this process *governmentality* and emphasized its importance as an ingredient of collaboration.

Hafer (2001) stated that joint efforts on a large scale are becoming increasingly popular for organizations to join forces for problem solving or decision-making. Collaboration in the natural resources field has evolved toward a shared form of ownership and stewardship of society's larger problems such as environmental management (Bryan, 2004). Videira, Antunes, Santos, and Gamito (2003) observed that such large problems are most efficiently resolved through integrated and multi-disciplinary approaches due to the increasing complexity of environmental problems. Koontz (2005) observed that the environmental side of natural resources policy is increasingly dependent on joint stakeholder collaboration because of its effectiveness in building trust and credibility among stakeholders (Bollman, 2004).

Before the environmental movement of the 1960s, water management focused on a bureaucratic form of engineering and management involving large public works organizations, such as the Bureau of Reclamation, the Tennessee Valley Authority, and the U.S. Army Corps of Engineers. During this period, water managers did not focus on environmental and quality issues. With the advent of postmodern legislation such as the

Clean Water Act (CWA) and the National Environmental Policy Act (NEPA) in the late 1960s and early 1970s, a change occurred in the natural resources paradigm (Alm, 1988). Water management organizations now had to relate their technological systems to other social and environmental systems by interfacing with other organizations with appropriate expertise or goals. Natural resources managers were forced to take a more multidisciplinary approach. Hence, collaborative planning came into vogue, as exemplified by a recent collaborative effort between the U.S. Geological Survey and the Massachusetts Institute of Technology (Massachusetts Institute of Technology & U.S. Geological Survey, 2005) that examines how to make the increased collaboration among natural resources entities more cost effective and successful.

In recent years, several forms of collaboration have emerged to aid in joint resources management. Purnomo, Mendoza, and Prabhu (2004), for example, proposed planning tools that fall into two general categories: hard and soft systems approaches. The hard systems approach, defined by Clayton and Radcliffe (1996), was founded on the basic acceptance of a rigidly defined objective and problem specification. Checkland's (1989) soft systems methodology, devised as a learning system for complex human-dominated systems, was intended as a tool to understand the system or problem rather than just attempting to solve it, as was advocated in the hard systems view. In addition to the basic soft systems approach, Chambers and Guiji (1995) developed another soft-styled system, the participatory action research (PAR) model. PAR is a process through which members of a community identify the problem, collect and analyze data, and act upon the problem to find a suitable solution. PAR advocated a participatory approach

where stakeholders actively cooperate in all planning phases and decision-making processes.

Walck (2004) linked the concept of integrating leaders and their organizations or teams to the environment in which they operate as an important systems approach to success. Walck used the example of land management and sustainability to discuss how system integration links humans, their organizations, and their environment to form a clear vision to understand how the parts relate to the whole. Walck compared two distinct paradigms to illustrate this concept, economics and ecology. The economic paradigm discusses money, economic growth, and the technology on which organization theory tends to focus. In contrast, the ecological paradigm concentrates on ecological principles and resource limits of the natural environment. Walck asked, “what do we do when faced with two divergent paradigms” (p. 172) such as ecology and economics? In this situation, effective leaders, participants, and a diverse set of organizations come into play, making systems thinking instrumental in decreasing the gap between divergent paradigms and increasing the use of creative long-term thinking. The collaborative leader must engage and integrate these varied paradigms into a multi-paradigm system involving the idea of win-win, or “green and competitive” (p. 175) systems thinking to achieve a balanced outcome.

#### *Water Resources Collaborative Issues*

Thompson and Reynolds (2002) stated that water as a finite resource; its management requires new approaches such as the collaborative process. Because natural watershed boundaries often conflict with human-created borders and institutional arrangements (Blomquist & Schlager, 2005), a diverse set of interests is commonly

brought to the table. Other issues such as water quality and environmental impacts also bring a varied array of stakeholders to address water issues. For purposes of this study, water issues were portrayed as either (a) water supply related issues, including the distribution and ownership of water; (b) water quality and ecosystem related issues; or (c) other issues.

*Water supply, distribution, and ownership issues.* Three hundred million people in the world presently live in areas of serious to severe water shortages. In the next quarter century, that number will increase to approximately three billion people (Loranger, 2005), while the amount of available fresh water will remain constant. The distribution of water on the planet is inconsistent with the distribution of entities requiring its use.

Water violates human boundaries by flowing from public to community-managed to private property (Meinzen-Dick & Bruns, 2003) or across political borders. In addition, rules that govern water entitlements vary by season variations and by region (Sherk, 2003). Consequently, ad hoc or formally established collaborative processes are usually needed to deal with allocation problems. In turn, the leader of these proceedings must understand how to choreograph, judge, and manage the process as needed (Adair & Brett, 2005).

Water rights and water legal systems are also fundamental to supply issues. In most countries, water rights are not well defined (Landry & Phoenix, 2003). To complicate matters, trans-basin diversions and situations where water flows from one sovereign entity such as an Indian Reservation (Smith, 2003) to another, can further complicate the issue of legal water ownership. Thus, water management inevitably

requires what Ostrom, Stern, and Dietz (2003) called an adaptive management style which often can involve a multi-organization collaboration.

*Water quality and ecosystem issues.* Another challenge in the 21st century is water quality. If quality is compromised, water supply becomes accordingly limited. Water quality has political implications when it crosses a state or international border or affects downstream users. In the case of inter-basin transport of water, biota transfer can be a concern, such as the transfer of the zebra mussel throughout the Great Lakes (Drake & Bossenbroek, 2004).

*Other water issues.* Besides ownership, supply, and quality issues, many countries face other concerns over the next 100 years. For example, dams and conveyance systems are aging requiring expensive rehabilitation (Johnson & Graber, 2002) such as removal or costly maintenance. In addition, the issues of uncertainty with regard to climate change, erosion, soil contamination, wetland management, flooding, hydropower, navigation, and terrorism are facing society. These issues require increased awareness and public involvement (Loranger, 2005). Since water is a basic resource for all living species, water management will continue to be complex and require expertise from a variety of disciplines and organizations.

#### Measuring Collaborative Leadership and Culture

Effective collaboration involves leaders, members, or participants. The literature provides support for measuring the dimensions of collaborative leadership behavior as described by Larson and LaFasto (1991) and LaFasto and Larson (2001) and provides impetus for the use of Cameron and Quinn's (1999) instrument for measuring the cultural type of collaborative organizations. The following discussion is arranged into three

sections, measuring leadership behavioral style dimensions, measuring collaborative team culture, and understanding the relationship between these collaborative components.

*Measuring Collaborative Leadership Behavior*

LaFasto and Larson (2001) lamented that despite the difficulty in identifying any goal that humans collectively cannot achieve, “we seem to lack the essential ability to work together effectively to solve critical problems” (p. 13). They cited Donald Straus, former president of the American Arbitration Association, as contending that environmental issues such as acid rain - that pollutes lakes, damages fish habitat, and harms vegetation - have been difficult for society to resolve collectively. Larson and LaFasto also contended that the complexities of postmodern society demand coordination both within and between organizations. They stated,

whatever the problems are that occupy our attention, it is probable that the more significant they are to our collective well-being or to the success of our institutions and enterprises, the more complex they are likely to be. Solving these complex problems demands the integration of many individuals. (p. 17)

Larson and LaFasto (1991) and LaFasto and Larson (2001) examined collaborative and team leadership based on six behavioral style dimensions: (a) focusing on the goal, (b) ensuring a collaborative climate, (c) building confidence in the group, (d) demonstrating sufficient technical know-how, (e) setting priorities, and (f) managing performance. They examined several thousand teams to evaluate these criteria from both the perspective of the leader and those led. The six dimensions described below were a key focus in the current investigation for measuring collaborative leadership effectiveness. Each dimension represents one of six predictor study variables.

*Dimension 1: Focusing on the goal.* Larson and LaFasto (1991) stated that a clear goal is vital to team success. Keeping a team focused on its objectives, especially within a dynamic environment, is important to achieving those objectives. The most frequent explanation for team failure was that issues had not been prioritized in relation to the team's original objective.

*Dimension 2: Ensuring a collaborative climate.* A collaborative climate can help define the team-working ability of the group. Collaborative climate consists of four elements: (a) honesty or trust, (b) openness or willingness to share, (c) consistency or predictability in behavior and response, and (d) respect for each team and the organization they represent. These allow a team to remain problem-focused, communicate effectively, optimize the quality of the outcome, and compensate for each other's differences in skills and knowledge (LaFasto & Larson, 2001).

*Dimension 3: Building confidence in the group.* LaFasto and Larson (2001) contended that leaders need the ability to instill confidence in individual team members to inspire faith in their abilities, remain focused on opportunities, and appreciate their accomplishments as a team. Building confidence entails the leader to inspire the team through high expectations without being overbearing and possess a passion for meeting team goals. LaFasto and Larson also suggested that beyond personal passion and charisma, the leader must educate the team by making members aware of key issues and facts. "Clarity builds confidence. Confidence drives commitment" (p. 124). Leaders' behavior must inspire confidence and a high level of trust. Leaders must demonstrate their faith in all participants' abilities to handle their assigned responsibilities, be creative, and contribute to group decisions. They must also be fair and impartial to team members

and stakeholders (Chase, Decker, & Lauber, 2004), creating a sense of acceptance between the leader and the team, which in turn builds group confidence. Finally, leaders should let the team know that they appreciate the effort and time devoted to the collaboration.

*Dimension 4: Demonstrating sufficient technical know-how.* LaFasto and Larson (2001) stated that leaders should bring ample skill and experience to the table, have knowledge of the business or topic of collaboration, and clearly demonstrate a depth and breadth of knowledge. Since collaboration is usually multidisciplinary, a leader most likely will not possess adequate knowledge in each profession represented. In water resources collaborations, for example, a leader may have a biological background but not understand all the engineering aspects. In these cases, a leader should be able to ask for assistance and remain open to learning as much as possible about the different aspects of the problem at hand (LaFasto & Larson, 2001). Collaborative leaders are also more effective when their knowledge encompasses social and political structures related to boundary issues and organizations that can contribute to creating new or enhanced opportunities for collaborative action (Feldman et al., 2006). Such a broad knowledge base is an important element of collaboration because the leader may be able to alleviate a concern posed by Leach (2006) regarding inadequate representation by all stakeholders that could contribute to a team's ability to address a water resources issue.

*Dimension 5: Setting priorities.* LaFasto and Larson's (2001) research indicated that not setting priorities is a frequent complaint by team members. Consequently, members can lose their commitment to critical issues and may lose their focus on the



intended direction of the collaboration. Focus on an inappropriate priority wastes time and effort, and causes members to develop a disjointed view of the strategic goals.

*Dimension 6: Managing performance.* LaFasto and Larson (2001) contended that collaborative leaders should make performance expectations clear to the group. To accomplish this, LaFasto and Larson suggested that leaders consider several elements of performance. The leader should be expected to (a) help each participant translate the team goal into meaningful activities, (b) hold all participants accountable for what they achieve and how they achieve it, (c) manage the participants and other resources available to the team, and (d) set clear expectations while following up on participant personal development needs associated with the effort.

#### *Measuring Collaborative Team Culture*

Another key to comprehending the process and effectiveness of collaboration is to gain an understanding of a collaborative organization's cultural type. An organization or team can have a single cohesive culture or several sub-cultures. The structure can be basic to the form of communication (face-to-face or virtual) or the division of functions or expertise. Culture can also evolve based on the use of local or distance-based via electronic forms of communication. Members in distance-based teams may never meet face-to-face, which creates special cultural challenges for leaders (Parker, 2003).

Larson and LaFasto (1991) identified three basic categories of teams: (a) problem resolution, (b) creative, and (c) tactical. Problem resolution teams, such as technical support teams, solve specific or on-going problems. They require a high level of trust to allow team members to focus on the issues at hand. Creative teams are designed to *create* or develop something. These can be in the form of technical, legal, or policy teams that

support a main decision group tasked with the creation of computational tools, such as simulation models or legal and policy strategies and documentation.

Creative teams require autonomy to allow focus on creative possibilities and alternatives. The third team type, tactical teams, set up as implementation or planning entities, are charged with executing a “well defined plan” (Larson & LaFasto, 1991, p. 52). Tactical teams in natural resource situations could consist of NEPA experts charged with carrying out the legal requirements of the NEPA process, such as planning and executing public involvement meetings, alternative selection processes, and final documentation in the form of an Environmental Impact Statement. These teams require clarity and unambiguous role definitions to be successful. Clarity permits a high level of responsiveness among members for carrying out the plan. Each of the above team types can play a part in the collaborative process and can occasionally coalesce into a multi-team collaborative structure for addressing water management problems.

Cameron and Quinn’s (1999) Organizational Culture Assessment Instrument is applicable to determining the team’s cultural type by providing a data on team process and effectiveness. The instrument was used to measure various elements of a collaborative team’s culture through data collected with regard to four defined cultural types: (a) clan, (b) hierarchy, (c) adhocracy, and (d) market. Each cultural type, which represents a predictor variable of this study, is described below.

*Type 1: Clan culture.* The clan cultural type has similarities to family-type organizations exhibiting shared values and goals, participation, individuality, and a sense of cohesion. Cameron and Quinn (1999) used People’s Express Airlines as an example of an American clan culture. The family-styled character of this corporation was

demonstrated in that the organization had a limited hierarchy, encouraged participatory governing and self-management, and was employee owned. The clan culture, as measured by the OCAI, is considered a friendly workplace in which people share themselves with others and the organization. Leaders are viewed as mentors and parenting figures. The clan organization has an air of strong loyalty and commitment and places high value on teamwork, participation, and consensus.

*Type 2: Adhocracy culture.* Adhocracy culture, based on the root word *ad hoc* signifying a temporary, specialized, and highly dynamic unit, fosters flexibility and creativity, especially under uncertain conditions. Adhocracy culture exhibits no centralized form of power arrangements or authority relationships. Rather, power is considered to flow from person to person or team to team within the organization. Individuality, risk-taking, and forward thinking are valued attributes of organizational members. As jobs are completed, task teams usually dissolve and form into other groups to meet additional needs of the organization (Cameron & Quinn, 1999). The adhocracy culture is characterized by creativity and an entrepreneurial style of dynamics. Leadership and the organization, if innovative and risk-oriented, can be bonded by a commitment to experimentation and encouraging innovation. Thus, an adhocracy can readily meet new and unexpected challenges.

*Type 3: Hierarchy culture.* An excellent example of hierarchy culture is the bureaucratic culture envisioned by Weber in the 1800s. According to Cameron and Quinn (1999), hierarchy culture fits Weber's definition of bureaucracy because it represents a relatively stable, controlled environment with a hierarchy of authority. Hierarchy culture is formed and operated based on a defined set of rules or regulations.

In a hierarchy culture, organizational members are assigned based on skill or specialty. They are accountable for their own assigned duties and often work or relate to others in a non-personal format. Organizations operating under a hierarchical culture are based on efficiency, a set form of communication and flow of power, and a reliable, predictable output. Leaders of these organizations are expected to be good coordinators and organizers and organizational members are expected to follow the rules (Cameron & Quinn, 1999).

*Type 4: Market culture.* Market culture according to Cameron and Quinn (1999) is an evolutionary form of the hierarchy culture. Popular in the 1960s, market culture describes a type of organization that functions similarly to a marketplace based on transactional arrangements and costs. Transactions derive from the idea that external constituencies such as suppliers, customers, and contractors have a form of control over the organization's culture. Market culture focuses on operating through the economic influence of the market. Competitiveness and productivity drive the market cultural type.

Organizations that operate in competitive markets such as electronics can be market cultures. Survival of the fittest often means that these cultures operate in a hostile work environment. Cameron and Quinn's (1999) design of the OCAI attests that a market culture usually is results-oriented and operates in a demanding environment. Winning is the cohesive glue that bonds the organization together.

These four cultural types and their strength were measured through six OCAI elements: (a) team dominant characteristics, (b) team leadership, (c) management of employees or team members, (d) organizational glue, (e) strategic emphasis, and (f) criteria for success (Cameron & Quinn, 1999). Each type contributes to the overall

cultural character of each team surveyed in this study. A description of each element is provided below.

*Element 1: Team Dominant Characteristics.* The team dominant characteristics element categorizes each team with regard to its character. For example, a team may be family oriented, dynamic, and entrepreneurial, results oriented and competitive, or controlling and highly structured. These categories relate to the strength of the clan, adhocracy, market, or hierarchy cultural types (Cameron & Quinn, 1999), respectively.

*Element 2: Team Leadership.* As a measurement component, the team leadership element categorizes each team's leadership character. For example, a team leader may be nurturing, innovative which relate to the clan and adhocracy cultural types. A team leader may also be aggressive or efficient which can be linked to the hierarchy and market cultural types (Cameron & Quinn, 1999).

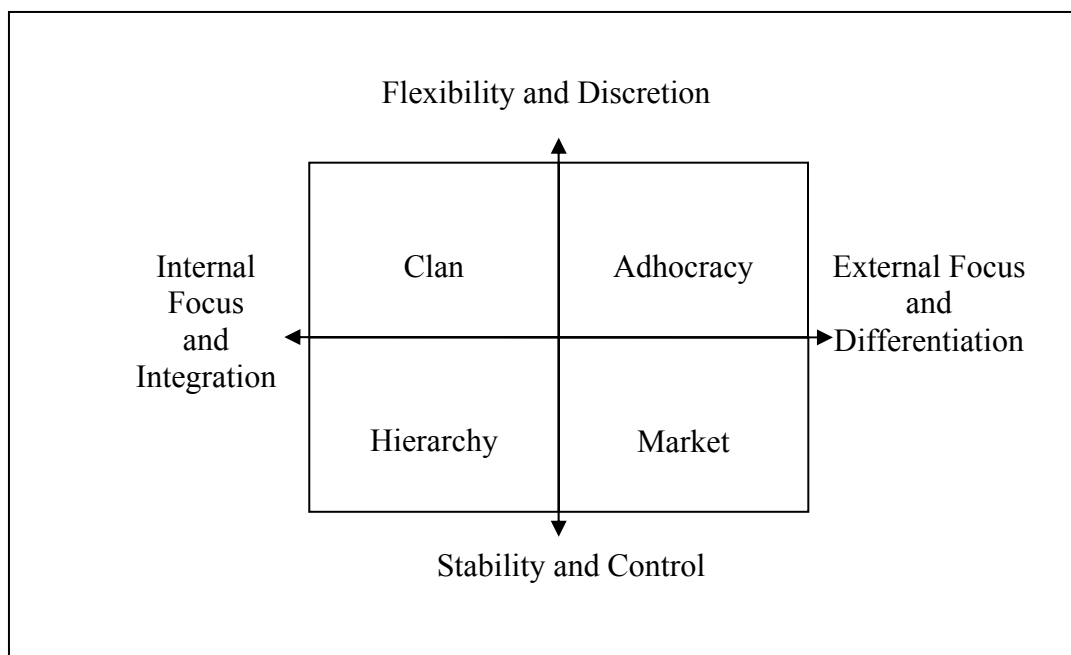
*Element 3: Management of Team Members.* As an element, the management of team members metric categorizes each team with regard to its management of team members. As an example, a team may manage by consensus, innovative freedom, competitiveness, or stability and predictability. Each of these management categories has relevance with one the four cultural types defined by Cameron & Quinn (1999).

*Element 4: Organizational Glue.* Organizational glue categorizes each team with regard to what binds its members. Examples of these binding mechanisms include loyalty or trust, commitment to innovation, achievement and goals, or formal rules or policies. Each has relevance to one of the four cultural types defined by Cameron and Quinn (1999).

*Element 5: Strategic Emphasis.* The strategic emphasis element is used to categorize each team with regard to its strategic goals. Examples of strategic emphasis elements include a team's emphasis on human development, new challenges, competitive achievement, or efficiency of operations. Each of these strategic forms is definitive to a team's cultural character (Cameron & Quinn, 1999).

*Element 6: Criteria for Success.* The element of criteria for success categorizes each team in terms of its view of success. Examples of a team's defining criteria for success include how it views its accomplishments with team member development, its ability to innovate a new product, its ability to overcome competition, or how efficient it is with time and budget. Each of these criteria defines how a team views success, which ultimately plays an important role in its cultural development (Cameron & Quinn, 1999).

Each cultural type can be arranged into four quadrants, by using the Cameron and Quinn (1999) Competing Values Framework. Each quadrant is distinguished by its most prominent characteristics, as illustrated in Figure 1. These quadrants display the variance of assumptions, orientations, and values that the OCAI uses to represent an organization's cultural fit and strength through its scoring mechanism. The scoring is described in detail in chapter 3.



*Figure 1.* The competing values framework. *Note.* From Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework (p. 32), by K. S. Cameron and R. E. Quinn, Reading MA: Addison-Wesley. Copyright 1999 by K. S. Cameron and R. E. Quinn. Reprinted with permission.

#### *Leader Behavior and Team Culture as Related Indicators of Team Effectiveness*

Literature cited earlier established a connection between the leader and the culture of an organization or team. Schein (1992) described leaders as vital to creating culture and stressed the importance of the leader-culture aspect of teamwork. The link between the leader-culture relationship and potential success of the group however, has not yet been presented in detail. The remainder of this section outlines the importance of the leader-culture relationship to potential team success and describes how this study could provide collaborative leaders with a better understanding of behavioral influences on collaborative effectiveness.

Schein (1992) stated that “once a leader has activated the group, it can determine whether its actions solve the problems of working effectively in its environment and create an internal system” (p. 226). Schein also stated that leaders influence the culture of the team by manipulating variables important to team productivity. These are to (a) instill reactional mechanisms to critical incidents and organizational crises; (b) instill an appropriate level of role modeling, teaching, and coaching mechanisms into the team process; (c) motivate through reward or status systems; and (d) influence team character and expertise through recruitment, selection, promotion, retirement, and dismissal. In turn, these influences can affect what Cameron and Quinn (1999) described as the leader’s focus to develop the appropriate and desired team cultural form in addressing the problem at hand.

Pennington’s (2001) study of leadership and its influence on organizational culture lends further support to the importance of the leader-team-culture relationship in collaborative teams. Regarding the importance of a leader’s influence on development of cultural processes and structures, Pennington cited Goldberg, who stated, “A culture based on a collaborative mind-set, as well as collaborative processes and structures was a requirement for organizational success” (p. 30). Pennington also cited Lok and Crawford, who noted the relationship between leader behavioral style and the members’ commitment in that a leader can be an important influence regarding team members’ dedication to the task. Regarding the relationship between leaders and the development of an appropriate culture for success, Pennington cited Den Hartog, Van Muijen, and Koopman, who stated that “different organizational cultures tend to be a product of a preference for different types of leaders” (p. 33).



Other researchers have indicated the importance of the relationship between leaders' influence and unit effectiveness as reflected through the group's culture. Hackney (2004), for example, in her study of leadership on U.S. Navy ships, likened culture to a covenant of assumptions, beliefs, and shared values in a military organization. Hackney's study emphasized that the naval officer, as a successful leader, instigates the development of a unique cultural relationship with subordinates.

DeChurch (2002) discussed another aspect to the leader's influence on the sub-culture that relates to the multi-disciplined arrangement of the collaborations selected for this study. DeChurch inquired about how multiple interconnected teams can work together in an effective manner. He concluded, "While the role of coordination with other teams can originate within the team, it is likely to be more effective when it originates from external leadership" (p. 4). In effect, the leader who is external to the sub-teams often must still direct the multiple team organization. Regarding this form of multi-team organization, DeChurch stated that since the teams are already involved in a task, they might be distracted from coordinating effectively with other teams necessitating that a leader external to their team provide these functions.

### Conclusion

The literature review presented in this chapter was designed to coincide with the study research question: To what extent were the six leadership styles and the four cultural types, as identified by LaFasto and Larson (1996) and Cameron and Quinn (1999) respectively, correlated for a sample of 38 water resources collaborative teams with diverse memberships? Literature cited on the subjects of leadership and organization theory provided background on the topics of collaborative leadership, team culture, their

relationship to each other, and their link with the potential of collaborative team success. Leaders are important catalysts in the development of a team's cultural type (Cameron & Quinn, 1999) and because of the behavioral style of the leader, can have an important impact on the team's success (LaFasto & Larson, 2001).

Chapter 2 provided an understanding of water resources issues used as a central focus of the collaborative teams sampled in this study. Persons involved in water resources are increasingly turning to collaboration to resolve complex issues (Massachusetts Institute of Technology & U.S. Geological Survey, 2005). While extensive research has been conducted in the areas of leadership, leader behavior, organizations, teams and their cultural development, little information exists regarding the specific relationship of a leader's behavioral style with the culture of collaborative teams with diverse memberships, in the field of water management.

#### Summary

The body of knowledge concerning leadership and organization theory offers insight to the understanding of leadership and organizations. This information provides a foundation for understanding how leaders and their collaborative team members interact to attain joint goals. Two key components of this interaction involve the importance of the relationship between leadership behavior (LaFasto & Larson, 2001) and team culture (Cameron & Quinn, 1999).

Chapter 2 summarized the historical theory and research on collaborative or multi-organizational leadership and culture. The discussion was linked to the study's sample of water resources collaborative teams. A background of the natural water resources management field was presented as well as a discussion of its tendency to use

collaboration for addressing a variety of issues (Hafer, 2001; Massachusetts Institute of Technology & U.S. Geological Survey, 2005). Finally, a discussion was presented regarding how the researcher addressed the measurement of collaborative leader behavioral style and collaborative cultural type and how these aspects of collaboration are related. This chapter provided a foundation for chapter 3, which presents details of the study research design and its appropriateness to address the study research question. The chapter also discusses the study population, sampling and data collection frame, study geographic location, instrumentation, data collection process, and method of analysis.

### CHAPTER 3: METHOD

The purpose of this non-experimental quantitative, correlation research study was to determine the relationship between six dimensions of collaborative leader behavioral style and the strength of four cultural types for a sample of 38 water resources collaborative teams, with diverse memberships, operating in the United States. The quantitative study method was determined to be an appropriate approach because validated survey instruments were required to collect a set of numerical data for determining the relationship between predictor and criterion variables in order to address the study research question. Because neither observational data nor a broad qualitative elaboration of variables were attempted, qualitative or mixed methods were not used (Creswell, 2003; Simon & Francis, 2001).

The study used two validated survey instruments to measure predictor and criterion variables and a demographic questionnaire to determine selected teams' fit with sampling inclusion criteria. Predictor variables consisted of each sample team's collective membership perceptions of their collaborative leader with regard to six dimensions of leader behavioral style (focusing on the goal, ensuring a collaborative climate, building confidence, demonstrating sufficient technical know-how, setting priorities, and managing performance). These variables were measured through the LaFasto and Larson Collaborative Team Leader Instrument (LaFasto & Larson, 1996) presented in Appendix A.

Criterion variables consisted of each sample team's collective member perceptions of the cultural type of their collaborative team (clan, hierarchy, adhocracy, and market). Cultural type was measured through the Cameron and Quinn OCAI

(Cameron & Quinn, 1999), presented in Appendix B. Demographic data, which were used to determine if the collaborative team and its respondents represent a diverse membership included (a) sector represented (public, private, and nonprofit), (b) respondent professional expertise, and (c) representative organizational expertise.

Survey data were analyzed by a correlation approach, a common technique for determining the relationship between numerically based, non-manipulated predictor and criterion variable data (Leedy & Ormrod, 2001; Simon & Francis, 2001). Chapter 3 presents information on the study research design and method as well as their appropriateness for evaluating the research question. A discussion of the population selection, sampling and data collection frame, study geographic location, instrumentation, data collection process, and method of analysis is also presented.

#### Research Method and Design

This study employed a quantitative research methodology with a correlation design. The study used survey data to measure collaborative leader behavioral style and collaborative team culture in order to determine the relationship between the two. Data from the sample population was not analyzed with regard to individual respondents due to the study's scope of measuring the relationship between leader behavioral style and culture on a team basis. Because several research design options were available, an understanding of their differences with the selected study method and design is presented.

#### *Study Method Comparison*

A selected research method must be appropriate to study needs, data available, and objectives. Creswell (2003) and Simon and Francis (2001) discussed three design types: quantitative, qualitative, and mixed. Each is described below.

*Quantitative studies.* Quantitative studies feature objectivity, are deductive, and are based on numerical data from which the researcher draws inferences (Simon & Francis, 2001). The numerical data is used as a basis of measurement of variables under study. The quantitative method was selected because numerical survey data were to be collected, analyzed, and used to measure and draw inferences about the relationship between behavioral style and team culture.

*Qualitative studies.* Simon and Francis (2001) described qualitative studies as subjective processes often used for the development of theory. They are frequently conducted in natural or organic settings, using observational techniques. Qualitative studies operate under the premise that reality is defined based on perception, which can fluctuate between people, with time, or with the circumstances of the study situation (Simon & Francis, 2001). The qualitative method was not appropriate to the study because survey data rather than observational techniques were used.

*Mixed methods.* In recent years, the combined use of quantitative and qualitative methods has emerged as a way to provide balance to research. Mixed methods allow for a robust interpretation of the research subject through crosschecking or triangulation of both quantitative and qualitative data (Creswell, 2003). Essentially, the scope of a mixed approach is broad enough to require both quantitative and qualitative research questions. To address these questions, mixed methods are often designed in two sequential phases. The goal of the first phase is to use quantitative data for determining the relationship between study variables. The second phase elaborates, through qualitative data, on the first (Creswell, 2003).

The study scope involved addressing a single, quantitative research question regarding the determination of the relationship between the leadership behavioral style dimensions (predictor variables) and collaborative team cultural type (criterion variables). No broader qualitative elaboration of study variables was intended. For example, there was no qualitative examination of team member opinions regarding how their team culture relates to the cultural type of the water resources professional field or what their opinion of quality leadership behavior entails. Because the study scope was limited to determining relationship between variables through quantitative survey data, the mixed method was not used.

#### *Study Design Comparison*

Simon and Francis (2001) and Leedy and Ormrod (2001) discussed several related research designs used to determine relationships between variables. These designs are correlation, descriptive, developmental, experimental, and quasi-experimental. Each is described below.

*Correlation.* The study used a correlation design. This design was appropriate because criterion and predictor variables were analyzed to determine the extent the variables vary together (Leedy & Ormrod, 2001; Simon & Francis, 2001) using correlation statistics. Correlation was also used to determine the strength of the relationship between each predictor and criterion variable.

*Descriptive.* The descriptive design is closely related to the correlation approach in that study variables are examined in their natural environment without researcher-imposed treatments. The descriptive design also entails the development of theory to identify problems or make judgments (Simon & Francis, 2001). This study was

exploratory in nature and was not intended for theory development. Therefore, the descriptive design was not appropriate.

*Causal comparative, experimental, and quasi-experimental.* Causal-comparative designs are primarily associated with determining cause and effect relationships between variables (Simon & Francis, 2001). The causal-comparative design did not apply to the study because causality between leader behavioral style and team cultural type was not implied or intended by the research question. Experimental and quasi-experimental designs also did not apply because they involve variable manipulation and control (Simon & Francis, 2001).

#### *Appropriateness of Selected Research Method and Design*

The study approach corresponded to the definition of quantitative research methodology and correlation research design. These designs were considered appropriate because validated survey instruments were used to collect quantitative numerical data that were appropriate for using correlation analytical methods for determining the strength of the relationship between predictor and criterion variables as specified in the research question. Study survey data were not manipulated or controlled to develop theory or imply causation; rather they were analyzed through correlation at the  $\alpha$  level of  $\leq 0.05$  for determining relationships between variables.

#### Population and Sampling

The study population consisted of the membership of collaborative team units addressing water resources issues in the United States. Individual members of these teams were surveyed and results were combined and averaged to represent a score for their respective team. Since the population size of water resources collaborative teams



was unknown, a large sample of at least 30 teams was surveyed. The sample size was based on the central limit theorem, which implies that means for sample sizes larger than 30 can be approximated reasonably well in terms of a normal distribution (Simon & Francis, 2001; Triola, 2001). 38 of 43 teams surveyed met the study's sample inclusion criteria. The data for these teams were used in the study analysis. Sampled collaborative teams were restricted to the criteria listed below.

1. Collaborations must focus on water resource-related issues occurring in the United States.
2. Team leaders must indicate that they have led their collaborative team long enough to have allowed team members to adequately answer survey questions in terms of their leadership behavioral style and the team culture that has developed under their term of leadership. Team leaders were asked if they had served long enough to develop a working relationship with their team members and the team collaborative process. Team leaders serving less than 6 months were not considered for the study unless they indicated that they had an intense enough level of contact to develop a working relationship with their team.
3. Each team's membership must have representation from at least two economic sectors or two of the professional or organizational expertise categories listed in the demographic questionnaire.

#### Informed Consent

The researcher obtained permission from each collaborative leader to survey the membership of his or her team. Once permission was obtained, each team member was provided with an informed consent form and asked to accept or decline the stipulations in

the consent form. The consent form used in the study is presented in Appendix E. Acceptance of the consent form and completion of the survey instruments and background questionnaire indicated that team member permission to be surveyed was obtained.

### Confidentiality

Ensuring team member's confidentiality was a primary concern. Team member consent authorizations and mail or email addresses were collected separately from, and not matched to, the survey responses. The only potential identifiers of a team member were from the demographic questionnaire. Team identities, or the names of the team members, were not used.

### Data Collection

Data were collected using the two validated surveys and the demographic questionnaire. The surveys and questionnaire were formatted for online and mail (postal) collection of team data. The process used for data collection was as follows:

1. Teams addressing water resources issues were screened. Collaboration teams that met study criteria were then identified.
2. Leaders of each prospective collaborative team were contacted to determine the team's fit with the study sample inclusion criteria. If a team qualified for participation in the study, the leader was informed of the timeframe of the data collection period and the process that would be used.
3. Qualifying team leaders were asked to provide email or mailing addresses of their active team members. Addresses were obtained so that the team member could be invited to take the online survey or be mailed a survey.

4. A Website was established to facilitate online data collection. The two validated instruments, background questionnaire, informed consent form, and instructions were set up using the Hosted Survey™ Webtool package. Email addresses of study participants were input to the Website software and user names and passwords for each survey participant were created to ensure confidentiality. If an email address was not provided, surveys were mailed to respondents. Mailed surveys contained the same information provided in the online version (instructions for completing the surveys, an informed consent form, the two validated surveys, and the background questionnaire). Self addressed stamped return envelopes were also provided to each mail respondent.
5. Respondents using the online survey were invited to take the survey by email. They were also provided a secure link and unique identification number. Each respondent was instructed to log on to the survey site and follow the instructions provided.
6. Each participant using the Website was given the opportunity to decline or accept the conditions of the consent agreement. If they accepted, they were informed that they were indicating their willingness to participate. Confidentiality was ensured through the secure site and unique identification number. Respondents using mailed surveys were provided with the same information as the online participants. They were informed that their completion and return of the survey indicated their willingness to volunteer in the study.
7. Delinquent participants or participants who only partially completed the survey were reminded to complete the survey at up to two-week intervals for a period of

up to four months. When a team response rate was low, an attempt was made to contact delinquent respondents by email, the postal service, or their team leader to request that they complete the surveys.

8. Upon completion of the survey period, responses were downloaded from the Hosted Survey™ Website or collected from mailed in surveys for tabulation.
9. Upon completion and final approval of the study, any identifying data related to the respondents was destroyed.

#### Instrumentation

Two validated survey instruments, the LaFasto and Larson Collaborative Team Leader Instrument (LaFasto & Larson, 1996) and the Cameron and Quinn (1999) OCAI were used to measure collaborative leader behavioral style and team cultural type. A questionnaire was used to collect demographic data on each team member. Permission to use the validated surveys was obtained by their developers.

The LaFasto and Larson Collaborative Team Leader Instrument (LaFasto & Larson, 1996) was selected because it specifically links to the behavioral style dimensions of collaborative leaders. Thus, the instrument qualified as an appropriate tool for measuring collaborative leader behavioral style for the study context. Other instruments such as the Leader Behavior Questionnaire (Sashkin, 1996) and the Profile of Aptitude for Leadership (Training House, 1991) also provide measurements of leader behavior and style; however, these were not specifically linked to the collaborative leader.

The LaFasto and Larson (1996) Collaborative Team Leader instrument uses a Likert-type scale to measure six dimensions of collaborative leader behavioral style.

These dimensions, which represent the study predictor variables, are (a) focus on the goal, (b) ensuring a collaborative climate, (c) building confidence, (d) demonstrating sufficient technical know-how, (e) setting priorities, and (f) managing performance. The instrument uses a Likert-type scale to rate how collaborative a team leader is with regard to each dimension. Each dimension is scored through several questions based on the following responses: true, more true than false, more false than true, false. Higher collaborative effectiveness is indicated by a true or more true than false response, while the low collaborative effectiveness is indicated by false, or more false than true. Responses can be coded from 1 (true) to 4 (false) and averaged for each dimension as exemplified by DeWald (2002). A score of 1 indicates a leader that is highly effective with regard to collaboration. A score of 4 indicates a low level of collaborative effectiveness.

The Cameron and Quinn (1999) OCAI was selected because of its designed intent for categorizing the organizational culture of teams (Pennington, 2001). Other instruments such as the Diagnosing Organizational Culture survey (Harrison & Stokes, 1993) and the Organizational and Team Culture Indicator (Pearson & Hammer, 2004) can also be used to evaluate the culture of an organization or team. These instruments provide an assessment of cultural components and cultural attitudes; however, they did not specifically measure or categorize the cultural type of teams as required by this study.

The Cameron and Quinn (1999) OCAI, was used to measure the predictor (cultural type) variables for each collaboration. The dominant team cultural type for each team was the highest scoring cultural type (clan, hierarchy, market, and adhocracy) as measured by the OCAI. The strength of each cultural type was measured by distributing a

100-point scale among the six OCAI elements: (a) team dominant characteristics, (b) team leadership, (c) management of employees or team members, (d) organizational glue, (e) strategic emphasis, and (f) criteria for success. In using the OCAI, respondents were requested to rate each element by distributing 100 points among four questions designed to score the strength of each cultural type. Scores for each cultural type were summed for the six elements are then averaged. Possible scores from 1 to 100 were used to rate the strength of each cultural type for the teams surveyed. The higher the score, the more dominant a culture was in a team's cultural character. Total scores for any one of the four cultural types could not exceed 100.

A set of background questions was used to determine if each team met the study's diversity criteria. Data gathered included the economic sectors, team member professional expertise, and organization expertise represented. If a team indicated that two or more sectors or areas of expertise were represented, the team met the study sample inclusion criteria.

### Validity and Reliability

Two forms of validity are important to the credibility of a research study: internal and external (Creswell, 2003). Creswell stated that internal validity involves the ability of the researcher to draw correct inferences from the collected data. Threats to internal validity include flaws in procedures, treatments, or influences on the experiences of the participants under study (Burns, 1997). Each threat may infer a causal relationship in a correlation analysis (Trochim, 2006), the method of analysis used in this study.

Reliability is also important to a research study's credibility. The reliability of a measurement instrument such as a survey indicates the consistency of the results yielded

by the instrument when the item being measured has not changed from each use of the instrument (Leedy & Ormrod, 2001).

This study's research design was dependent on the established internal and external validity and reliability controls of the study data collection and analysis process and its two primary instruments. Threats to internal validity regarding selection of respondents were minimized through strict adherence to the study population selection criteria and the use of the demographic questionnaire as a check. As long as a collaborative team met the criteria of sector or expertise diversity and longevity with the leader, it was allowed to participate.

Control on the influence of personal history and sample maturation was ensured by surveying respondents one time thus minimizing contamination of data by personal experiences between an initial and subsequent measurement. To minimize experimental mortality, no action was required of respondents beyond completing the study survey. Though some respondents chose not to participate, there were no retractions of data or dropouts from those electing to participate. Furthermore, there were no preliminary or post surveys conducted or survey retakes allowed. This ensured that there would be no contamination or regression of data provided over the data collection period. With regard to instrumentation, the validated study instruments remained consistent throughout the study. Online and mail surveys were identical as were the instructions for their completion.

External validity was ensured by not eliminating any collaborative team or organization that met the study criteria. There were also no interviews or pretests of collaborative team members prior to taking the study survey. Once a team was

determined to meet the sampling inclusion criteria and the team leader approved the collaborative team's participation, the only contact with team members was through the researcher in the form of sending invitations to take the survey, reminder notices, and the collection of the respondent's data. Because surveys were only completed online or through the mail by individual respondents, intervention or influence of the team leader was minimized. External validity was also ensured by not interpreting research results to generalize beyond the study sample (Creswell, 2003). Regarding study survey instruments, Salkind (2003) suggested using a reliability test that measures "the same thing more than once and results in the same outcomes" (p. 108). The established validity and reliability factors of the chosen instruments are discussed below.

#### *Validity Data on the Collaborative Leader Instrument*

The LaFasto and Larson (2001) instrument has been tested for validity for use in the assessment of leadership dimensions for various teams with differing functions. For example, DeWald (2002) used the instrument to assess law enforcement teams. Demetropolis (2006) also employed the instrument to study leadership behavior in unexploded ordinance teams.

LaFasto and Larson (2001) indicated that the instrument has also been used on over 6,000 team members and leaders from a variety of large and small teams of both long and short duration and of varying missions (military, aircraft design, mountain-climbing, medical, athletic, executive management, theater production, and political). The wide use of the instrument over time in industry (LaFasto & Larson, 2001), and research (Demetropolis, 2006; DeWald, 2002) is indicative of its ability to interpret



leader behavioral styles; its internal and external validity is evident in that researchers have been able to interpret results reliably for a variety of populations.

LaFasto and Larson (2001) also used one-way ANOVAs to determine if scale scores discriminated between positive and negative team leaders. The researchers reported, “All scale scores were significantly different in all comparisons. This [meant] that the six dimensions (or scale scores) were significantly sensitive to differentiate good from poor team leaders” (p. 210).

#### *Reliability Data on the Collaborative Leader Instrument*

LaFasto and Larson (2001) provided reliability information on the Collaborative Team Leader instrument by computing Cronbach’s alphas, a coefficient of reliability or consistency, for each dimension in two reliability studies. The results of the two sampling studies indicated Cronbach’s alphas as follows: *focus on the goal* = 0.92 and 0.90, *ensuring a collaborative climate* = 0.94 and 0.90, *building team confidence* = 0.90 and 0.92, *demonstrating technical expertise* = 0.90 and 0.79, *setting priorities* = 0.92 and 0.88, and *managing performance* = 0.94 and 0.94. Nunnally, as cited by Santos (1999), stated that accepted value for internal consistency is 0.70 indicating that the LaFasto and Larson instrument provides a reliable measure of each dimension.

DeWald (2002) provided additional support to the reliability of LaFasto and Larson’s (1996) Collaborative Leader instrument in her study of collaborative leadership in law enforcement teams. DeWald provided a measurement of internal consistency or reliability for each dimension of the instrument by using Cronbach’s alpha values as follows: *focus on the goal* = 0.89, *ensuring a collaborative climate* = 0.90, *building team confidence* = 0.88, *demonstrating technical knowledge* = 0.83, *setting priorities* = 0.86,

and *managing performance* = 0.90. The data for the DeWald (2002) reliability tests are summarized in Appendix F.

#### *Validity Data on the OCAI*

The validity measurement of the OCAI indicates how well it measures the four types of organizational culture described by Cameron and Quinn (1999). Cameron and Quinn cited several studies regarding the validity of the OCAI. A study by Cameron and Freeman in 1991, for example, investigated the culture of 334 institutions of higher education (Cameron & Quinn, 1999). Although the instrument may reveal that no organization is dominated by one culture, the degree of dominance of each cultural type is often used as an assessment parameter.

The Cameron and Freeman study revealed that the instrument could assess the dominant cultural type in these organizations (Cameron & Quinn, 1999). In addition, the OCAI revealed that relationships between three cultural dimensions (strength, congruency, and type), and organizational effectiveness can be ascertained. The OCAI was also able to discriminate between the cultural type, its relationship to aspects of organizational process such as decision-making, strategy, structure, and their contribution to effectiveness, which can provide leaders with information regarding how they can influence the development of a culture that might promote organizational effectiveness.

Cameron and Quinn (1999) also provided evidence of two other forms of OCAI validity through the same study conducted by Quinn and Spreitzer in 1991, which produced evidence of both convergent and discriminant validity. Tests for these forms of validity were conducted using a multi-trait-multi-method and multi-dimensional analysis. The multi-trait-multi-method approach used two different instruments to assess

organizational culture, one of which was the OCAI. The other instrument measured the same dimensions of culture using a different form of response scale. The study revealed a moderate level of correlation between the instruments.

Campbell and Fisk, as cited by Cameron and Quinn (1999) tested discriminate validity or the ability of the OCAI to discriminate between cultural types in three ways using separate instruments. In this test, 23 of 24 comparisons were consistent with OCAI expectations. A second test revealed that different scales used for each cultural type indicated that 16 of the 24 comparisons were favorable, providing moderate evidence of validity. A third test measured various patterns of inter-relationships between the two previous tests with a result of a coefficient of concordance of 0.764, indicating strong discriminate validity. Finally, the multi-dimensional scale analysis produced strong support for convergent and discriminate validity between each of the four cultural types.

#### *Reliability Data on the OCAI*

Cameron and Quinn (1999) provided reliability information regarding their Organizational Culture Assessment Inventory instrument. Researchers have used the OCAI to study several types and structures of organizations. Each study contributed to the reliability of the instrument through a form of test-retest reliability described by Leedy and Ormrod (2001).

The reliability of the OCAI refers to the extent to which the instrument measures cultural type consistently. Cameron and Quinn (1999) cited several studies that tested its reliability, such as the work of Quinn and Spreitzer in 1991 that examined 796 executives from 86 public utility firms. Their study yielded Cronbach's alpha coefficients of reliability as follows: *clan culture* = 0.74, *adhocracy culture* = 0.79, *hierarchy culture* =

0.73, and *market culture* = 0.71. Each of these measurements of reliability was considered satisfactory compared to normal standards of internal consistency or reliability. Yeung, Brockbank, and Ulrich, as cited in Cameron and Quinn, conducted another study in 1991 in which 10,300 executives were surveyed in 1,064 business organizations. Cronbach's alpha measurements were consistent with the Quinn and Spreitzer study, yielding similarly satisfactory reliability results as follows: *clan culture* = 0.79, *adhocracy culture* = 0.80, *hierarchy culture* = 0.76, and *market culture* = 0.77. A third study cited by Cameron and Quinn by Zammuto and Krakower in 1991 used the OCAI to investigate culture in higher educational institutions that involved over 1,300 respondents through the structure of educational organizations. Reliability measurements were also satisfactory (*clan* = 0.82, *adhocracy* = 0.83, *hierarchy* = 0.67, and *market* = 0.78).

Cameron and Quinn (1999) noted that other studies can be cited, and in every case, the reliability measurements have been consistent with the above results. An example of an independent study was Pennington's (2001) investigation of leadership factors that influence team culture. Pennington's results were similar to the studies cited by Cameron and Quinn. The Cronbach's alpha coefficients were reasonable: *clan* = 0.77, *adhocracy* = 0.64, *hierarchy* = 0.64, and *market* = 0.67. In effect, these reliability results indicate that sufficient evidence is available regarding the OCAI reliability to create confidence in its use. Pennington's study also involved a pilot test and the above reliability data for the survey with the word *organization* replaced with *team*. A summary of these results is presented in Appendix G.

## Data Organization, Analysis, and Presentation

The data evaluation and presentation process was conducted in three phases: (a) data organization, coding and descriptive statistical evaluation; (b) analysis of data to address the study research question and hypotheses; (c) documentation. Each of these phases is described below.

### *Phase 1: Data Organization, Coding, and Descriptive Statistical Evaluation*

Data collected from the two validated survey instruments and the demographic questionnaire were organized separately. Each data set required organization for subsequent analysis and interpretation. Survey data were organized for statistical analysis as described below.

#### 1. Demographic Questionnaire.

- a. Demographic data were organized into the following categories using Microsoft® Excel: (a) economic sector category, (b) team member category of expertise, and (c) represented organizational category of expertise. Coding was not required for these data.

#### 2. The LaFasto and Larson (1996) Collaborative Team Leader Instrument.

- a. Team leader behavioral data from the team member perspective were organized and scored based on instructions provided by LaFasto and Larson (2001). Coding was used to rank and aggregate responses entered on the Likert-type scale of the instrument into team-based data units. This procedure was accomplished by the same procedure used by DeWald (2002), who also used the LaFasto and Larson instrument to evaluate teams. The procedure entailed the coding of answers (from 1 to 4) from four measurement degrees

ranked from true to false as follows: (a) true = 1, (b) more true than false = 2, (c) more false than true = 3, and (d) false = 4. The degrees indicated the level of collaboration regarding leader behavioral style. The more collaborative the behavioral dimension, the closer the score was to 1 (DeWald, 2002).

- b. The coded data were organized for each survey leadership dimension: (a) focus on the goal, (b) ensure a collaborative climate, (c) build confidence, (d) demonstrate sufficient technical know-how, (e) set priorities, and (f) manage performance.

### 3. The Cameron and Quinn (1999) OCAI.

- a. The OCAI uses a scoring mechanism to measure the strength of four cultural types: (a) clan, (b) hierarchy, (c) adhocracy, and (d) market. The raw OCAI data were organized and scored based on the instrument's established 100-point scale for six defined elements: (a) team dominant characteristics, (b) team leadership, (c) management of employees or team members, (d) organizational glue, (e) strategic emphasis, and (f) criteria for success. Element scores were used to determine the strength of each cultural type for each team in the sample. Coding was not required for these data.

### 4. Evaluation of respondent data using descriptive statistics.

- a. Information from the demographic questionnaire and the two validated surveys was evaluated using descriptive statistics with the SPSS 15.0 Graduate Pack. Descriptive statistics were used to describe the study sample in terms of the demographic questions (as a check of the diversity within each collaborative team), general leadership dimensional results, and cultural type.

*Phase 2: Analysis of the Data to Address the Study Research Question and Hypotheses.*

Survey data were analyzed to address study hypotheses and the research question and hypotheses. Data from all teams were aggregated for analysis by team units. The surveys provided interval data for both the predictor and criterion variables; therefore, the Pearson Product Moment Correlation test was used (Dallal, 2003; Triola, 2001) for hypothesis testing and for determining the strength of the relationship between leader behavioral style dimensions and team cultural type.

*Phase 3: Documentation*

Documentation of the results was also performed through the development of tables and supporting text. Data was displayed and discussed in terms of general statistics, correlation analysis, and interpretation of results. Documentation of results has been presented in chapters 4 and 5.

Summary

Chapter 3 has presented the selected study methodology and study design. Also presented was a discussion regarding the appropriateness of the methodology and design for this study. A description of the population, sampling, data collection, and analysis has also been presented, along with documentation of the study instrumentation.

The literature supports the study research methodology and design as a quantitative correlation study (Simon & Francis, 2001) through its use of two validated surveys (Cameron & Quinn, 1999; LaFasto & Larson, 1996) and a set of demographic questions. The instruments were used to determine the relationship between collaborative leader behavioral style and team cultural type. Study results contribute to the knowledge

of leadership theory regarding leader behavioral style and cultural type occurring in collaborative teams addressing water resource issues. Chapter 4 presents the next step of the study process. The chapter displays the results of the data analysis to bring out its meaning in terms of the study research question.



## CHAPTER 4: PRESENTATION AND ANALYSIS OF DATA

The purpose of this non-experimental quantitative, correlation research study was to determine the relationship between six dimensions of collaborative leader behavioral style and the strength of four cultural types for a sample of water resources collaborations, with diverse memberships, operating in the United States. To investigate these relationships, a survey of water resources collaborative teams was conducted between February and August 2007. The survey combined the LaFasto and Larson (1996) Collaborative Team Leader Survey, Cameron and Quinn (1999) OCAI, and a demographic questionnaire.

Several water resources teams were screened to determine if they met study sampling inclusion criteria. Candidate teams that were willing to participate were surveyed and respondent data were organized and analyzed as described in chapter 3. Chapter 4 presents a description of the collected data and provides a description of the data analysis and results with regard to the study research question and hypotheses.

### Survey Testing

Two versions of the study survey were developed, online and mail. The online survey was developed using Hosted Survey™, a Web-based survey software company. The tool used for development was Hosted Survey's™ software package, Hostedware®. The mail survey was a verbatim paper version of the online survey.

The Web-based version was considered the primary vehicle for data collection. The use of the two survey modes was intended to increase the response rate by allowing participants without access to the Internet to have the option of a mail survey. Using a combination of Web and mail modes has been a technique employed by other

researchers. The technique is often employed to boost response levels in light of statistics that indicate the potential for lower response rates when using Web-based surveys as a primary data source (Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008).

Concern for any discrepancies between Web and mail modes was limited through testing both versions, maintaining consistency between the two survey types, and the small number of mail surveys actually used. In addition, this concern was minimized based on past research comparing the two modes. McCabe (2004) for example, indicated no significant differences in responses between the two modes in a study on illicit drug use, despite his observation of an age difference between those electing to use Web-based and mail surveys. Kwak and Radler (2002) and Manfreda, Bosnjak, Berzelak, Haas, and Vehovar (2008) noted that each survey mode has its own advantages (web surveys often reveal higher quality and more complete responses while mail surveys can boost response). These researchers also noted that demographics may vary between users (more technically advanced and younger respondents tend to favor Web-based surveys). Despite these findings, these researchers observed that there were no significant differences in response data comparability. They contended that more research is needed with regard to mixing survey modes.

Prior to initiating the data collection process, several water resources professionals who had either past or on-going experience with water resources collaborative teams tested both versions of the survey. The purpose of the test, conducted in January 2007, was to ensure that both versions clearly conveyed consent information, instructions for survey completion, and survey questions. Quality and error controls were also tested to ensure that survey responses would be complete and accurate. Testing the

surveys added a level of rigor to the data collection process by limiting the potential for erroneous responses and inconsistencies (Lancaster, Dodd, & Williamson, 2004; van Teijlingen, Rennie, Hundley, & Graham, 2001).

Test respondents were asked to take the online survey using the Hosted Survey™ Website basing their responses on an on-going or past team collaboration with which they associated. Test responses were downloaded to determine if the survey software provided data that could be analyzed using selected statistical procedures. Test respondents were also asked to deviate from survey instructions to test the ability of the software to issue warning messages and correct erroneous input and procedures.

The mail survey was tested in a similar fashion. Water resources professionals were asked to review the mail survey to determine its ability to convey instructions and collect a useable set of data. A drawback of the mail surveys was that they did not provide an electronic means of warning respondents if their input was incomplete or erroneous. Therefore, the primary consideration of testing the mail version of the survey was to evaluate the clarity of its instructions. Upon completion of the test, any errors or problems noted were corrected and retested by the researcher. Each version of the survey instructions as well as the consent information is presented in Appendix E.

#### Data Collection

Of 43 teams surveyed, only 38 met the study inclusion criteria. The qualifying teams represented collaborations from 24 states. The data collection process involved team screening and solicitation as well as treatment of missing data or a low rate of response.

### *Collaborative Team Screening and Solicitation*

Prospective teams were researched on the Internet and through direct contact (email and telephone) with water resources organizations. Internet searches were performed using key words such as watershed groups, river basin teams, water resources teams, water resources project teams, and water resources committees or councils. Teams were solicited that addressed issues on an individual watershed, multiple watersheds or river basins within the United States.

Team networking agencies such as the national Non-point Education for Municipal Officials (NEMO) Network (University of Connecticut, 2007), the Environmental Protection Agency (EPA) Surf Your Watershed listings, and EPA list servers (Volmonitor) of watershed groups (Environmental Protection Agency, 2007) were used as a resource to locate collaborative teams. Leaders of teams appearing to meet study criteria were contacted by email or telephone as the next step in the screening process. Team leaders who expressed interest in participating in the study were interviewed by telephone to determine if they fit the sampling criteria and to determine the willingness of their group to participate.

The team selection process involved screening 2,552 teams. Several were rejected because they were either inactive, or appeared not to be collaborative in a multi-organizational or multi-expertise format. After the initial screening, 633 teams were selected as survey candidates and were contacted by email using the introductory letter and a one-page summary of the study proposal presented in Appendix H.

Of 151 teams that responded to the email, 62 were rejected because they did not meet study criteria or the team leader or team members elected not to participate.

Reasons for non-participation included lack of interest or time to take the survey, reluctance to burden team members with a survey, negative experiences from participation in other studies, and reluctance to release contact information of team members. Of the remaining teams, 46 did not respond to requests to participate or contact from the team leader was lost, leaving a net of 43 participating teams.

Of the participating 43 collaborative teams, 5 were rejected due to limited or incomplete team member responses or because a team's response to the demographic questionnaire indicated that it did not meet the study sampling criteria. Ultimately, data from 38 teams were used for the study analysis. The target sample was limited to a minimum of 30 teams. A summary of the screening and solicitation process is presented in Table 2.

Participating teams ranged in size from 3 to 49 active members, exclusive of the leader. Many teams consisted of a large component of volunteers or advisory members with limited participation in the collaborative process. Team leaders were asked to provide their core or most active collaborators for the survey.

Several team members notified the researcher that they were not active, had left the team, or did not participate in team collaboration frequently enough to provide a valid response to the survey. These team members were eliminated from the study sample. Potentially, several of the non-responding team members were also inactive, but did not advise the researcher. Therefore, the team response estimate may be conservative.

Table 2

*Team Selection Summary*

Activity	Teams
Teams, groups, organizations screened	2552
Teams rejected due to not meeting study criteria	1900
Teams contacted as potential candidates	652
Teams rejected as not meeting study criteria or not responding	501
Potential candidate teams responding	151
Teams eliminated due to lack of interest or not meeting study criteria	62
Teams eliminated due to no response or loss of contact	46
Teams participating in survey	43
Teams eliminated due to inadequate response	5
Net teams included in study sample	38

Of the total, 35 of the sample population teams responded online. Three teams responded to the survey by mail or a combination of online and mail surveys. The average response rate from the total sample membership of 743 respondents was 36.3% or 270 respondents. Of the three teams that participated by mail two were eliminated because they did not meet sampling criteria due to a limited response. Team sizes ranged from 3 to 49 members, averaging 7.1 members for the sample of 38 teams. Individual team response rates ranged from 9.1 to 100%, averaging 49.5%. A summary of the team member and team response are presented in Tables 3 and 4. Detailed summary tables of this information are presented in Appendix I.

Table 3

*Team Member Response Summary*

Respondent Category	Response
Original number of respondents	892
Respondents eliminated by request	149
Number of qualified respondents	743
Respondents eliminated (incomplete or erroneous responses)	107
Non-responses	366
Net respondents	270
Net response rate from qualified respondents (percent)	36.7

Table 4

*Team Response Summary*

	Frequency	Percent
Teams responding	38	
Maximum team membership	49	100.0
Minimum team membership	3	9.1
Mean number of team members	7.1	49.5

*Treatment of Missing Data or a Low Team Response*

The design of the online survey allowed participants to reenter the survey if it was not completed during a single session. Response data indicated that 107 participants were observed to leave the survey and not return to complete it despite frequent reminders to

reenter and complete the survey. Incomplete surveys were eliminated from the study analysis.

### Data Analysis

The data analysis was conducted in three phases: (a) data organization, coding and descriptive statistical evaluation; (b) analysis of data to address the study research question and hypotheses; (c) documentation. Chapter 4 is a culmination of the last phase, documentation. The significance level of the analysis was set at  $\alpha \leq 0.05$ . The process and results of each phase is presented in the remainder of this section.

#### *Data Organization, Coding, Descriptive Statistical Data Presentation*

After collection, survey data were organized and coded, when required, for statistical analysis. Data were organized from the demographic questionnaire, LaFasto and Larson (1996) instrument, and Cameron and Quinn (1999) instrument and converted from individual responses to a team response format.

*Demographic questionnaire.* Demographic data were organized using Microsoft® Excel. Data were arranged into the following categories: (a) economic sector represented, (b) team member category of expertise, and (c) represented organization's category of expertise. These data are presented in Appendix J.

*The LaFasto and Larson (1996) collaborative team leader instrument.* Team leader behavioral data from the team member perspective were organized and coded as performed by DeWald (2002) to provide for a team-based analysis. The procedure entailed the assigning of a code from 1 to 4 in terms of four measurement degrees as follows: (a) true, (b) more true than false, (c) more false than true, and (d) false. The procedure was followed for each of 40 questions related to the six LaFasto and Larson



leadership dimensions: (a) focus on the goal, (b) ensure a collaborative climate, (c) build confidence, (d) demonstrate sufficient technical know-how, (e) set priorities, and (f) manage performance.

Two additional open-ended questions were also a part of this survey. Responses to these questions were not coded and were only used to gain insight to the analysis results. A summary of the respondent data for Question 1 through 40 and Questions 41 and 42 are presented in Appendix L.

*The Cameron and Quinn (1999) OCAI.* The OCAI uses a 100-point scoring mechanism to measure the strength of four cultural types on a team: (a) clan, (b) hierarchy, (c) adhocracy, and (d) market. Data collected from this instrument were organized and tabulated based on the instrument's established 100-point scale for six defined elements: (a) team dominant characteristics, (b) team leadership, (c) management of employees or team members, (d) organizational glue, (e) strategic emphasis, and (f) criteria for success. Element scores were used to determine the strength of each cultural type for each team in the sample. Coding was not required for this numerical data. A summary of the final cultural scores is provided in Appendix M.

#### *Descriptive Statistical Results*

Data from each part of the survey are presented using descriptive statistics. Because this study has a team-based focus, only the results of the 38 qualifying teams is presented in this chapter. A summary of individual responses is provided for informational purposes in Appendices K and M.

*Demographic questionnaire.* Each collaborative team was comprised of a diverse membership. For purposes of the current study, diversity was represented by different

organizations, sectors, professional expertise, and organizational expertise on the team. The public sector was represented in 34 or 89.5% of the 38 team sample. Nonprofit representatives comprised the next largest group (33 teams or 86.8% of the population). Private sector and private citizens were the smallest group in the study sample. Respondents from these categories were on 12 (31.6%) and 7 (18.4%) teams, respectively.

Personal expertise in the study sample was noted to have a wide range of diversity. Expertise was represented in 18 of the 21 categories listed in the demographic questionnaire. Organizational expertise was noted to exist in 17 of the 21 study categories. This information indicated the range of personal and organizational expertise required to resolve the various water issues addressed by each sample team. Expertise ranged from technical (science, and engineering), to legal, educational, or policy forms of expertise, each with a stake in the collaborative outcome. Additionally, team members from the public, private, and non-profit economic sectors participated in the team collaborations. Representation by private citizens was also common in many of the sample teams. An average of 2.3 sectors, 3.7 categories of personal expertise, and 3.7 categories of organizational expertise were represented on the 38 teams in the study sample. Detailed information is presented in Appendix J.

*LaFasto and Larson (1996) Behavioral Style Dimensions.* Six dimensions of behavioral style were measured through 40 questions on the LaFasto and Larson Collaborative Team Leader Survey. To determine a mean team score for each dimension, scores for each team's respondent answers were averaged as per LaFasto and Larson's survey instructions and as evidenced by the use of the survey to evaluate team units by

other researchers (DeWald, 2002). A team summary and comprehensive list of responses to these questions by individual respondents is contained in Appendix K.

Table 5 summarizes the team scores for each dimension on a team basis. The data reflected in the table provided insight into the team responses regarding the perception of their leader's behavioral style. Higher scores, indicating less collaborative capability, were observed for team leaders for their ability to focus on the goal, ensure a collaborative climate, set priorities, and manage performance (team mean scores of 1.60, 1.55, 1.59, and 1.86, respectively). Lower scores, indicating a greater degree of collaborative effectiveness, were observed for the dimensions of building team confidence and sufficient technical knowledge (team mean scores of 1.48 and 1.43, respectively).

Table 5

*Team Statistics for the Six LaFasto and Larson Leadership Behavioral Dimensions*

	1	2	3	4	5	6
	Focus on the Goal	Ensure a Collaborative Climate	Build Confidence	Demonstrate Sufficient Technical Know-how	Set Priorities	Manage Performance
Mean	1.60	1.55	1.48	1.43	1.59	1.86
Median	1.60	1.49	1.44	1.42	1.60	1.82
Max	2.28	2.18	2.04	2.00	2.23	2.67
Min	1.15	1.13	1.10	1.00	1.00	1.19
SD	0.29	0.27	0.23	0.24	0.28	0.34

*The Cameron and Quinn (1999) OCAI Culture Categories.* The strength of four types of team culture was measured through six multiple part questions on the OCAI. The strength of each of the four cultural types in each team was based on the team's average score for each question. Higher scores indicated a stronger tendency toward a cultural type. A summary of individual participant responses to each question by team and individual respondent is presented in Appendix M. Table 6 summarizes the cultural results on a team basis. The teams in the study sample trended more toward being perceived as clan cultures (team mean score of 41.85) than hierarchy, adhocracy, or market cultural types (team mean scores of 22.91, 20.77, and 14.48, respectively).

Table 6

*Team Statistics for the Four Cameron and Quinn OCAI Cultural Types*

	Culture 1:	Culture 2:	Culture 3:	Culture 4:
	Clan	Hierarchy	Adhocracy	Market
Mean	41.85	22.91	20.77	14.48
Median	41.63	22.50	20.94	14.23
Max	59.83	37.50	32.92	24.06
Min	28.35	8.96	7.39	4.11
SD	7.20	8.12	6.15	4.44

*Analysis of the Data to Address the Study Research Question and Hypotheses*

Survey data were analyzed to address the study research question through the 24 hypotheses. Pearson correlation was used to measure strength of the relationship between each leader behavioral style dimension and team cultural type. Results of this analysis are described in the next section.

### Results of the Study Research Question and Hypotheses Analysis

The study employed one research question and 24 statistical hypotheses. The research question represented the study focus and allowed for development and testing of the hypotheses using quantitative data. To address each hypothesis, the Pearson Product Moment Correlation test was employed to measure the relationship between the criterion variables (team cultural type) and their associated predictor variables (leader behavioral style dimension). The Pearson Product-Moment correlation coefficient,  $r$ , provides a measure of the strength of the linear association between variable pairs (Triola, 2001).

Nardi (2003) explained that the correlation coefficient is represented by a number between plus and minus one ( $-1.0 \leq r \leq +1.0$ ). As  $r$  approaches these limits, the strength of the correlation becomes greater. The Pearson Product-Moment analysis employs the  $F$ -test to calculate the probability of the likelihood that two variances were or were not significant as reported by the survey. A 95% confidence level and the alpha ( $\alpha \leq 0.05$ ) was used in the study based on the assumption that the variables represented a normal distribution. Pearson's product moment correlation coefficient was employed through the SPSS function CORRELATION. The result for testing each hypothesis is presented in the remainder of this section.

#### *Hypotheses 1, 2, 3, and 4*

The objective of hypotheses one through four was to measure the relationship between the behavioral style dimension of focusing on the goal and team culture. Each hypothesis represents a pairing of this behavioral dimension with one of the four Cameron and Quinn (1999) cultural types. The hypotheses were stated as follows:

H1<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H2<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H3<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H4<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of focusing on the goal and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

Analysis of these hypotheses yielded no statistically significant correlations.

Therefore, no statistically significant relations were observed between the LaFasto and Larson (1996) leadership dimension of focusing on the goal and the Cameron and Quinn (1999) four cultural types at the  $\alpha$  level of  $\leq 0.05$ . The results are presented in Table 7.

Table 7

*Correlation between LaFasto and Larson's Leadership Dimension of Focusing on the Goal and Team Cultural Type*

	Clan	Hierarchy	Adhocracy	Market
Pearson Correlation ( <i>r</i> )	-.22	.14	.11	-.04
<i>p</i> (2 tailed)	.18	.41	.53	.80

*Note: n = 38*

*Hypotheses 5, 6, 7, and 8*

The objective of hypotheses five through eight was to measure the relationship between the behavioral style dimension of ensuring a collaborative climate and team culture. Each hypothesis represents a pairing of this behavioral dimension with one of the four Cameron and Quinn (1999) cultural types. The hypotheses were stated as follows:

H5<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H6<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H7<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H8<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

Analysis of these hypotheses yielded no statistically significant correlations.

Therefore, no statistically significant relations were observed between the LaFasto and Larson (1996) leadership dimension of ensuring a collaborative climate and the Cameron and Quinn (1999) four cultural types at the  $\alpha$  level of  $\leq 0.05$ . The results are presented in Table 8.

Table 8

*Correlation between LaFasto and Larson's Leadership Dimension of Ensuring a Collaborative Climate and Team Cultural Type*

	Clan	Hierarchy	Adhocracy	Market
Pearson Correlation ( $r$ )	-.22	.06	.20	-.03
$p$ (2 tailed)	.18	.73	.22	.87

Note:  $n = 38$



*Hypotheses 9, 10, 11, and 12*

The objective of hypotheses nine through twelve was to measure the relationship between the behavioral style dimension of building confidence and team culture. Each hypothesis represents a pairing of this behavioral dimension with one of the four Cameron and Quinn (1999) cultural types. The hypotheses were stated as follows:

H9<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H10<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H11<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H12<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of building confidence and the Cameron and Quinn (1999)

market cultural type in water resources collaborative teams with diverse memberships.

Analysis of these hypotheses yielded no statistically significant correlations.

Therefore, no statistically significant relations were observed between the LaFasto and Larson (1996) leadership dimension of building confidence and the Cameron and Quinn (1999) four cultural types at the  $\alpha$  level of  $\leq 0.05$ . The results are presented in Table 9.

Table 9

*Correlation between LaFasto and Larson's Leadership Dimension of Building Confidants and Team Cultural Type*

	Clan	Hierarchy	Adhocracy	Market
Pearson Correlation ( $r$ )	-.13	-.006	.19	-.04
$p$ (2 tailed)	.43	.97	.26	.83

Note:  $n = 38$

*Hypotheses 13, 14, 15, and 16*

The objective of hypotheses 13 through 16 was to measure the relationship between the behavioral style dimension of demonstrating sufficient technical know-how and team culture. Each hypothesis represents a pairing of this behavioral dimension with one of the four Cameron and Quinn (1999) cultural types. The hypotheses were stated as follows:

H13<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron

and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H14<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H15<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H16<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership behavioral style dimension of demonstrating sufficient technical know-how and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

Analysis of these hypotheses yielded no statistically significant correlations.

Therefore, no statistically significant relations were observed between the LaFasto and Larson (1996) leadership dimension of demonstrating sufficient technical know-how and the Cameron and Quinn (1999) four cultural types at the  $\alpha$  level of  $\leq 0.05$ . The results are presented in Table 10.

Table 10

*Correlation between LaFasto and Larson's Leadership dimension of Demonstrating Sufficient Technical Know-How and Team Cultural Type*

	Clan	Hierarchy	Adhocracy	Market
Pearson Correlation ( <i>r</i> )	.000	.02	.02	-.06
<i>p</i> (2 tailed)	1.00	.93	.91	.74

*Note: n = 38*

*Hypotheses 17, 18, 19, and 20*

The objective of hypotheses 17 through 20 was to measure the relationship between the behavioral style dimension of setting priorities and team culture. Each hypothesis represents a pairing of this behavioral dimension with one of the four Cameron and Quinn (1999) cultural types. The hypotheses were stated as follows:

H17<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of setting priorities and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H18<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of setting priorities and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H19<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style

dimension of setting priorities and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H20<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of setting priorities and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

Analysis of these hypotheses yielded one statistically significant correlation. A statistically significant relation was observed between the LaFasto and Larson (1996) leadership dimension of setting priorities and the Cameron and Quinn (1999) adhocracy cultural type at the  $\alpha$  level of  $\leq 0.05$ . The results are presented in Table 11.

Table 11

*Correlation between LaFasto and Larson's Leadership Dimension of Setting Priorities and Team Cultural Type*

	Clan	Hierarchy	Adhocracy	Market
Pearson Correlation ( <i>r</i> )	-.27	-.08	.34*	.11
<i>p</i> (2 tailed)	.11	.62	.04	.51

*Note: n = 38; \* Correlation is statistically significant at the  $\alpha$  level of  $\leq 0.05$  (2 tailed)*

*Hypotheses 21, 22, 23, and 24*

The objective of hypotheses 21 through 24 was to measure the relationship between the behavioral style dimension of managing performance and team culture. Each hypothesis represents a pairing of this behavioral dimension with one of the four Cameron and Quinn (1999) cultural types. The hypotheses were stated as follows:

H21<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999) clan cultural type in water resources collaborative teams with diverse memberships.

H22<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999) hierarchy cultural type in water resources collaborative teams with diverse memberships.

H23<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999) adhocracy cultural type in water resources collaborative teams with diverse memberships.

H24<sub>0</sub>: There will be no statistically significant relationship found, at a pre-selected  $\alpha$  level of  $\leq 0.05$ , between the LaFasto and Larson (1996) leadership style dimension of managing performance and the Cameron and Quinn (1999) market cultural type in water resources collaborative teams with diverse memberships.

Analysis of these hypotheses yielded one statistically significant correlation. A statistically significant relation was observed between the LaFasto and Larson (1996) leadership dimension of managing performance and the Cameron and Quinn (1999) clan cultural type at the  $\alpha$  level of  $\leq 0.05$ . The results are presented in Table 12.

Table 12

*Correlation between LaFasto and Larson's Leadership Dimension of Managing performance and Team Cultural Type*

	Clan	Hierarchy	Adhocracy	Market
Pearson Correlation ( <i>r</i> )	-.36*	.04	.16	.29
<i>p</i> (2 tailed)	.03	.81	.33	.08

*Note: n = 38; \* Correlation is statistically significant at the  $\alpha$  level of  $\leq 0.05$  (2 tailed)*

Summarizing, only two dimensions of LaFasto and Larson's (1996) leadership dimensions were observed to have significant relationships with cultural type. The relationships of the dimensions of setting priorities and managing performance were significantly correlated with the adhocracy and clan cultural types respectively ( $r = .34$  and  $-.36$ , respectively). An interpretative discussion of these results is presented in chapter 5.

#### Open-Ended Question Responses

The LaFasto and Larson (1996) Collaborative Team Leader Survey provided each respondent with the opportunity to comment on his or her team leader. Data from these questions were sorted to provide insight regarding the diversity of responses between individuals and teams. These two questions (Questions 41 and 42) were stated as follows:

Question 41: What are the strengths of the team leader?

Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?

### *Question 41 Response Analysis*

The answers provided for Question 41 were interpreted by assigning each answer to a category of LaFasto and Larson's (1996) leader behavioral dimensions. The interpretation was a subjective analysis designed to provide insight regarding what areas of a leader's performance were important to team members of water resources collaborations. Due to the subjective nature of this analysis, results are only provided for discussion purposes.

Of the 270 respondents, 117 or 43% valued the ability of their leaders to ensure a collaborative climate. Those indicating their leader's technical know-how or knowledge as important totaled 69 or 26%. The leader's ability to focus on the goal was noted by 39 respondents or 14%. Building confidence was an important dimension for 20 respondents or 7% of the study sample. The ability of the leader to set priorities and manage performance was indicated as important eight team members for each dimension or 3% each. The remaining respondents did not comment. A listing of the responses to Question 41 is presented in Appendix L.

### *Question 42 Response Analysis*

The answers provided for Question 42 were interpreted by the same process used for Question 41. As for the previous question, a subjective analysis process was used to provide insight regarding what areas of a leader's performance were important to team members of water resources collaborations. Due to the subjective nature of the analysis, results are provided for discussion purposes.

Of the 270 respondents, 52 or 19% indicated that their collaborative leaders were weak in the area of ensuring a collaborative climate. 24 respondents or 9% of the study



sample indicated knowledge or technical know-how as an area needing improvement. 38 respondents or 14% of the sample noted improvement in leaders focusing on goals and tasks. 11 respondents or 4% of the study sample noted the lack of building confidence. 15 respondents or 6% of the study sample indicated the lack of ability of the leader to set priorities. A total of 29 respondents or 11% of the sample noted that their leader could improve on how they manage performance. The remaining respondents (101 respondents) provided comments that did not relate to the study, indicated that they were satisfied with their leader, or made no comment. A listing of the responses to Question 42 is presented in Appendix L.

#### Research Question

The intent of the research was to answer the research question: To what extent were the six leadership styles and the four cultural types, as identified by LaFasto and Larson (1996) and Cameron and Quinn (1999) respectively, correlated for a sample of 38 water resources collaborative teams with diverse memberships? Results of the study indicate few observed relationships regarding the six LaFasto and Larson dimensions of leader behavior and the Cameron and Quinn four categories of culture as perceived by members of water resources collaborative teams. Only two leadership dimensions showed significant relations for the 38 teams surveyed: managing performance and clan culture, and setting priorities and adhocracy culture.

#### Summary

The purpose of chapter 4 was to describe the collection and measurement of the study survey data and to describe the quantitative, descriptive, correlation study findings with regard to the relationship between leader behavioral style and team culture for a

sample of water resources collaborative teams. Data were collected using the LaFasto and Larson (1996) Collaborative Team Leader Survey, the Cameron and Quinn (1999) OCAI, and a demographic questionnaire. Selection of LaFasto and Larson instrument was based on its ability to provide information on the collaborative behavior of leaders of collaborative groups such as those operating in the water resources field. The OCAI was selected because of its use for categorizing the cultural profile of organizations and teams for a variety of endeavors, such as addressing water resources issues.

Data collected for the study were evaluated and described through descriptive statistics, and correlation. A cursory evaluation of two open-ended questions on the LaFasto and Larson (1996) instrument was also performed to provide interpretive information on the perceived strengths and weaknesses of each team leader. The results of the correlation analysis indicated only two pair of 24 criterion and predictor variable combinations indicated significant correlations. A discussion and interpretation of these results follows in chapter 5.

### Conclusion

The results of this study, presented in chapter 4, indicated that diverse, multi-sector, multi-disciplinary water resources collaborative teams provide few correlations with regard to the perceived leader behavioral style and the team culture. Only two statistically significant correlations were observed between leader behavioral style and team cultural type for the 38 teams surveyed: managing performance and clan culture, and setting priorities and adhocracy culture. Discussion of the interpretation of these findings and their implications are presented in chapter 5.

## CHAPTER 5: SUMMARY AND RECOMMENDATIONS

Chapter 5 represents a culmination of the research. Presented in the chapter are overviews of the study and its findings as well as conclusions with regard to the research question: To what extent were the six leadership styles and the four cultural types, as identified by LaFasto and Larson (1996) and Cameron and Quinn (1999) respectively, correlated for a sample of 38 water resources collaborative teams with diverse memberships? Insights derived from the research are discussed with regard to their implications on the existing body of leadership knowledge, water resources management, and society. Recommendations for future research are also presented.

### Study Overview

The following section presents an overview of the background of the study. Also presented is an overview of the study documentation and findings followed by a discussion of limitations posed by the study design and methodology. Ethical considerations applied by the researcher are also discussed.

### *Background of the Problem*

Hafer (2001) contended that organizations in the public, private, and nonprofit sectors are increasingly confronted with complex issues requiring external expertise and resources. Consequently, organizational leaders are discovering that the process of solving complex problems, such as those in the water resources field, may benefit from collaboration among several organizations and people with diverse backgrounds and perspectives (LaFasto & Larson, 2001). Organizations and their leaders consequently, must continue to develop knowledge regarding how to make collaboration more effective as a problem-solving tool (Lynn & Salzman, 2006).

Two important components of the collaborative interaction between diverse disciplines and organizations are the team leader's behavioral style (Wilson, 2002) and team cultural type (Schein, 1992). Trice and Beyer (1993) articulated this interface as definitive to how leaders influence the evolution of team culture as a component of effective problem solving. Their observation has important implications to the management of water resources because ineffective or failed collaborations can be costly and may result in the possibility that water resources issues facing society are not effectively resolved (Connick, 2003). Therefore, water resources leaders need to gain an appreciation of how their behavioral style contributes to the culture of collaborative efforts as a factor of team performance (Paul & McDaniel, 2004).

#### *Limitations*

The study scope was limited to the determination of the degree and direction of a possible relationship that might exist between six dimensions of collaborative team leader behavioral style and the cultural profile of their teams for a selected group of water resources collaborations. The study was limited to 270 survey respondents representing 38 collaborative teams. Teams were composed of members representing a diverse range of economic sectors, personal expertise, and organizational expertise.

The validity and reliability of this research were controlled by the nature of the research problem, the survey instruments, and the methodology. Additional limitations are presented below.

1. The data collection was limited to teams addressing water resources issues.
2. Teams were required to operate in the United States.

3. Teams were required to exhibit a minimum level of diversity in that at least two economic sectors, or two categories of either personal or organizational expertise.
4. Validation of the survey instruments was limited to previous research conducted for a variety of organizations and leadership situations. The reliability and validity of the survey instruments were limited to six leadership behavioral dimensions described by LaFasto and Larson (1996) and four cultural types defined by Cameron and Quinn (1999).
5. Data collected were limited to the design of the study survey. Questions restricted each respondent to provide a response to each questions without allowing the opportunity to indicate lack of knowledge or applicability of the questions regarding their leader or team.
6. The sample dataset was limited to those teams and team members that chose to participate which could introduce systemic sample bias into the results. Teams or team members not desiring to participate may represent a perception of leadership behavior or culture not included in the final dataset.
7. The study dataset was derived from 38 teams that were willing to participate. Although the number of qualifying teams is not known across the United States, a larger sample of teams may have produced a variation in results.
8. The study analysis was limited to team unit responses (n=38) and not the individual responses of the sample population (n=270).
9. The non-experimental quantitative, correlation study design was not intended to ascertain cause-and-effect relationships. The analysis of the data was limited to the Pearson correlation methodology.

### *Ethical Dimensions*

Effective written and oral communication ability and a professional level of knowledge of water resources issues were critical skills required by the researcher in building a partnership with leaders and team members of water resources collaborative teams involved in the study. Ethical consideration of which teams and team members were to be included in the study was necessary to ensure the development of a comprehensive and valid dataset. The ability to address questions posed by team leaders or their members was required through a thorough knowledge of the research subject and objectives of the study.

A commitment to the confidentiality of participants is evidenced by the letter of introduction used to solicit teams, and by the inclusion of confidentiality information and a consent for both the online and mail version of the study survey. In addition, the data collection process ensured privacy by restricting the exchange of data to occur only between the respondent and the researcher. The removal and destruction of all identifying information at the conclusion of the study was an added measure used to ensure confidentiality.

### Summary of Findings

Findings revealed unexpected results. Initially, it was expected that several correlations between leadership behavioral style dimensions and cultural type would emerge. The clan culture did emerge as a dominant team cultural type. The study only revealed two statistical relationships between six leader behavioral styles and four cultural types, a total of 24 variable pairs. The only statistically significant correlations observed were between the leadership dimension of setting priorities and the adhocracy

cultural type ( $r = .34$ ) and the leadership dimension of managing performance and the clan cultural type ( $r = -.36$ ). These correlations are discussed in the conclusions section of this chapter. All other predictor and criterion variable pairs were observed to be not statistically related. The non-statistical relationships are not elaborated upon as they provide no conclusive evidence, rather they are only discussed terms of their implication to recommended future research.

### Conclusions

Conclusions derived from the analysis of data are summarized below.

Conclusions were reached with regard to the research question and future research needs. Supporting literature is also presented. Based on the study results, the conclusion was reached that there is a statistical relationship between the leadership behavioral dimension of setting priorities and the adhocracy cultural type, and between the behavioral dimension of managing performance and the clan cultural type.

With regard to the statistically significant relationship between the leader behavioral dimension of setting priorities and the adhocracy cultural type ( $r = .34$ ), the observed correlation may indicate that a leader's ability to set priorities in an adhocracy cultural environment is an important element regarding the productivity of a collaborative water resources team. An interesting observation is that both this leadership behavioral dimension and the adhocracy cultural type were not prevalent, in terms of team scores, in the study sample. Water resources teams participating in the study tended to exhibit stronger levels of the clan and hierarchical cultural types. However, the existence of adhocracy culture in a diversified water resources team represents a side of the study teams that is decentralized, dynamic, and adaptable (Cameron & Quinn, 1999). In a

dynamic field such as water resources, with increasing pressure on the resource as well as increasingly diverse stakeholder interests, a team must be able to maintain the ability to adapt to a changing environment, as represented by the adhocracy culture. The correlation of this cultural type and the ability of a leader to set priorities may indicate that limited prioritization by the leader may enhance the adhocracy side of a team's cultural profile. In effect, the greater the tendency for a leader to set priorities, the lower the tendency that an adhocracy culture will develop.

With regard to the statistically significant relationship between the leader behavioral dimension of managing performance and the clan cultural type, a negative correlation ( $r = -.36$ ) was observed. An interesting observation regarding this correlation is that the leadership dimension of managing performance and the clan cultural type were the opposite with regard to strength. Managing performance was the least collaborative behavioral dimension and clan culture was the most prominent cultural type. The strength of the clan culture in the study sample may indicate that the diverse nature of a team's membership and the desire for the team to work toward a common goal in a family style atmosphere could be important to how well water resources issues are addressed. The negative correlation of this cultural type with the behavioral dimension of managing performance may indicate that a leader's ability to set strict performance standards may impact the team's ability to build a consensus through clan style teamwork for addressing water issues. In effect, the greater the tendency for the leader to manage performance, the greater the tendency that a clan style culture will develop.

With regard to the 22 variable pairs that were not statistically related, no conclusions could be reached. This result is indicative of a lack of knowledge regarding



the relationships between leader behavioral style and team cultural type. The result supports the need for future research that promotes a better understanding of how a leader's behavioral style could impact the cultural profile of a collaborative team addressing water resources or other issues.

Study results represent a single step in gaining a better understanding of the paradigm shift that organizational leaders now face from a past of managing a single organization or system of sub-organizations, to leading a complex system of diverse organizations, each bringing their own set of subsystem influences to the table. Leaders of the 21st Century must now address systemic topics and situations that deal with relationships, networks, interdependencies, integration, holistic approaches, synergy, shared visions, and the interface between individuals and organizations (Crother-Laurin, 2006; Marino, 2007). They must realize that challenges for managing the collaborative process is enormous given the cultural and organizational differences represented (Johnson, 2007).

To accomplish this, leaders will need to have a more complex form of interactive behavior to effectively build relationships, not just in a paternal sense, but more in the direction of a sibling or friend (Maccoby, 2006). The lack of correlations may be indicative that the complexity of managing this process is still not fully understood. The wide range in responses from the open-ended questions regarding leader strengths and weaknesses from the LaFasto and Larson (1996) instrument lend credence to the notion of complexity in that a wide variety of perceptions of the leader's abilities may be an added challenge to effective leading of collaborative teams.

## Implications

The study results have several implications for leaders of water resources collaborative teams. There are also implications for leadership scholars, and society. The impact of the study on each of these categories is discussed below.

### *Implications for Water Resources Collaborative Leaders*

Because of the increasing need for sustainable and viable water systems, water management has changed considerably in recent years from single river management approaches to basin-wide endeavors (Witter, van Stokkom, & Hendriksen, 2006). For example, for several water systems in the Netherlands, changes in water management practices have begun to focus on increasing collaboration with other water managers and communicating in a more open manner with stakeholders. The shift to a more collaborative approach lends weight to the study's focus on the importance of understanding collaboration through the relationship between leadership behavioral style and the culture of their collaborative team. Consequently, the implications of the study, in that few statistically related relationships between leadership behavior and team culture were observed, may point to a lack of knowledge regarding how a leader's behavior influences a team's cultural development as a factor for effectively addressing issues presented by a diverse set of water resources administrators, organizations, managers, and stakeholders.

### *Implications for Leadership Scholars*

With regard to future leadership research, Bennis (2007) stated that although the evolution of leadership theory in the future is not clear, any development of a comprehensive leadership theory would itself need to be a collaborative effort among

several disciplines. Bennis' conclusions are indicative of the complexity of new theories of leadership as well as the burdens that future leaders may encounter, especially in the face of globalization and the increased reliance on the collaborative process. The research adds emphasis to this dilemma of complexity in that the intricate relationship between leadership behavioral style and organizational culture require more study with regard to interaction between components of style and culture, as evidenced by the lack of correlations observed.

Study results support past research in the area of leadership functionality and its relation to team culture. The study supports the concept that leadership factors such as leader techniques or behavioral style appear to have a limited link with team cultural profiles that develop in collaborative groups. This is evidenced by the results of Pennington (2001) and DeWald (2002) in that a limited number of correlations were observed between leader practices, team effectiveness, and the four Cameron and Quinn (1999) cultural types. The implication of both studies is that more research is needed to provide leaders with a better understanding of how their actions influence the cultural makeup of the teams they lead and in turn, the team's problem solving effectiveness.

#### *Societal Implications*

The issues facing collaborative leaders and their teams in the postmodern era are becoming more complex (LaFasto & Larson, 2001). Organizations in the public, private, and nonprofit sectors are increasingly confronted with issues that require external expertise and resources (Hafer, 2001). As a result, organizations are finding that problem solving may benefit from collaboration among organizations and people with diverse perspectives (LaFasto & Larson, 2001). Organizations and their leaders then, must

continue to develop knowledge regarding how to make collaboration more effective as a problem-solving tool (Lynn & Salzman, 2006) for any endeavor requiring a diverse range of perspectives, disciplines, and stakeholders such as in the medical, education, manufacturing, and natural resources management fields.

With regard to the focus of this study, water resources teams, ineffective or failed collaborations can be costly. Non-productive collaborations could mean that water resources issues facing society may not be effectively resolved (Connick, 2003). Therefore, leadership scholars and water resources leaders must gain an appreciation of how leader behavioral style relates to the developed culture of collaborative teams as a component of multi-organizational and multi-disciplined approaches used for solving water resources issues (Paul & McDaniel, 2004).

#### Recommendations for Future Research

This study represents an exploratory level of research regarding the understanding of leader behavioral style and its relationship of the culture of water resources collaborative teams. The results of the study open several conduits to future research by revealing new questions regarding these relationships and how they may impact the way a leader chooses to lead a collaborative team. Therefore, several methodological, approach, and analytical recommendations are presented for consideration in future replications, enhancements, or continuations of this study.

#### *Methodological Considerations*

Several methodological considerations are suggested. First, a larger sample of collaborative teams is recommended in future research. It is recognized that a greater number of sample teams or a larger number of degrees of freedom could have produced

different results. A larger sample could define correlations more succinctly. With Pearson correlation, larger sample sizes tend to cluster the data points more closely and provide definition to the results. Larger samples also provide more confidence in assessing the reliability of a correlation and whether it does or does not, exist (Triola, 2001; Statsoft, 2003). Thus, a primary recommendation resulting from this study is for future researchers to attempt to measure a larger sample of collaborative teams. In order to obtain a larger and more diverse sample of collaborations that meet the delimitations of a study such as this, it is suggested that future researchers solicit the endorsement of influential organizations in the water resources field that have an influence on several teams or team networks.

Professional organizations such as the American Water Resources Association, or NEMO could be an excellent venue for the solicitation of qualified participants or teams to participate in future collaborative team and leadership research. Although several team networking organizations and individual team leaders expressed enthusiasm for this study, a formal association or sponsorship with one or more of these organizations would have provided additional value. Second, future researchers should consider the inclusion of a survey of the team leaders, such as in a 360-degree survey format. Involving team leaders could give a more comprehensive picture of the relationship between leader behavior and team culture and could have an added benefit of influencing more team members to respond to study surveys.

Third, future researchers might consider duplicating the current study with regard to other fields of endeavor, such as the medical, law enforcement, or education fields, that regularly use collaborative teams to conduct business or resolve issues. Such research

could be expanded to include teams of various organizational structures. For example, future research might investigate the relationship between leadership behavior and team culture for teams with less diversity or in multi-disciplinary matrix teams of the same parent organization. Such research could enhance the understanding of the relative importance of these relationships across those structures (Wellman, 2007) and lend additional insight to the results of this study.

A final recommendation is that consideration be given to examining collaborative leadership behavior and culture outside the United States in the water resources or other fields. Other countries that use collaborative teams may provide comparable insights into how leader behavior and team culture vary between different nationally based cultures. Such a study could be used to determine the relationship between leader behavior and team culture in teams that are international in character.

The findings of Brodbeck et al. (2000) in their study of 22 different leadership cultures exemplify the applicability of these recommendations in that new knowledge of the constructs of leadership with a strong cultural component might provide new or different dimensions of leadership and leadership characteristics. Such knowledge could lead to innovative leadership approaches for the future management of diverse collaborative groups.

#### *Analytical Recommendations*

Several analytical recommendations are suggested, that if employed with the data collected for this study, might provide significant insights regarding the relationship between leader behavioral style and team culture. For example, studying the population of respondents with regard to their individual sectors or professional disciplines is a

logical next step to enhancing the understanding of study results. Since the research was based on team respondent data and not individual results, a study of the impact of an individual's demographic background on team results was not in its scope. Because the teams surveyed were selected based on their diverse nature (at least two economic sectors, personal expertise categories, or organizational expertise categories), these same teams could be reassessed regarding how the demographic background of each member may impact the perception of the team leader and team culture in follow-up research. Stronger use of the open-ended questions used in the LaFasto and Larson (1996) survey instrument may add value to this approach.

Such an analysis may provide additional insight regarding the impact of team diversity on the pattern of variable correlations observed in this effort while lending insight to the existing body of literature regarding the leadership of diverse teams and organizations. Impetus for this research is provided by the range in standard deviations observed between team unit response data and the data from individual respondents disaggregated from teams. This data is provided in Appendices K and M. For both behavioral style and cultural type, combined individual respondent standard deviations were nearly double, compared to the combined team scores for the 38 teams surveyed. Whether this is an influence of diversity and a contributor to the low correlations observed in this study are questions for future research. For example, a demographic based approach could provide a better understanding of how collaborative leaders may require unique team management, project management, and communication skills. Knowledge gained from this approach may also lead to insight regarding a leader's ability to communicate strategic value and provide long-term direction to effectively

manage the diverse nature and varying personal perceptions of their teams (Barczak, McDonough, & Athanassiou, 2006; Dreachslin, 2007) and their team members.

In addition, the use of different analytical techniques such as nonlinear regression analysis may also provide additional insight. The common assumption of general multiple regression analysis and Pearson product-moment scores obtained in this study was that linear algorithms related to the data sets of interest. However, this may not be the case in that nonlinear multiple regression analysis may reveal predictive relationships not visible in linear models.

A nonlinear model of the associations between variables may be able to describe relationships, in which a leader behavioral style dimension becomes increasingly curvilinear under certain cultural profiles. Such a relationship might be modeled by a third degree (cubic) polynomial relationship using demographic information. For example, if leaders' behavioral style dimensions became increasingly less important as team size or team diversity increased, a curvilinear model may be more appropriate. Other factors that might be considered in using a nonlinear model involve external factors such as the doctrine of water law that is prevalent where the team operates or the relationship between sub-issues such as water supply, water quality, and legal constraints.

#### Summary

Chapter 5 presented a discussion of the researcher's interpretation of the data collected concerning the relationship between collaborative leader behavioral style and team culture in teams addressing water resources issues. In this chapter, the disparity between team and individual correlation results were discussed with regard to implications on leadership of diverse teams, society, and future leadership research needs.



These implications were also elaborated upon with regard to their impact on collaborative water and natural resources management activities and with regard to collaborative efforts addressing other issues important to society. Recommendations were presented for expanding the present research through methodological, approach, and analytical enhancements, which could provide leadership scholars with new information for assessing this study's results.

With regard to the scholarly and social significance of this study, an important implication derived was that there may be a potential gap in the body of leadership and organizational knowledge regarding the relationship between a collaborative leader's behavioral style and its influence on team culture. The implication may indicate that leaders of diverse teams face a unique set of little understood challenges regarding how they can more effectively enhance the collaborative working arrangement for reaching a consensus. The lack of knowledge regarding these challenges provides impetus for the leadership and organizational management fields to conduct additional research.

## REFERENCES

- Agranoff, R. (2006). Inside collaborative networks: Ten lessons for public managers. *Public Administration Review*, 66, 56-65.
- Alm, A. L. (1988, January/February). NEPA: Past, present, and future. *EPA Journal*. Retrieved October 6, 2006, from <http://www.epa.gov/history/topics/nepa/01.htm>
- Adair, W. L., & Brett, J. M. (2005). The negotiation dance: Time, culture, and behavioral sequences in negotiation. *Organization Science*, 16(1), 33-51.
- Athanasaw, Y. A. (2003). Team characteristics and team member knowledge, skills, and ability relationships to the effectiveness of cross-functional teams in the public sector. *International Journal of Public Administration*, 26(10, 11), 1167-1205.
- Ayers, L. R., Beyea, S. C., Godfrey, M. M., Harper, D. C., Nelson, E. C., & Batalden, P. B. (2005). Quality improvement learning collaboratives. *Q Manage Health Care*, 14(4), 234-247.
- Barczak, G., McDonough, E. F., & Athanassiou, N. (2006). So you want to be a global project leader? *Research – Technology Management*, 49(3), 28-35.
- Barnard, C. I. (1938). The economy of incentives. In J. M. Shafritz, & J. S. Ott (Eds.), *Classics of organization theory* (pp. 93-102). Belmont, CA: Wadsworth Group/Thompson Learning.
- Bass, B. M. (1990). *Bass & Stogdill's handbook of leadership: Theory, research, and managerial applications* (3rd ed.). New York: The Free Press.
- Baviskar, A. (2004). Between micro-politics and administrative imperatives: Decentralisation and the watershed mission in Madhya Pradesh, India. *European Journal of Development Research*, 16(1), 26-40.

- Beatty, B. R., & Brew, C. R. (2004). Trusting relationships and emotional epistemologies: A foundational leadership issue. *School Leadership & Management, 24*(3), 329-356.
- Bennis, W. (2007). The challenges of leadership in the modern world. *American Psychologist, 62*(1), 2-5.
- Beyerlein, M. M., Freedman, S., McGee, C., & Moran, L. (2003). *Beyond teams: Building the collaborative organization*. San Francisco: Jossey-Bass/Pfeiffer.
- Beierle, T. C. (2004). The quality of stakeholder-based decisions. *Risk Analysis, 22*(4), 739-749.
- Blomquist, W., & Schlager, E. (2005). Political pitfalls of integrated watershed management. *Society and Natural Resources, 18*, 101-117.
- Bollman, N. P. (2004). The regional civic movement in California. *National Civic Review, 94*(3), 3-15.
- Boswell, C., & Cannon, S. (2005). New horizons for collaborative partnerships. *Online Journal of Issues in Nursing, 10*(1), p. 75-80.
- Bouwen, R., & Taillieu, T. (2004). Multi-party collaboration as social learning for interdependence: Developing relational knowing for sustainable natural resource management. *Journal of Community & Applied Social Psychology, 14*, 137-153.
- Bradley, M. (2007). Methods of research: correlation. Retrieved on June 28, 2007, from <http://faculty.frostburg.edu/mbradley/researchmethods.html#corr>
- Bray, N. J. (2003). Faculty perceptions of academic deans: Stakeholders, boundary-spanning, and social control. *Dissertation Abstracts International, A64/03*, 816.

- Brodbeck, F. et al. (2000). Cultural variation of leadership prototypes across 22 European countries. *Journal of Occupational & Organizational Psychology*, 73(1), 1-29.
- Brown, A. D., & Thornborrow, W. T. (1996). Do organizations get the followers they deserve? *Leadership & Organizational Development*, 17(1), 5.
- Brown, M. S., Ohlinger, J., Rusk, C., Delmore, P., & Ittmann, D. (2003). Implementing potentially better practices for multidisciplinary team building: Creating a neonatal intensive care unit culture of collaboration. *Pediatrics*, 111(4), 482-488.
- Bryan, T. A. (2004). Tragedy averted: The promise of collaboration. *Society and Natural Resources*, 17, 881-896.
- Bureau of Reclamation. (2006). Mission. Retrieved on February 6, 2006, from <http://www.usbr.gov/main/about/mission.html>
- Burns, P. A. (1997). Securing internal validity: How to avoid the threats. Retrieved on June 30, 2007, from <http://www.socialresearchmethods.net/tutorial/Burns/int.html#d>
- Cameron, K. S., & Quinn, R. E. (1999). *Diagnosing and changing organizational culture: Based on the competing values framework*. Reading, MA: Addison-Wesley Publishing Company, Inc.
- Cameron, W. (2004). Public accountability: Effectiveness, equity, ethics. *Australian Journal of Public Administration*, 63(4), 59-67.
- Capra, F. (1996). *The web of life: A new scientific understanding of living systems*. New York: Anchor Books.
- Carlson, D. S., & Kacmar, K. M. (1997). Perceptions of ethics across situations: A view through three different lenses. *Journal of Business Ethics*, 16(2), 147.

- Cavanaugh, N., & Cheney, K. S. (2002). Community collaboration – A weaving. *Journal of Public Health Management Practice*, 8(1), 13-20.
- Chambers, R., & Guiji, I. (1995). PRA five years later: Where are we now? *Forests, Trees, and People*, 26/27, 4-14.
- Chase, L. C., Decker, D. J., & Lauber, T. B. (2004). Public participation in wildlife management: What do stakeholders want? *Society and Natural Resources*, 17, 629-639.
- Checkland, P. (1989). Soft systems methodology. In Rosenhead, J. (Ed.). *Rational analysis for a problematic world: Structuring methods for complexity, uncertainty and conflict*. Chester, England: John Wiley & Sons, Ltd.
- Checkland, P. (1993). *Systems thinking, systems practice: A 30 year retrospective*. New York: John Wiley & Sons.
- Clayton, A. M. H., & Radcliffe, N. J. (1996). *Sustainability: A systems approach*. London: Earthscan Publication Ltd.
- Clegg, S. R., & Hardy, C. (2002). Conclusion: Representations. In S. R. Clegg, C. Hardy, and W. R. Nord (Eds.), *Handbook of Organization Studies* (Rev. ed., pp. 676-708). London: Sage.
- Clegg, S. R., Pitsis, T. S., Rura-Polley, T., & Marosszeky, M. (2002). Governmentality matters: Designing an alliance culture of inter-organizational collaboration for managing projects. *Organization Studies*, 23(3), 317-337.
- Collins, J. (2001). *Good to great: Why some companies make the leap . . . and others don't*. New York: HarperCollins Publishers, Inc.

- Connick, S. (2003). The use of collaborative processes in the making of California water policy: The San Francisco Estuary Project, the CALFED Bay-Delta Program, and the Sacramento Area Water Forum. *Dissertation Abstracts International, A 64/09*, 3506.
- Creamer, E. G. (2004). Collaborators attitudes about differences of opinion. *The Journal of Higher Education, 75*(5), 556-571.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Cronin, A., & Ostergren, D. M. (2007). Tribal watershed management: Culture, science, capacity, and collaboration. *American Indian Quarterly, 31*(1), 87-109.
- Crother-Laurin, C. (2006). Effective teams: A symptom of healthy leadership. *The Journal For Quality & Participation, 29*(3), 5-8.
- Dallal, G. E. (2003). Nonparametric statistics. Retrieved on October 7, 2006, from <http://www.tufts.edu/~gdallal/npar.htm>
- DeChurch, L. A. (2002). Teams leading teams: Examining the role of leadership in multi-team systems. *Dissertation Abstracts International, B 64/10*, 450.
- Demetropolis, G. J. (2006). Team leadership: A perspective of collaborative relationships in unexploded ordinance teams. *Dissertation Abstracts International, A 67/04*.
- DeWald, S. L. (2002). Collaborative leadership in law enforcement teams. *Dissertation Abstract International, A 63/04*, 1186.
- DiPalma, C. (2004). Power at work: Navigating hierarchies, teamwork and webs. *Journal of Medical Humanities, 25*(4), 291-308.

- Department of Interior. (2006). Building partnerships. Retrieved on August 26, 2006, from [http://www.doi.gov/partnerships/building\\_partnerships.html](http://www.doi.gov/partnerships/building_partnerships.html)
- Dolan, S. L., Garcia, S., & Auerbach, A. (2003). Understanding and managing chaos in organizations. *International Journal of Management*, 20(1), 23.
- Dreachslin, J. L. (2007). The role of leadership in creating a diversity-sensitive organization. *Journal of Healthcare Management*, 52(3), 151-155.
- Drake, J. M., & Bossenbroek, J. M. (2004). The potential distribution of zebra mussels in the United States. *Bioscience*, 54(10), 931-941.
- Duemer, L. S., Christopher, M., Hardin, F., Olibas, L., Rodgers, T., & Spiller, K. (2004). Case study of characteristics of effective leadership in graduate student collaborative work. *Education*, 124(4), 721-726.
- Dyck, R. G. (2004). The end of neo-liberalism and the beginnings of integral economics. *World Futures*, 60, 311-317.
- Environmental Protection Agency. (2006a, March). National Environmental Policy Act (NEPA). Retrieved on October 8, 2006, from <http://www.epa.gov/compliance/basics/nepa.html#requirement>
- Environmental Protection Agency. (2006b). Water. Retrieved September 5, 2006, from <http://www.epa.gov/ebtpages/water.html>
- Environmental Protection Agency. (2006c). Mission. Retrieved February 9, 2006, from <http://www.epa.gov/epahome/aboutepa.htm#mission>
- Environmental Protection Agency. (2006d). Watershed Analysis Risk Management Framework (WARMF) – Public release version 6.1. Retrieved February 11, 2006, from <http://www.epa.gov/athens/wwqtsc/html/warmf.html>

- Environmental Protection Agency. (2007). Surf your watershed. Retrieved July 2, 2007, from <http://cfpub.epa.gov/surf/locate/index.cfm>
- Fayol, H. (1916). General principles of management. In J. M. Shafritz, & J. S. Ott (Eds.), *Classics of organization theory* (pp. 48-60). Belmont, CA: Wadsworth Group/Thompson Learning.
- Follet, M. P. (1926). The giving of orders. In J. M. Shafritz & J. S. Ott (Eds.), *Classics of organization theory* (pp. 37-41). Belmont, CA: Wadsworth Group/Thompson Learning.
- Feldman, M. S., Khademian, A. M., Ingram, H., & Schneider, A. S. (2006). Ways of knowing and inclusive management practices. *Public Administration Review*, 66, 89-99.
- Fung, A. (2006). Varieties of participation in complex governance. *Public Administration Review, Special Issue*, 66-75.
- Goleman, D., Boyatzis, R., & McKee, A. (2002). *Primal leadership: Realizing the power of emotional intelligence*. Boston, Harvard Business School Press.
- Goldstein, M. (2005, July). Building “speak-up” in corporations. *T+D*, 37-42.
- Gulick, L. (1937). Notes on theory of organization. In J. M. Shafritz, & J. S. Ott (Eds.), *Classics of organization theory* (pp. 79-87). Belmont, CA: Wadsworth Group/Thompson Learning.
- Hackney, N. L. (2004). Leadership: I am in charge . . . beliefs and actions of leaders aboard U.S. Navy ships. *Dissertation Abstracts International*, A65/05, 1859.
- Hafer, M. L. A. (2001). Landscape-scale collaborative management efforts and their implications for forestry. *Dissertation Abstracts International*, B61/10, 4296.



- Haire, C. M., & Dodson-Pennington, L. S. (2002). Taking the road less traveled: A journey in collaborative resource development. *Community College Journal of Research and Practice*, 26, 61-75.
- Hall, P., & Densten, I. L. (2002). Following successfully: Followership and technology adoption. *Prometheus*, 20(2), 87-105.
- Harrison, R., & Stokes, H. (1993). *Diagnosing Organizational Culture*. San Diego, CA: Pfeiffer & Company.
- Hatch, M. (1997). *Organization theory: Modern symbolic and postmodern perspectives*. New York: Oxford.
- Hoegl, M., Weinkauff, K., & Gemuenden, H. G. (2004). Interteam coordination. Project commitment, and teamwork in multiteam R&D projects. *Organization Science*, 15(1), 38-55.
- Hosmer, L. T. (2003). *The ethics of management*. New York: McGraw-Hill Irwin.
- Howe, P. E. (2005, Winter). Using the team to succeed. *Pennsylvania CPA Journal*. Retrieved May 21, 2006, from [http://www.picpa.org/asp/Journal/journal\\_article\\_details.asp?action=Normal&ID=1182](http://www.picpa.org/asp/Journal/journal_article_details.asp?action=Normal&ID=1182)
- Huxham, C., & Vangen, S. (2000). Leadership in the shaping and implementation of collaboration agendas: How things happen in a (not quite) joined-up world. *Academy of Management Journal*, 43(6), 1159-1175.
- Inkpen, A. C., & Curral, S. C., (2004). The coevolution of trust, control, and learning in joint ventures. *Organization Science*, 15(5), 586-599.
- Innes, J. E., & Booher, D. E. (2004). Reframing public participation: Strategies for the 21st century. *Planning Theory & Practice*, 5(4), 419-436.

- Jamal, T. (2004). Conflict in natural area destination: A critique of representation and 'interest' in participatory processes. *Tourism Geographies*, 6(3), 352-379.
- Johnson, H. A. (2007). Managing collaborations of engineering management with academia and government in triple helix technology development projects: A case example of precarn from the intelligent systems sector. *Engineering Management Journal*, 19(2), 12-22.
- Johnson, S. E., & Graber, B. E. (2002). Enlisting the social sciences in decisions about dam removal. *Bioscience*, 52(8), 731-737.
- Joyce, P. (2004). The role of leadership in the turnaround of a local authority. *Public Money & Management*, 24(4), 235-242.
- Kezar, A. (2005, November/December). Moving from I to we: Reorganizing for collaboration in higher education. *Change*, 50-57.
- Kiltz, G., Danzig, A., & Szecsy, E. (2004). Learner-centered leadership: A mentoring model for the professional development of school administrators. *Mentoring and Tutoring*, 12(4), 135-153.
- Koontz, T. M. (2005). We Finished the Plan, So Now What? Impacts of Collaborative Stakeholder Participation on Land Use Policy. *Policy Studies Journal*, 33(3), 459-481.
- Koutsyiannis, D., Efstratiadis, A., & Karavokiros, G. (2002). A decision support tool for the management of multi-reservoir systems. *Journal of the American Water Resources Association*, 38(4), 945-958.
- Kuo, C. (2004). Research of impact of team leadership on team effectiveness. *Journal of American Academy of Business*, 5(1/2), 266-277.

- Kwak, N., & Radler, B. (2002). A comparison between mail and web surveys: Response Pattern, respondent profile, and data quality. *Journal of Official Statistics, 18*(2), 257-273.
- LaFasto, F. M., & Larson, C. E. (1996). The collaborative team leader (survey): Team leader version and team member version. In F. LaFasto & C. Larson, *When teams work best: 6,000 team members tell what it takes to succeed*. (pp. 151-154). Thousand Oaks, CA: Sage Publications, Inc.
- LaFasto, F. M., & Larson, C. E. (2001). *When teams work best: 6,000 team members tell what it takes to succeed*. Thousand Oaks, CA: Sage Publications, Inc.
- Lancaster, G. A., Dodd, S., & Williamson, P. R. (2004). Design and analysis of pilot studies: Recommendations for good practice. *Journal of Evaluation in Clinical Practice, 10*, 307-312.
- Landry, C. J., & Phoenix, L. E. (2003). Overview: Forging new rights to water. *Water Resources IMPACT, 5*(2), 3-4.
- Larson, C. E., & LaFasto, F. M. (1991). *Teamwork: What must to right/what can go wrong*. NewBury Park, CA: Sage Publications, Inc.
- Lasker, R. D., & Weiss, E. S. (2003, Summer). Creating partnership synergy: The critical role of community stakeholders. *Journal of Health & Human Services Administration, 119*-139.
- Layzer, J. A. (2002). Citizen participation and government choice in local environmental controversies. *Policy Studies Journal, 30*(2), 193-207.

- Leach, W. D. (2000). Evaluating watershed partnerships in California: Theoretical and methodological perspectives. *Dissertation Abstracts International*, A61/12, 4945, UMI number 9997379.
- Leach, W. D. (2006). Collaborative public management and democracy: Evidence from western watershed partnerships. *Public Administration Review*, 66, 100-110.
- Leach, W. D., & Sabatier, P. A. (2005). To trust an adversary: Integrating rational and psychological models of collaborative policymaking. *American Political Science Review*, 99(4), 491-503.
- Leach, S., & Wilson, D. (2002). Rethinking local political leadership. *Public Administration*, 80(4), 665-689.
- Leedy, P. D., & Ormrod, J. E. (2001). *Practical research: Planning and design* (7th ed.). Upper Saddle River, NJ: Merrill Prentice Hall.
- Lele, S., & Norgaard, R. B. (2005). Practicing interdisciplinarity. *Bioscience*, 55(11), 967-975.
- Li, X., Zhou, X., & Ruan, X. (2002). Conflict management in closely coupled collaborative design system. *International Journal of Integrated Manufacturing*, 15(4), 345-352.
- Liang, T. Y. (2004). Intelligence strategy: The integrated 3C-OK framework of intelligent human organizations. *Human System Management*, 23, 203-211.
- Looman, M. D. (2003). Reflective leadership: Strategic planning from the heart and soul. *Consulting Psychology Journal*, 55(4), 215-221.
- Loranger, S. (2005). Global water management. *Vital Speeches of the Day*, 71(11), 325-331.

- Low, S., & Randhir, T. (2005). Watershed management, structural characteristics, information processing, and cooperative strategies in conservation organizations. *Journal of Soil and Water Conservation*, 60(6), 281-287.
- Lussier, R. N., & Achua, C. F. (2004). *Leadership: Theory application, skill development*. Independence, KY: Thomson South-Western.
- Lynn, L., & Salzman, H. (2006, Winter). Collaborative advantage. *Issues in Science & Technology*, 74-82.
- MacVaugh, T. W. (2007). Complex organizational issues require complex action (i.e., no director of materials management is an island). *Hospital Materials Management*, 32(4), 12.
- Manfreda, K. L., Bosnjak, M., Berzelak, J., Haas, I., & Vehovar, V. (2008). Web surveys versus other survey modes: A meta-analysis comparing response rates. *International Journal of Market Research*, 50(1), 79-109.
- Margerum, R. D., & Whittall, D. (2004). The challenges and implications of collaborative management on a river basin scale. *Journal of Environmental Planning and Management*, 47(3), 407-427.
- Marino, J. J. (2007). A new paradigm for organizational change: Involving customers and stakeholders in the improvement process. *The Journal for Quality & Participation*, 30(1), 10-12.
- Marrone, V. (2005). Interorganizational collaboration: A comparative case study of credit union shared branching. *Dissertation Abstracts International*. 66/07, 2638, UMI Number 3183893.

- Massachusetts Institute of Technology & U.S. Geological Survey. (2005). What is music? Retrieved July 22, 2005, from <http://web.mit.edu/dusp/epg/music/index.html>
- Maccoby, M. (2006). Creating collaboration. *Research – Technology Management*, 49(6), 60-62.
- McCabe, S. E. (2004). Comparison of web and mail surveys in collecting illicit drug use data: A randomized experiment. *Journal of Drug Education*, 34(1), 61-72.
- McGuire, M. (2006). Collaborative public management: Assessing what we know and how we know it. *Public Administration Review*, 66, 33-43.
- Mehan, T. (2007). Guest editorial: Imperative of integrated water resources management. *Waterworld*, 23(1), 4-22.
- Meinzen-Dick, R. S., & Bruns, B. R. (2003). Negotiating transitions in water rights. *Water Resources IMPACT*, 5(3), 22-24.
- Moore, E. A., & Koontz, T. M. (2003). A typology of collaborative watershed groups: Citizen-based, agency-based, and mixed partnerships. *Society and Natural Resources*, 16, 451-460.
- Morgan, G. (1998). *Images of organization: The executive edition*. San Francisco, CA: Berrett-Koehler Publishers.
- Moritz, T. D. (2004). Conservation partnerships in the commons? Sharing data and information, experience and knowledge, as the essence of partnerships. *Museum International*, 56(4), 24-31.

- Mortehan, O. (2004). The role of firms' collaborative agreements in the information technology industry transformation. *Technology Analysis & Strategic Management, 16*(1), 53-71.
- Nardi, P. M. (2003). *Doing survey research: A guide to quantitative methods*. Saddle River: Pearson Education, Inc.
- Nicola, R. M. (2005). Turning Point's National Excellence Collaboratives: Assessing a new model for policy and system capacity development. *Journal of Public Health Management Practice, 11*(2), 101-108.
- Nissen, L. B., Merrigan, D. M., & Kraft, M. K. (2005). Moving mountains together: Strategic community leadership and systems change. *Child Welfare, 84*(2), 123-140.
- Northouse, P. G. (2001). *Leadership theory and practice* (2nd ed.) Thousand Oaks, CA: Sage.
- Norton, G. (2005, August 29). *Keynote speech*. Remarks prepared for delivery by the Honorable Gale Norton, Secretary of the Interior for the 2005 Cooperative Conservation Conference. Retrieved on November 24, 2005, from [http://www.doi.gov/news/05\\_News\\_Releases/050916speech.htm](http://www.doi.gov/news/05_News_Releases/050916speech.htm)
- Ostrom, E., Stern, P. C., & Dietz, T. (2003). Water rights in the commons. *Water Resources IMPACT, 5*(2), 9-12.
- Outhwaite, S. (2003). The importance of leadership in the development of an integrated team. *Journal of Nursing Management, 11*, 371-376.
- Parker, G. (2003). Leading a team of strangers: most teams are now diverse or virtual. *T & D, 57*(2), 21-24.

- Paul, D. L., & McDaniel, R. R. (2004). A field study of the effect of interpersonal trust on virtual collaborative relationship performance, *MIS Quarterly*, 28(2), 183-227.
- Pearson, C. S., & Hammer, A. L. (2004). *Organization and Team Culture Indicator*. Gainesville, FL: Center for Applications of Psychological Type.
- Pennington, P. L. (2001). Leadership factors influencing team culture. *Dissertation Abstracts International*. 62/07, 2317, UMI Number 3020107.
- Perrow, C. (1986). *Complex organizations: A critical essay*. New York: McGraw Hill.
- Pike, W., Yarnal, B., Maceachren, A. M., Gahegan, M., & Yu, C. (2005). Retooling collaboration: A vision for environmental change research, *Environment*, 47(2), 8-21.
- Purnomo, H., Mendoza, G. A., & Prabhu, R. (2004). Model for collaborative planning of community managed resources based on qualitative soft system approach. *Journal of Tropical Forest Science*, 16(1), 106-131.
- Reed, M. (2002). Organizational theorizing: a historically contested terrain. In S. R. Clegg, C. Hardy, and W. R. Nord (Eds.), *Handbook of Organization Studies* (Rev. ed., pp. 31-56). London: Sage.
- Rickenbach, M. G. (2000). Watershed councils and woodland owners: The Oregon experience. *Dissertation Abstracts International*, B61/02, 612.
- Roethlisberger, F. J. (1941). The Hawthorne experiments. In J. M. Shafritz & J. S. Ott (Eds.), *Classics of organization theory* (pp. 37-41). Belmont, CA: Wadsworth Group/Thompson Learning.
- Salkind, N. J. (2003). *Exploring Research* (5th ed.). Upper Saddle River, NJ: Prentice Hall.



- Santos, J. R. A. (1999, April). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of Extension*, 37(2), para. 8. Retrieved October 18, 2006 from <http://joe.org/joe/1999april/tt3.html>
- Sanwal, M. (2004). Trends in global environmental governance: The emergence of a mutual supportiveness approach to achieve sustainable development. *Global Environmental Politics*, 4(4), 16-22.
- Sashkin, M. (1996). *Leader Behavior Questionnaire* (Revised). Amhearst, MA: Human Resource Development Press.
- Schein, E. H. (1992). *Organizational culture and leadership* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Schulte, A. C., & Osborne, S. S. (2003). When assumptive worlds collide: A review of definitions of collaboration in consultation. *Journal of Educational and Psychological Consultation*, 14, 109-138.
- Selznick, P. (1948). Foundations of the theory of organization. In J. M. Shafritz & J. S. Ott (Eds.), *Classics of organization theory* (pp. 125-134). Belmont, CA: Wadsworth Group/Thompson Learning.
- Senge, P. M. (1994). *The fifth discipline: The art and practice of the learning organization*. New York: Currency/Doubleday.
- Shaw, M. M. (2003). Successful collaboration between the nonprofit and public sectors. *Nonprofit Management & Leadership*, 14(1), 107-120.
- Sherk, G. W. (2003). East meets west: A tale of two water doctrines. *Water Resources IMPACT*, 5(2), 5-8.

- Simon, H. A. (1946). The proverbs of administration. In J. M. Shafritz & J. S. Ott (Eds.), *Classics of organization theory* (pp. 112-124). Belmont, CA: Wadsworth Group/Thompson Learning.
- Simon, M. K., & Francis, J. B. (2001). *The dissertation and research cookbook: From soup to nuts* (3rd ed.). Dubuque, IA: Kendall/Hunt.
- Smith, A. (1776). Of the division of labor. In J. M. Shafritz & J. S. Ott (Eds.), *Classics of organization theory* (pp. 37-41). Belmont, CA: Wadsworth Group/Thompson Learning.
- Smith, T. (2003). Native American water rights. *Water Resources IMPACT*, 5(2), 16-18.
- Straus, D., & Milton, P. (2003). Collaborative decision making. *T & D*, 57(7), 70-72.
- Statsoft, (2003). Basic statistics. Retrieved on January 23, 2008, from <http://www.statsoft.com/textbook/stbasic.html>
- Taylor, F. W. (1916). The principles of scientific management. In J. M. Shafritz & J. S. Ott (Eds.), *Classics of organization theory* (pp. 61-72). Belmont, CA: Wadsworth Group/Thompson Learning.
- Thompson, J. G., & Reynolds, R., Jr. (2002). Cultural evolution and water management in the Salinas River Valley. *Journal of the American Water Resources Association*, 38(6), 1661-1677.
- Townsend, P., & Gebhardt, J. E. (1997). For service to work right, leaders need skills in “followership.” *Managing Service Quality*, 7(3), 136.
- Townsend, P. (2002, Spring). *Fitting teamwork into the grand scheme of things*. Association for Quality & Participation.

- Training House, Inc. (1991). *Profile of Aptitude of Leadership*. Princeton, NJ: Training House, Inc.
- Trice, H. M., & Beyer, J. M. (1993). *The cultures of work organizations*. Upper Saddle River, NJ: Prentice Hall.
- Triola, M. F. (2001). *Elementary Statistics* (8th ed.). Addison-Wesley.
- Trochim, M. K. (2006). Introduction to validity. Retrieved on June 30, 2007, from <http://www.socialresearchmethods.net/kb/introval.php>
- U.S. Fish and Wildlife Service. (2005). Mission. Retrieved February 10, 2006, from <http://www.fws.gov>
- United Nations. (2005). *Investing in development: A practical plan to achieve millennium goals*. New York: The UN Millennium Project.
- University of Connecticut. (2007). National NEMO Network. Retrieved July 7, 2007, from [http://nemonet.uconn.edu/about\\_network/about.htm](http://nemonet.uconn.edu/about_network/about.htm)
- Van Putten, M. (2005). Rebuilding a mainstream consensus for environmentalism. *BioScience*, 55(6), 468-469.
- van Teijlingen, E. R., Rennie, A. M., Hundley, V., & Graham, W. (2001). The importance of conducting and reporting pilot studies: The example of the Scottish births survey. *Journal of Advanced Nursing*, 34, 289-295.
- Vangen, S., & Huxham, C. (2003). Enacting leadership for collaborative advantage: Dilemmas of ideology and pragmatism in the activities of partnership managers. *British Journal of Management*, 14, S61-S76.

- Videira, N., Antunes, P., Santos, R., & Gamito, S. (2003). Participatory modeling in environmental decision-making: The Ria Formosa Natural Park case study. *Journal of Environmental Assessment Policy and Management*, 5(3), 421-447.
- Wade, R. J., Rhodes, B. L., Rodriguez, J., Daniels, M., Wilson, D., Herricks, E. E. et al. (2002). Integrating science and technology to support stream naturalization near Chicago, Illinois. *Journal of the American Water Resources Association*, 38(4), 931-944.
- Walck, C. (2004). Healing the divided mind: Land as an integrating concept for organizations and natural environment. *Organization & Environment*, 17(2), 170.
- Walker, P. A., & Hurley, P. T. (2004). Collaboration derailed: The politics of “community based” resource management in Nevada County. *Society and Natural Resources*, 17, 735-751.
- Walsh, K. R., & Pawlowski, S. D. (2003-2004, Winter). Collaborative visualization: Integrative opportunities. *Journal of Computer Information Systems*, 58-64.
- Weber, M. (1922). Bureaucracy. In J. M. Shafritz & J. S. Ott (Eds.), *Classics of organization theory* (pp. 73-78). Belmont, CA: Wadsworth Group/Thompson Learning.
- Wellman, J. (2007). Leadership behaviors in matrix environments. *Project Management Journal*, 38(2), 62-74.
- Wilson, J. L. (2002). Leadership development: Working together to enhance collaboration. *Journal of Public Health Management Practice*, 8(1), 21-26.

- Witter, J. V., van Stokkom, H. T. C., & Hendriksen, G. (2006, Spring). From river management to river basin management: A water manager's perspective. *Hydrobiologia*, 565, 317–325.
- Wren, J. T. (1995). *The leader's companion: Insights on leadership through the ages*. New York: The Free Press.
- Yoder, D. M. (2005). Organizational climate and emotional intelligence: an appreciated inquiry into a "leaderful" community college. *Community College Journal of Research and Practice*, 29, 45-62.

APPENDIX A: THE COLLABORATIVE TEAM LEADER INSTRUMENT

## Collaborative Team Leader Instrument

### Team Member Survey (LaFasto & Larson, 1996)

**Team Member Instructions:** Answer each question in terms of how you assess your collaboration's primary leader.

<b>I. Focus on the Goal</b>				
True	More True than False	More False than True	False	
				1. Our team leader clearly defines our goal.
				2. Our team leader articulates our goal in such a way as to inspire commitment.
				3. Our team leader avoids compromising the team's objective with political issues.
				4. Our team leader helps individual team members align their roles and responsibilities with the team goal.
				5. Our team leader reinforces the goal in fresh and exciting ways.
				6. If it is necessary to adjust the team's goal, our team leader makes sure the team understands why.
<b>II. Ensure a Collaborative Climate</b>				
True	More True than False	More False than True	False	
				7. Our team leader creates a safe climate for team members to openly and supportively discuss any issue related to the team's success.
				8. Our team leader communicates openly and honestly.

9. There are no issues that our team leader is uncomfortable discussing with the team.
10. There are no chronic problems within our team that we are unable to resolve.
11. Our team leader does not tolerate a noncollaborative style by team members.
12. Our team leader acknowledges and rewards the behaviors that contribute to an open and supportive team climate.
13. Our team leader creates a work environment that promotes productive problem solving.
14. Our team leader does not allow organization structure, systems, and processes to interfere with the achievement of our team's goal.
15. Our team leader manages his/her personal control needs.
16. Our team leader does not allow his/her ego to get in the way.

<b>III. Build Confidence</b>			
True	More True than False	More False than True	False
			17. Our team leader ensures that our team achieves results.
			18. Our team leader helps strengthen the self-confidence of team members.
			19. Our team leader makes sure team members are clear about critical issues.



20. Our team leader exhibits trust by giving team members meaningful levels of responsibility.

21. Our team leader is fair and impartial toward all team members.

22. Our team leader is an optimistic person who focuses on opportunities.

23. Our team leader looks for and acknowledges contributions by team members.

#### IV. Demonstrate Sufficient Technical Know-How

True	More True than False	More False than True	False	
				24. Our team leader understands the technical issues we must face in achieving our goal.
				25. Our team leader has had sufficient experience with the technical aspects of our team's goal.
				26. Our team leader is open to technical advice from team members who are more knowledgeable.
				27. Our team leader is capable of helping the team analyze complex issues related to our goal.
				28. Our team leader is seen as credible and knowledgeable by people outside our team.

#### V. Set Priorities

True	More True than False	More False than True	False	
				29. Our team leader keeps the team focused on a manageable set of priorities.

30. Our team leader and the members of our team agree on the top priorities for achieving our goal.
31. Our team leader communicates and reinforces a focus on priorities.
32. Our team leader does not dilute the team's effort with too many priorities.
33. If it is necessary to change priorities our team leader makes sure the team understands why.

<b>VI. Manage Performance</b>			
True	More True than False	More False than True	False
			34. Our team leader makes performance expectations clear.
			35. Our team leader encourages the team to agree upon a set of values that guides our performance.
			36. Our team leader ensures that rewards and incentives are aligned with achieving our team's goal.
			37. Our team leader assessed the collaborative skills of team members as well as the results they achieve.
			38. Our team leader gives useful, developmental feedback to team members.
			39. Our team leader is willing to confront and resolve issues associated with inadequate performance by team members.
			40. Our team leader recognizes and rewards superior performance.

41. What are the strengths of the team leader?

---

42. What one or two changes are most likely to improve the effectiveness of the team leader?

---

APPENDIX B: ORGANIZATIONAL CULTURAL ASSESSMENT INSTRUMENT

### The Organizational Culture Assessment Instrument (Cameron and Quinn, 1999).

**Team Member Instructions:** This portion of the survey consists of six categories of measurement. Each category has four alternatives. Divide 100 points among these four alternatives depending on the extent to which each alternative is similar to the collaborative team you lead. Give a higher number of points to the alternative that is most similar to your collaborative team. For example, for category 1, if you think alternative A is very similar to your collaborative team, alternatives B and C are somewhat similar, and alternative D is hardly similar at all, you might give 55 points to A, 20 points to each B and C and 5 points to D. Just be sure your total equals 100 for each category.

Please answer the question in reference to the characteristics of your entire collaborative team.

<b>1. Dominant Characteristics</b>		
<b>A</b>	The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	
<b>B</b>	The organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.	
<b>C</b>	The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	
<b>D</b>	The organization is a very controlled and structured place. Formal procedures generally govern what people do.	
	Total	100
<b>2. Organizational Leadership</b>		
<b>A</b>	The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	
<b>B</b>	The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.	
<b>C</b>	The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results oriented focus.	
<b>D</b>	The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	

		Total	100
<b>3. Management of Employees (Team Members)</b>			
<b>A</b>	The management style in the organization is characterized by organizationwork, consensus, and participation.		
<b>B</b>	The management style in the organization is characterized by individual risk taking, innovation, freedom, and uniqueness.		
<b>C</b>	The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.		
<b>D</b>	The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.		
		Total	100
<b>4. Organizational Glue</b>			
<b>A</b>	The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.		
<b>B</b>	The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.		
<b>C</b>	The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.		
<b>D</b>	The glue that holds the organization together is formal rules and policies. Maintaining a smooth running organization is important.		
		Total	100
<b>5. Strategic Emphasis</b>			
<b>A</b>	The organization emphasizes human development. High trust, openness, and participation persist.		
<b>B</b>	The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.		
<b>C</b>	The organization emphasizes competitive actions and achievement.		

	Hitting stretch targets and winning in the marketplace are dominant.	
<b>D</b>	The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.	
	Total	100
<b>6. Criteria for Success</b>		
<b>A</b>	The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	
<b>B</b>	The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	
<b>C</b>	The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	
<b>D</b>	The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low cost production are critical.	
	Total	100

APPENDIX C: DEMOGRAPHIC QUESTIONNAIRE



## Demographic Information Questionnaire

This survey is designed to collect general background information from team members that are currently involved in water resources collaborative efforts.

### **Instructions:**

For each question, please fill in the circle by the chosen answer. Select only one answer for each question.

1. What sector do you or your organization represent?

- Public sector (including Tribal government)
- Private sector
- Nonprofit sector
- Private citizen – not affiliated with an organization.

2. What is your personal professional category of expertise?

- Engineering or natural sciences
- Social sciences
- Research
- Environment or Natural Resources
- Administration
- Education
- Medicine and medical management
- Agriculture
- Defense/military
- Legal
- Transportation
- Community planning
- Communications
- Information Technology
- Religious or cultural
- Human Resources
- Consumer oriented (commercial)
- Financial/investment
- Policy or political (international, domestic or local)
- My participation is based on personal interests.
- Other (describe): \_\_\_\_\_

3. If you represent an organization, what is its category of expertise?

- Engineering or natural sciences
- Social sciences
- Research
- Environment or Natural Resources
- Education
- Medicine and medical management
- Agriculture
- Defense/military
- Legal
- Transportation
- Community planning
- Communications
- Information Technology
- Religious or cultural
- Human Resources
- Consumer oriented (commercial)
- Financial/investment
- Policy (international, domestic or local)
- Administration or regulatory
- I do not represent an organization
- Other (describe): \_\_\_\_\_

APPENDIX D: PERMISSIONS

Carl E. Larson  
10000 E. Yale Ave, #11  
Denver, CO 80231  
(720) 747-4720  
clarson@du.edu

July 10, 2006

Mr. Thomas Bellinger  
1389 S. Brentwood Way  
Lakewood, CO 80232

Dear Mr. Bellinger:

You have my permission to use the Collaborative Team Leader instrument in your dissertation research. Best wishes on your project, and please let me know what you discover.

Sincerely,



Carl Larson



THE UNIVERSITY OF MICHIGAN  
SCHOOL OF BUSINESS ADMINISTRATION  
ANN ARBOR, MICHIGAN 48109-1234

12 July 2006


Thomas Bellinger  
1389 S Brentwood Way  
Lakewood, CO 80232

Dear Thomas:

You have permission to use the following materials in your doctoral dissertation research:

The Organizational Culture Assessment Instrument (OCAI)  
Figures 3.1, 4.1, 4.3, and A5.2 in Diagnosing and Changing Organizational Culture

Best wishes in your project.

  
Kim Cameron  
Professor  
Ross School of Business

APPENDIX E: SURVEY INSTRUCTIONS AND INFORMED CONSENT

## CONSENT TO ACT AS A RESEARCH SUBJECT AND SURVEY INSTRUCTIONS

ONLINE VERSION\*

### **The Relationship Between Leader Behavioral Style and Team Cultural Type in Water Resources Collaborations A Study in Collaborative Leadership**

The purpose of this study is to determine the relationship between collaborative leader behavioral style and team culture for a sample of water resources collaborations. The study will use two validated survey instruments to measure behavioral style and team culture as well as a demographic questionnaire to determine selected teams' fit with study criteria. The study will potentially provide collaborative water resources leaders with a means of assessing how their behavioral style relates to the cultural type of the collaborative teams they lead.

This survey is formatted in four parts:

1. Granting of consent to participate in the study (see below).
2. A survey of collaborative team leader behavioral style.
3. A survey of collaborative team cultural character.
4. A demographic survey of each participating team.

Please read the instructions for each part of the survey before responding.

Thank you for your participation.

-----

#### CONSENT TO ACT AS A RESEARCH SUBJECT

##### Instructions

To complete the consent process use the following procedure:

1. Read the consent authorization below.
2. If you do not want to participate. Log off this Website.
3. If you agree to participate, click the "Begin Survey" button.
4. Upon entry to the survey, you may be asked to enter your respondent ID (supplied to you in your invitation email or through your team leader).
5. After entering your ID (if required), click "Submit." The survey will then require you to confirm your acceptance of the conditions listed below by selecting "I accept" (to signify your willingness to participate in the study). If you decline to participate, select "I decline" and you will automatically be logged off the survey.

-----

#### Statement of Consent and Conditions

Thomas Bellinger, a Doctoral Candidate at the University of Phoenix and an independent

researcher, has been given permission by my Team Leader to conduct a research study on the relationship between team leader behavioral style and team culture for my collaborative team.

Conditions:

As a team member of my collaborative team, I have volunteered to participate in this research study. My participation is entirely voluntary and my participation or non-participation will not be reported to the team or project staff. I understand that:

1. I must be 18 years old to participate in the study.
2. My participation in the study is voluntary.
3. I may refuse to participate without any penalty or consequences to my employment or team participation.
4. I may withdraw from the study at any time without any penalty or consequences to my employment or team participation.
5. Research records and lists of survey respondents will be confidential.
6. Personal anonymity will be guaranteed.
7. Results of the research will be used for presentations or publications.
8. As the data is presented, I can choose to be identified as the source of that information for group discussion purposes.
9. I will not copy or keep instruments used in this study, as they are secured by copyright.

I fully understand the nature of the study, the potential risks of participation, the potential benefits of participation, and the confidentiality procedures that will be employed.

This study has been explained to me and all my questions have been answered. If I have any questions or research related issues, I will contact the researcher (Thomas Bellinger) through the contact information listed below.

There are no other agreements, written or verbal, related to this study beyond that expressed in this consent and confidentiality statement. I understand the above explanation and I give my consent to my voluntary participation in this research.

If you need assistance or have questions while taking this survey, please contact:  
 Thomas Bellinger  
[tbellinger@email.uophx.edu](mailto:tbellinger@email.uophx.edu)  
 303 XXX-XXXX

Begin Survey

\* Note: Parts 2, 3, and 4 contain the LaFasto and Larson (1996), Cameron and Quinn (1999) and Demographic questions presented in Appendices A, B, and C respectively.



## CONSENT TO ACT AS A RESEARCH SUBJECT AND SURVEY INSTRUCTIONS

### MAIL OUT VERSION\*

#### Water Resources Collaboration – Mail-In Team Survey Instructions to Participant

To complete this survey please use the following procedure:

1. Read the consent information below.
2. If you agree with the consent information, complete the enclosed survey forms and review your answers (completion time – approximately 20 minutes). *Please answer all questions.*
3. Return this entire survey packet using the provided postage paid envelope.

*Thank you for your participation!*

#### Part 1 of 4: Consent to Act as a Research Subject\*

##### Introduction

Thomas Bellinger, a Doctoral Candidate at the University of Phoenix and an independent researcher, has been given permission by my Team Leader to conduct a research study on the relationship between collaborative team leader behavioral style and team culture type for my collaborative team.

##### Participant Consent

I have volunteered to participate in this research study. My participation is entirely voluntary and my participation or non-participation will not be reported to the team or project staff. I understand that

1. I must be 18 years old to participate in the study.
2. My participation in the study is voluntary.
3. I may refuse to participate without any penalty or consequences to my employment or team participation.
4. I may withdraw from the study at any time without any penalty or consequences to my employment or team participation.
5. Research records and lists of survey respondents will be confidential.
6. Personal anonymity will be guaranteed.
7. Results of the research will be used for presentations or publications.
8. As the data is presented, I can choose to be identified as the source of that information for group discussion purposes.
9. I will not copy or keep instruments used in this study, as they are secured by copyright.

I fully understand the nature of the study, the potential risks of participation, the potential benefits of participation, and the confidentiality procedures that will be employed.

This study has been explained to me and all my questions have been answered. If I any questions or research related issues, I can contact the researcher (Thomas Bellinger) at (303) 594-0435 or [tbellinger@email.uophx.edu](mailto:tbellinger@email.uophx.edu).

There are no other agreements, written or verbal, related to this study beyond that expressed in this consent and confidentiality statement. I understand the above explanation, and I give consent to my voluntary participation in this research.

By completing this survey, I acknowledge that I understand the nature of the study, the potential risks to me as a participant, and the means by which my identity will be kept confidential. Completion of the survey also indicates that I am 18 years old or older and that I give my permission to voluntarily serve as a participant in the study.

\* Note: Parts 2, 3, and 4 contain the LaFasto and Larson (1996), Cameron and Quinn (1999) and Demographic questions presented in Appendices A, B, and C respectively.

APPENDIX F: COLLABORATIVE TEAM LEADER SURVEY RELIABILITY DATA

### Reliability of the LaFasto and Larson (1999) Instrument

DeWald (2002) computed reliability data for the LaFasto and Larson (1999) Collaborative Team Leader Instrument. Cronbach alphas were determined for each questions to test the internal reliability of the instrument. Nunnally, as cited by Santos (1999), stated that accepted value for internal consistency is 0.70 indicating that the LaFasto and Larson instrument provides a reliable measure of each dimension. DeWald's data is summarized in Table F-1.

Table F-1

*Summary of DeWald (2002) reliability data for the Collaborative Team Leader*

*Instrument*

Dimension	Alpha	Number of Surveys	Number of Questions
Focus on the Goal	0.89	268	6
Insure a Collaborative Climate	0.90	246	10
Build Confidence	0.88	267	7
Demonstrate Sufficient Technical Know-How	0.83	264	5
Set Priorities	0.86	264	5
Manage Performance	0.90	266	7

APPENDIX G: ORGANIZATIONAL CULTURE ASSESSMENT INVENTORY  
VALIDITY AND RELIABILITY DATA

Table G1

*Reliability coefficients obtained by Pennington (2001) for the OCAI*

Culture	<i>N</i>	$\alpha$
Clan	85	0.77
Adhocracy	85	0.64
Market	85	0.67
Hierarchy	58	0.64

APPENDIX H: TEAM SOLICITATION EMAIL LETTER AND STUDY SUMMARY  
ATTACHMENT

## TEAM SOLICITATION EMAIL LETTER

(Salutation):

I am a Doctoral Candidate in Organizational Leadership at the University of Phoenix. I am also a water resources professional (hydrologist) with over 25 years experience in water and environmental resources management. I am conducting my dissertation research on collaborative leadership in the field of water resources.

The purpose of the study is to determine, through surveying several collaborative water resource organizations' memberships, the relationship between collaborative leader style and team culture for a sample of water resources collaborations. The study will potentially provide collaborative water resources leaders with a means of assessing how their behavioral style relates to the cultural type of the teams they lead.

The time commitment to complete the survey, which can be taken on-line, is approximately 15 to 20 minutes. All responses will be confidential. No team, team leader, or team member will be able to view each other's comments. Complete anonymity will be maintained.

I am writing to ask if [team or organization name] would be willing to participate in the study. If you feel you can assist, please respond to this email and I will contact you by phone in the near future to provide more detail.

I have attached a one-page summary of my study proposal. The document contains background information regarding the study problem and population as well as a confidentiality statement. I would be happy to provide the full version of the proposal if more detail is desired. I will also provide a copy of the final dissertation to you and any member of your organization, if requested, when the study is complete.

Thank you for your time,

Thomas R. Bellinger  
 Doctoral Candidate  
 University of Phoenix

Contact Information:  
 (Provided to each respondent)

## STUDY SUMMARY ATTACHMENT

### THE RELATIONSHIP BETWEEN LEADER BEHAVIORAL STYLE AND TEAM CULTURAL TYPE IN WATER RESOURCES COLLABORATIONS

Thomas R. Bellinger  
UNIVERSITY OF PHOENIX

January 2007

#### Statement of the Problem

The United Nations (2005) stated that a major concern of the 21st century is effective management of water resources. Because management of this natural resource often involves several diverse stakeholders (Blomquist & Schlager, 2005), organizations increasingly find themselves working with others to address a range of issues (Hafer, 2000; Leach, 2000). As a result, a greater awareness of the importance of collaboration among public, private, scientific, and nonprofit stakeholders has been observed (Bouwen & Taillieu, 2004; Low & Randhir, 2005). Despite this growing visibility, collaboration is regarded as an area lacking research specific to the function that leader behavioral style plays in collaborative team processes such as team cultural development (Huxham & Vangen, 2000; Pennington, 2001).

This quantitative correlational study will address this research gap by determining the relationship between leader behavioral style and cultural type in a minimum of 30 water resources collaborations. Water resources collaborations operating in the United States will be surveyed (on line or through the mail) with regard to six dimensions of leader behavioral style as defined by LaFasto and Larson (2001) and strength of four cultural types as defined by Cameron and Quinn (1999). The relationship between the dimensions of leader behavioral style and the cultural type within collaborative teams will be analyzed in terms of correlation and predictability, using correlational and discriminate analysis. Study results will provide water resources collaborative leaders with new information regarding how their behavioral style relates to the cultural type of the collaborative teams they lead.

#### Population and Sampling

The study population will consist of team members serving on collaborations that address water resources issues in the United States. Sampled collaboration teams will be restricted to the criteria listed below.

1. Collaborations will focus on water resources-related issues occurring in the United States.
2. There must be a minimum of two organizations involved.
3. Team member or represented organizational diversity must be represented in that at least two sectors or two of the expertise categories listed in the demographic questionnaire are associated with each team.
4. Participants must be at least 18 years old.



### Confidentiality

Ensuring team member's confidentiality will be a primary concern. Team member consent authorizations and mail or email addresses will be collected separately from, and will not be matched to, the survey responses. The only potential identifiers of a team member will be from the demographic questionnaire. Team identities or the names of the team members will not be used.

### REFERENCES:

- Blomquist, W., & Schlager, E. (2005). Political pitfalls of integrated watershed management. *Society and Natural Resources*, 18, 101-117.
- Bouwen, R., & Taillieu, T. (2004). Multi-party collaboration as social learning for interdependence: Developing relational knowing for sustainable natural resource management. *Journal of Community & Applied Social Psychology*, 14, 137-153.
- Cameron, K. S., & Quinn, R. E. (1999). *Diagnosing and changing organizational culture: Based on the competing values framework*. Reading, MA: Addison-Wesley Publishing Company, Inc.
- Hafer, M. L. A. (2001). Landscape-scale collaborative management efforts and their implications for forestry. *Dissertation Abstracts International*, B61/10, 4296.
- Huxham, C., & Vangen, S. (2000). Leadership in the shaping and implementation of collaboration agendas: How things happen in a (not quite) joined-up world. *Academy of Management Journal*, 43(6), 1159-1175.
- LaFasto, F. M., & Larson, C. E. (2001). *When teams work best: 6,000 team members tell what it takes to succeed*. Thousand Oaks, CA: Sage Publications, Inc.
- Low, S., & Randhir, T. (2005, November/December). Watershed management, structural characteristics, information processing, and cooperative strategies in conservation organizations. *Journal of Soil and Water Conservation*, 60(6), 281-287.
- Pennington, P. L. (2001). Leadership factors influencing team culture. *Dissertation Abstracts International*. 62/07, 2317, UMI Number 3020107.
- United Nations. (2005). *Investing in development: A practical plan to achieve millennium goals*. New York: The UN Millennium Project.

## APPENDIX I: TEAM AND TEAM MEMBER RESPONSE SUMMARY TABLES

Table I1

*Team response summary*

Team	Team Members	Team Members Responding	Team Response Rate (percent)
1	36	8	22.2
2	12	5	41.7
3	3	3	100.0
4	4	3	75.0
5	12	6	50.0
6	33	10	30.3
7	30	6	20.0
8	25	7	28.0
9	17	10	58.8
10	11	5	45.5
11	13	9	69.2
12	8	6	75.0
13	10	4	40.0
14	33	11	33.3
15	49	11	22.4
16	44	4	9.1
17	14	3	21.4
18	11	4	36.4
19	11	8	72.7
20	16	11	68.8
21	4	4	100.0
22	9	7	77.8
23	31	4	12.9
24	9	2	22.2
25	5	4	80.0
26	7	5	71.4
27	14	8	57.1
28	25	13	52.0
29	28	12	42.9

30	24	13	54.2
31	28	9	32.1
32	11	7	63.6
33	24	9	37.5
34	7	2	28.6
35	19	14	73.7
36	7	7	100.0
37	30	8	26.7
38	28	8	28.6
Mean	18.5	7.1	49.5
Median	14.0	7.0	44.2
Max	49.0	14.0	100.0
Min	3.0	2.0	9.1
Std Dev	11.8	3.3	25.2

APPENDIX J: TEAM AND TEAM MEMBER DEMOGRAPHIC DATA SUMMARY  
TABLES

Table J1

*Sector, personal, and organizational expertise represented by surveyed teams*

<i>Team</i>	<i>Economic Sectors Represented</i>	<i>Number Categories of Organizational Expertise Represented</i>	<i>Number of Categories of Organizational Expertise Represented</i>
1	1	3	3
2	3	3	3
3	2	1	1
4	1	2	2
5	1	5	3
6	2	4	4
7	1	3	3
8	2	4	4
9	3	5	5
10	2	4	5
11	4	3	5
12	2	4	4
13	2	2	1
14	3	5	3
15	3	4	3
16	3	2	3
17	2	3	3
18	2	1	1
19	2	5	2
20	3	5	6
22	3	3	3
23	1	4	4
24	2	2	2
25	2	3	2
26	3	2	3
27	1	4	3
28	4	7	7
29	2	7	6
30	2	4	4
31	4	4	5
32	2	1	1
33	2	5	5
34	2	2	2
35	3	7	8
36	2	2	2
37	4	3	5
38	2	5	4
<i>Mean</i>	2.3	3.7	3.7

Table J2

*Personal expertise represented by individual respondents*

Personal Expertise Category	Representative Respondents	Percent of Sample Population
Engineering or natural sciences	55	20.3
Social sciences	2	<1
Research	5	1.9
Environment or Natural Resources	119	44.1
Administration	5	1.9
Education	16	5.9
Medicine and medical management	1	<1
Agriculture	14	5.2
Defense/military	2	<1
Legal	3	1.1
Transportation	0	0
Community Planning	13	4.8
Communications	9	3.3
Information Technology	2	<1
Religious or cultural	0	0
Human Resources	0	0
Consumer Oriented (commercial)	2	<1
Financial/Investment	1	<1
Policy or political	5	1.9
Participation based on personal interests	14	5.2
Other	2	<1

Table J3

*Organizational expertise represented by individual respondents*

Organizational Expertise Category	Teams Representing Category	Percent of Teams Surveyed
Engineering or natural sciences	27	10
Social sciences	1	<1
Research	4	1.5
Environment or Natural Resources	133	49.3
Administration	7	2.6
Education	13	4.8
Medicine and medical management	0	0
Agriculture	12	4.4
Defense/military	0	0
Legal	2	<1
Transportation	1	<1
Community Planning	16	5.9
Communications	3	1.1
Information Technology	1	<1
Religious or cultural	0	0
Human Resources	0	0
Consumer Oriented (commercial)	1	<1
Financial/Investment	1	<1
Policy or political	9	3.3
Participation based on personal interests	33	12.2
Other	6	2.2



APPENDIX K: LEADERSHIP BEHAVIORAL INSTRUMENT SUMMARY SCORES

Table K1

*Raw team mean scores for LaFasto and Larson (1999) leadership behavioral dimensions*

Team	Dimension					
	1	2	3	4	5	6
	Focus on the Goal	Ensure a Collaborative Climate	Build Confidence	Demonstrate Sufficient Technical Know-how	Set Priorities	Manage Performance
1	1.60	1.59	1.59	1.53	1.55	1.88
2	1.80	1.90	1.57	1.64	1.84	1.80
3	1.33	1.43	1.71	1.53	1.27	2.05
4	1.39	1.23	1.10	1.20	1.00	1.95
5	2.28	2.18	2.02	1.83	2.23	2.67
6	1.87	1.47	1.66	1.84	2.08	2.10
7	1.64	1.58	1.40	1.30	1.57	1.83
8	1.45	1.39	1.22	1.09	1.31	1.53
9	1.72	1.61	1.59	1.42	1.78	2.03
10	1.20	1.30	1.11	1.24	1.32	1.40
11	1.28	1.24	1.27	1.31	1.24	1.38
12	1.92	1.93	1.83	1.53	1.63	2.14
13	1.46	1.30	1.36	1.40	1.65	1.79
14	1.76	1.58	1.45	1.53	1.58	1.88
15	2.03	1.84	1.84	2.00	1.95	2.16
16	2.17	2.18	2.04	1.80	1.95	2.64
17	1.17	1.13	1.19	1.00	1.13	1.19
18	1.25	1.20	1.18	1.15	1.05	1.29
19	1.42	1.45	1.43	1.65	1.60	2.30
20	1.24	1.31	1.30	1.29	1.31	1.56
21	1.71	1.53	1.50	1.15	1.90	1.96
22	1.69	1.86	1.67	1.31	1.69	1.86
23	1.83	1.83	1.64	1.45	1.85	2.18
24	2.17	1.85	1.50	1.50	1.90	2.43
25	1.63	1.45	1.36	1.20	1.60	1.57
26	1.67	1.48	1.40	1.56	1.52	1.77
27	1.15	1.26	1.21	1.63	1.60	1.79
28	1.55	1.39	1.41	1.72	1.35	1.63
29	1.44	1.50	1.46	1.28	1.57	1.81
30	1.46	1.55	1.35	1.22	1.68	1.70
31	1.91	1.77	1.73	1.67	1.89	1.97
32	1.33	1.27	1.33	1.26	1.26	1.43
33	1.59	1.73	1.43	1.42	1.62	1.83
34	1.75	1.85	1.50	1.60	1.80	1.71

	Dimension					
	1	2	3	4	5	6
Team	Focus on the Goal	Ensure a Collaborative Climate	Build Confidence	Demonstrate Sufficient Technical Know-how	Set Priorities	Manage Performance
35	1.73	1.71	1.59	1.23	1.76	2.29
36	1.45	1.46	1.45	1.17	1.49	1.78
37	1.35	1.38	1.38	1.58	1.60	1.71
38	1.52	1.36	1.41	1.15	1.35	1.79
Mean	1.60	1.55	1.48	1.43	1.59	1.86
Median	1.60	1.49	1.44	1.42	1.60	1.82
Max	2.28	2.18	2.04	2.00	2.23	2.67
Min	1.15	1.13	1.10	1.00	1.00	1.19
Std Dev	0.29	0.27	0.23	0.24	0.28	0.34

Table K2

*Raw individual respondent scores for LaFasto and Larson (1999) leadership behavioral dimensions*

Respondent	Dimension					
	Focus on the Goal	Ensure a Collaborative Climate	Build Confidence	Demonstrate Sufficient Technical Know-How	Set Priorities	Manage Performance
1	1.00	1.00	1.00	1.00	1.00	1.43
2	1.50	1.80	1.71	1.00	2.00	1.86
3	1.83	1.80	1.71	1.60	1.60	1.71
4	2.00	2.10	2.29	2.00	2.00	2.14
5	1.50	1.20	1.57	1.40	1.20	1.86
6	1.33	1.10	1.14	1.40	1.00	2.00
7	2.00	2.00	2.00	2.00	2.00	2.00
8	1.67	1.70	1.29	1.80	1.60	2.00
9	2.00	1.90	1.43	1.40	1.80	1.71
10	1.00	1.20	1.00	1.00	1.00	1.14
11	2.00	2.30	1.71	1.60	2.00	2.29

Respondent	Dimension					
	Ensure a			Demonstrate		
	Focus on	Collaborative	Build	Technical	Set	Manage
	the Goal	Climate	Confidence	Know-How	Priorities	Performance
12	1.67	1.80	1.43	1.20	1.60	1.57
13	2.33	2.30	2.29	3.00	2.80	2.29
14	1.33	1.20	1.86	1.20	1.00	1.71
15	1.67	2.00	2.29	2.40	1.80	2.71
16	1.00	1.10	1.00	1.00	1.00	1.71
17	2.00	1.20	1.14	1.00	1.00	2.00
18	1.00	1.00	1.00	1.00	1.00	1.57
19	1.17	1.50	1.14	1.60	1.00	2.29
20	1.33	1.30	1.14	1.00	1.00	1.00
21	2.17	1.90	2.14	1.60	2.00	2.29
22	1.67	1.80	1.43	1.60	1.40	2.43
23	2.67	2.70	2.57	2.00	2.60	3.14
24	3.17	2.90	2.29	2.60	3.00	3.71
25	2.67	2.50	2.57	2.20	3.40	3.43
26	2.67	1.50	2.14	1.60	3.80	3.00
27	2.33	1.50	2.14	2.40	2.00	2.43
28	2.17	2.00	2.14	2.20	2.60	2.43
29	1.00	1.00	1.00	1.00	1.80	2.00
30	2.00	1.40	1.57	2.60	1.60	1.86
31	1.00	1.20	1.14	1.00	1.40	1.00
32	2.33	1.50	1.57	1.80	2.00	2.29
33	1.33	1.50	1.29	1.80	1.20	1.86
34	1.33	1.50	1.43	2.20	2.00	1.29
35	2.50	1.60	2.14	1.80	2.40	2.86
36	1.33	1.20	1.00	1.00	1.00	1.86
37	1.33	1.20	1.14	1.00	1.40	1.71
38	2.33	2.10	2.00	1.40	2.00	2.43
39	1.33	1.30	1.00	1.00	1.00	1.29
40	1.33	1.10	1.00	1.00	1.00	1.00
41	2.17	2.60	2.29	2.40	3.00	2.71
42	1.33	1.20	1.14	1.00	1.20	1.29
43	1.33	1.20	1.14	1.20	1.80	1.29
44	1.50	1.70	1.29	1.20	1.40	1.57
45	1.17	1.10	1.00	1.00	1.00	1.43
46	1.33	1.00	1.00	1.00	1.00	1.14
47	1.83	1.50	1.71	1.00	1.40	2.14
48	1.67	2.00	1.29	1.20	1.40	1.86
49	1.83	1.90	1.86	1.80	2.00	2.00
50	1.83	1.40	1.29	1.20	1.40	1.29
51	1.67	1.60	1.71	1.60	2.20	2.43
52	2.33	1.50	1.71	1.20	2.00	2.14
53	1.83	1.70	2.00	1.40	1.80	2.00
54	1.67	1.60	1.29	1.00	2.00	2.00
55	1.00	1.40	1.14	1.60	1.20	1.14
56	2.17	2.10	2.00	2.20	2.20	2.71

Respondent	Dimension					
	Ensure a			Demonstrate		
	Focus on	Collaborative	Build	Technical	Set	Manage
	the Goal	Climate	Confidence	Know-How	Priorities	Performance
57	1.67	1.50	1.43	1.20	1.40	2.00
58	1.17	1.40	1.43	1.00	1.60	2.57
59	1.17	1.20	1.00	1.00	1.00	1.14
60	1.33	1.80	1.29	2.00	2.00	2.14
61	1.00	1.20	1.00	1.00	1.00	1.14
62	1.00	1.20	1.00	1.00	1.00	1.29
63	1.50	1.10	1.29	1.20	1.60	1.29
64	1.17	1.20	1.00	1.40	1.20	1.00
65	1.50	1.30	1.43	1.60	1.40	2.00
66	1.00	1.00	1.00	1.00	1.00	1.00
67	1.33	1.50	1.71	1.00	1.40	2.00
68	1.17	1.00	1.00	1.20	1.00	1.00
69	1.00	1.20	1.00	1.40	1.00	1.14
70	1.33	1.00	1.29	1.60	1.20	1.29
71	2.00	2.00	2.00	1.60	2.00	2.00
72	1.00	1.00	1.00	1.00	1.00	1.00
73	1.83	1.70	1.14	1.00	2.00	1.71
74	3.00	3.90	4.00	2.80	2.60	3.14
75	1.33	1.00	1.00	1.00	1.00	1.43
76	2.50	2.40	2.14	2.00	2.00	2.57
77	1.17	1.10	1.29	1.00	1.00	1.29
78	1.67	1.50	1.43	1.40	1.20	2.71
79	1.33	1.20	1.29	1.20	1.00	1.43
80	1.50	1.60	1.43	2.00	2.00	1.86
81	1.83	1.40	1.43	1.40	1.60	2.29
82	1.17	1.00	1.29	1.00	2.00	1.57
83	1.33	1.20	1.43	1.60	2.00	1.86
84	1.67	1.50	1.14	2.00	1.40	2.14
85	1.50	1.40	1.00	1.00	1.00	1.71
86	2.00	1.60	1.57	2.00	2.40	2.57
87	1.17	1.10	1.14	1.80	1.00	1.00
88	1.83	1.60	1.29	1.40	1.60	1.86
89	2.67	2.50	2.43	2.20	2.40	2.43
90	2.00	1.60	1.43	1.00	2.00	1.71
91	2.33	2.70	2.43	1.80	1.60	2.57
92	1.33	1.10	1.00	1.00	1.00	1.43
93	1.50	1.10	1.14	1.00	1.00	1.43
94	2.67	2.80	2.71	2.80	2.60	2.86
95	2.00	1.50	1.71	2.00	2.40	2.43
96	1.83	1.70	1.71	2.00	2.00	2.71
97	2.67	2.00	2.29	1.80	2.40	2.43
98	2.17	1.80	1.57	2.60	2.20	2.43
99	2.17	1.50	2.00	1.80	1.60	2.00
100	2.67	3.00	2.43	3.20	2.20	2.29
101	2.00	2.10	2.14	2.00	2.00	2.14

Respondent	Dimension					
	Ensure a			Demonstrate		
	Focus on	Collaborative	Build	Technical	Set	Manage
	the Goal	Climate	Confidence	Know-How	Priorities	Performance
102	1.67	1.50	1.29	1.20	1.60	1.71
103	1.17	1.30	1.29	1.20	1.40	1.57
104	1.33	1.00	1.14	1.40	1.00	1.14
105	2.33	1.90	2.14	2.00	2.00	2.29
106	2.33	3.00	2.29	2.00	2.00	3.71
107	1.50	1.50	1.43	1.20	1.40	1.57
108	2.50	2.30	2.29	2.00	2.40	3.00
109	1.17	1.00	1.29	1.00	1.00	1.00
110	1.33	1.30	1.29	1.00	1.20	1.43
111	1.00	1.10	1.00	1.00	1.20	1.14
112	1.00	1.00	1.00	1.00	1.00	1.29
113	1.17	1.00	1.14	1.20	1.00	1.00
114	1.33	1.80	1.57	1.00	1.20	1.43
115	1.50	1.00	1.00	1.40	1.00	1.43
116	1.83	1.50	1.71	1.80	2.60	2.29
117	1.17	1.20	1.00	1.60	1.20	2.00
118	1.50	1.60	2.00	1.80	1.80	2.29
119	1.50	1.40	1.29	2.40	1.20	2.29
120	1.33	1.50	1.43	1.80	1.60	2.14
121	1.33	1.60	1.43	1.20	1.60	1.71
122	1.33	1.30	1.29	1.40	1.40	2.86
123	1.33	1.50	1.29	1.20	1.40	2.86
124	1.17	1.30	1.14	1.20	1.40	1.29
125	1.00	1.10	1.29	1.00	1.00	1.00
126	1.33	2.00	2.00	2.00	2.00	2.00
127	1.33	1.40	1.71	1.20	1.80	2.14
128	1.33	1.30	1.14	1.00	1.20	1.57
129	1.00	1.20	1.00	1.00	1.20	1.57
130	1.17	1.10	1.14	1.60	1.20	1.14
131	1.00	1.20	1.00	1.00	1.00	1.86
132	1.50	1.50	1.14	1.40	1.00	1.71
133	1.50	1.00	1.43	1.40	1.20	1.00
134	1.33	1.30	1.29	1.40	1.40	1.86
135	2.17	1.20	1.29	1.20	2.20	1.71
136	1.33	1.40	1.29	1.00	1.40	1.57
137	2.00	2.10	2.29	1.20	2.60	2.71
138	1.33	1.40	1.14	1.20	1.40	1.86
139	2.33	2.70	2.57	1.40	2.20	3.00
140	1.17	1.40	1.14	1.20	1.00	1.57
141	1.67	1.20	1.14	1.00	1.00	1.14
142	2.00	2.20	2.00	2.00	2.00	2.00
143	1.33	2.10	1.71	1.40	3.00	2.00
144	1.83	1.80	1.86	1.20	1.40	1.57
145	1.50	1.60	1.29	1.00	1.20	1.71
146	1.17	1.40	1.57	1.80	1.60	1.86

Respondent	Dimension					
	Ensure a			Demonstrate		
	Focus on	Collaborative	Build	Technical	Set	Manage
	the Goal	Climate	Confidence	Know-How	Priorities	Performance
147	1.67	1.80	1.71	1.20	1.80	2.29
148	3.50	2.80	2.29	1.80	3.00	3.57
149	1.00	1.30	1.00	1.00	1.00	1.00
150	2.17	2.00	1.71	1.20	2.80	2.57
151	2.17	1.70	1.29	1.80	1.00	2.29
152	2.00	1.20	1.29	1.20	1.40	1.43
153	2.00	2.10	1.86	1.60	2.00	2.00
154	1.33	1.30	1.29	1.00	1.60	1.43
155	1.17	1.20	1.00	1.00	1.40	1.43
156	2.33	1.50	1.86	2.20	2.20	2.86
157	1.67	1.30	1.14	1.20	1.60	1.29
158	1.50	1.60	1.43	1.40	1.60	1.57
159	1.50	1.60	1.14	1.40	1.20	1.29
160	1.33	1.40	1.43	1.60	1.00	1.86
161	1.00	1.10	1.14	1.00	1.20	1.43
162	1.33	1.90	1.57	3.20	3.00	2.86
163	1.33	1.10	1.43	1.40	1.60	2.00
164	1.00	1.00	1.00	1.00	1.00	1.00
165	1.17	1.00	1.00	1.60	1.20	1.00
166	1.00	1.50	1.14	1.60	1.00	1.71
167	1.00	1.30	1.29	1.80	1.80	1.86
168	1.33	1.20	1.14	1.40	2.00	2.43
169	1.50	1.40	1.14	1.80	1.00	1.29
170	1.50	1.10	1.14	1.80	1.00	1.14
171	2.00	1.40	1.57	1.80	1.60	2.14
172	1.67	1.60	1.71	2.00	1.80	2.14
173	1.50	1.60	1.43	1.60	1.00	1.86
174	1.67	2.00	1.71	2.20	2.00	1.57
175	2.17	1.30	1.71	2.00	2.00	1.71
176	1.17	1.20	1.00	1.00	1.00	1.14
177	1.83	1.60	2.00	2.20	1.60	2.29
178	1.33	1.20	1.14	1.40	1.20	1.29
179	1.67	1.50	1.43	2.40	1.40	2.43
180	1.00	1.10	1.00	1.00	1.00	1.00
181	1.17	1.10	1.29	1.20	1.00	1.14
182	1.50	2.10	1.86	1.00	2.20	2.43
183	1.50	1.50	1.29	1.20	1.40	2.00
184	1.17	1.30	1.14	1.00	1.00	1.86
185	1.33	1.40	1.29	1.00	1.60	1.00
186	1.33	1.10	1.29	1.00	1.60	1.57
187	2.17	2.10	2.57	2.00	1.80	2.71
188	1.17	1.40	1.29	1.20	1.20	2.14
189	1.50	1.60	1.43	1.20	2.00	2.00
190	1.33	1.20	1.00	1.00	1.40	1.14
191	1.33	1.50	1.57	1.40	1.60	2.00

Respondent	Dimension					
	Ensure a			Demonstrate		
	Focus on	Collaborative	Build	Technical	Set	Manage
	the Goal	Climate	Confidence	Know-How	Priorities	Performance
192	1.00	1.00	1.00	1.00	1.00	1.00
193	2.00	1.80	1.86	2.40	2.00	1.86
194	2.33	1.50	1.57	2.00	2.80	2.57
195	1.00	1.60	1.14	1.00	1.20	1.00
196	1.17	1.30	1.43	1.20	1.60	1.71
197	1.33	2.20	1.29	1.00	1.40	1.57
198	1.50	1.80	1.00	1.20	1.60	1.57
199	1.17	1.20	1.14	1.00	1.60	1.86
200	2.17	2.10	2.00	1.80	2.20	2.43
201	1.33	1.80	1.43	1.00	1.40	1.43
202	1.33	1.10	1.14	1.00	1.20	1.71
203	1.33	1.20	1.14	1.20	1.80	1.43
204	1.50	1.50	1.43	1.00	2.00	1.86
205	1.67	1.80	1.86	1.40	2.00	1.86
206	1.17	1.10	1.00	1.00	1.00	1.14
207	2.17	1.20	1.14	1.60	1.60	1.43
208	2.33	2.80	2.71	2.00	2.80	2.86
209	1.67	1.20	1.14	1.00	1.60	1.71
210	1.67	1.90	1.14	1.40	1.60	1.71
211	1.67	2.00	2.00	2.00	2.00	2.00
212	2.00	2.00	2.00	2.00	2.00	2.00
213	2.50	2.00	2.43	2.80	2.60	2.29
214	1.17	1.10	1.00	1.20	1.00	1.57
215	2.00	1.70	2.00	1.00	1.80	2.14
216	1.50	1.50	1.00	1.40	1.00	1.71
217	1.67	1.60	1.86	1.40	1.80	1.86
218	1.00	1.00	1.14	1.00	1.40	1.29
219	1.17	1.10	1.00	1.00	1.00	1.00
220	1.33	1.30	1.57	1.60	1.00	1.43
221	1.00	1.00	1.00	1.00	1.00	1.00
222	1.67	1.40	1.71	1.40	1.60	1.71
223	2.00	1.80	1.71	1.20	1.80	2.00
224	1.50	1.60	1.43	1.40	1.60	1.29
225	1.67	1.90	1.71	1.80	1.40	2.14
226	2.00	2.20	1.57	1.00	1.80	2.29
227	1.17	1.40	1.00	1.20	1.40	1.29
228	2.17	2.20	1.71	1.40	2.40	2.57
229	1.17	1.40	1.00	1.60	1.60	1.14
230	1.33	1.30	1.00	1.00	1.00	1.43
231	1.33	1.80	1.71	2.20	1.60	2.29
232	2.33	2.50	2.00	1.80	2.40	2.14
233	1.17	1.20	1.00	1.40	1.20	1.29
234	2.50	1.60	1.57	1.00	2.00	2.71
235	1.83	1.90	1.57	1.20	1.60	1.43
236	1.33	1.70	1.43	1.20	2.00	1.71



Respondent	Dimension					
	Ensure a			Demonstrate		
	Focus on	Collaborative	Build	Technical	Set	Manage
	the Goal	Climate	Confidence	Know-How	Priorities	Performance
237	1.67	2.00	2.29	1.60	2.40	3.57
238	2.17	1.70	2.00	1.40	2.00	2.29
239	1.17	1.60	1.14	1.00	1.40	1.29
240	1.67	1.40	1.43	1.00	1.80	2.29
241	1.83	1.80	1.71	1.00	1.80	2.43
242	1.50	1.40	1.43	1.20	1.60	2.29
243	1.33	1.20	1.14	1.00	1.00	2.43
244	2.33	2.60	2.14	1.80	2.00	3.43
245	1.50	1.60	1.43	1.00	1.20	2.00
246	1.83	1.80	1.57	1.00	2.00	2.43
247	1.50	1.60	1.43	1.80	1.80	1.71
248	2.00	1.70	2.00	1.40	2.20	2.00
249	1.00	1.20	1.29	1.20	1.00	1.29
250	1.83	1.70	2.00	1.20	1.40	2.43
251	1.17	1.60	1.29	1.00	1.80	2.29
252	1.00	1.70	1.14	1.20	1.40	1.43
253	1.67	1.20	1.14	1.00	1.20	1.14
254	1.50	1.10	1.29	1.20	1.40	1.86
255	1.50	1.60	1.57	1.80	2.20	2.86
256	1.00	1.00	1.00	1.00	1.00	1.00
257	1.00	1.00	1.00	1.20	1.00	1.00
258	1.17	1.10	1.00	1.00	1.60	1.00
259	1.00	1.00	1.00	1.80	1.80	1.57
260	1.17	1.20	1.14	1.40	1.40	1.71
261	1.67	2.00	1.57	2.00	1.00	1.00
262	2.33	2.10	2.71	2.40	2.80	3.57
263	2.17	2.30	2.29	2.20	2.20	2.71
264	1.60	1.10	1.29	1.00	1.00	1.57
265	1.50	1.00	1.14	1.00	1.00	2.00
266	3.50	1.40	1.71	1.00	1.20	1.43
267	1.00	1.20	1.14	1.00	1.40	1.43
268	0.48	1.70	1.43	1.00	1.80	2.43
269	1.17	1.20	1.29	1.00	1.20	1.71
270	1.00	1.00	1.00	1.00	1.00	1.00
Mean	1.60	1.55	1.48	1.45	1.60	1.86
Median	1.50	1.50	1.29	1.20	1.60	1.86
Maximum	3.50	3.90	4.00	3.20	3.80	3.71
Minimum	1.00	1.00	1.00	1.00	1.00	1.00
St Dev	0.48	0.46	0.46	0.48	0.54	0.60

APPENDIX L: SUMMARY OF OPEN ENDED QUESTION RESPONSES

Table L1

*Summary of responses to Lafasto and Larson (1996) Question 41 (Identifying remarks removed or edited)*

Respondent	Response to Question 41: What are the strengths of the team leader?
1	[...]eager to move this group toward its intended goals.
2	Technical competence, vision, people skills
3	Willingness to help facilitate team members duties to make them easier and more efficient. Support and encourage all team members.
4	No comments.
5	Goal oriented and tries to break monotony.
6	very relaxed and able to calmly deal with problems.
7	Punctuality.
8	Respect for team members. Flexibility.
9	Focus, passion, and commitment to seeing a project succeed.
10	Knowledgeable, friendly, courteous, good leadership skills.
11	Smart, hardworking, perceptive
12	Communication skills, sees the big picture, personable.
13	Honest and believes in purpose of the project
14	Balances opinions for the good of the organization
15	organizational management skills, especially in the business and financial aspect of running the organization. Dedication to the principle to good watershed management. Real world business experience and attitude.
16	They have selected volunteer board members with diverse strengths and backgrounds, the common denominator is that each member is committed to a collaborative approach to our projects and problem solving. Because we are funded through various grants, processes need to be observed without restricting our achieving our goals. They balance it all very well. The rewards of our success are not monetary, so much as pride in a job well done.
17	good leadership, understands issues, relaxed personality
18	easy going laid-back style
19	Seems to be a straight-forward, honest person, with an adequate to good understanding of the relevant issues.
20	Has developed trust and understanding of water issues pertaining to farmland and to farmers.
21	Open, energetic, dedicated. [...] has fun and enjoys what [...] is doing. [...] well known in the community and has a vast set of contacts and support people/organizations.
22	Experience in the field. An understanding of human nature. Ability to recognize opposing issues. Willingness to listen.

Respondent	Response to Question 41: What are the strengths of the team leader?
23	Our team leader is willing to devote seemingly endless time to the efforts of our organization. [...] actively seeks new projects and pursues them relentlessly. Our team leader encourages all to add relevant issues to our meeting agendas and is willing to let any one speak their piece, [...] encourages participation and offers some of the "more fun" activities to others on the team.
24	Personable, committed to organizational causes even if the causes are vague; looks for solutions (just that problems are not clearly articulated)
25	Committed to the community collaborative processes. Ability to make effective partnerships with community members and project partners (e.g. agencies).
26	Connections to the agencies that control the money
27	Listening
28	Open minded and willing to consider and listen to members; [...] alone lacks the "responsibility" for decision-making due to organizational position possibly; that is, [...] has this role, but [...] employer hasn't really given [...] responsibility, plus collaboration makes staying focused very difficult. There are lots of ways to "skin the cat" and its hard to select a single way and proceed with that approach exclusive of other ways. Group lacks focus but I don't attribute this problem to the team leader necessarily.
29	I think [...] is very organized and seems to know what the next steps are.
30	Enthusiastic and very willing to learn, committed to the goals of the team, always open to new ideas for improvement, attempts to stay current on various initiatives affecting the issues, always appreciative of new insights and team member participation and partnerships
31	Dedicated and effective
32	Facilitates discussion among workgroup members. Makes certain that individual workgroup member comments are interpreted clearly by all workgroup members and asks for clarifications if discrepancies arise.
33	Great interpersonal and organizational skills.
34	Open minded; no preconceptions
35	Nice, pleasant person.
36	Technical knowledge and profesional background
37	Excellent technical background, willingness to listen to other opinions, focus on overall results that benefit the group.
38	Very Knowledgable, organized, and willing to listen.
39	effective oral and written communication works well with diverse group of people excellent example of integrity and ethics supports teamwork and transparency of collaborative decisions
40	Understand technical and public processes
41	The team leader has the experience necessary to function in the position [...] has been placed in.
42	[...] very thorough, knowledgeable and competent about the material discussed at each work session.
43	Very approachable which is so important in such a large and diverse group

Respondent	Response to Question 41: What are the strengths of the team leader?
44	Commitment, passion, integrity, energy, focus and vision
45	Excellent technical knowledge, openness, inclusive approach.
46	Knowledgeable, very good leadership skills, knows how to build team concept and involvement of members.
47	Knowledge, calm approach, practical resolution of issues
48	Knowledgeable, organized, thorough
49	commitment to the water and the valley
50	[...] open and receptive to ideas, background information, local history/culture. Learns quickly and is eager to achieve the goals of the group. [...] coping very well with an overwhelming position and little pay and time to do it.
51	Knowledge, experience in water issues. Ability to communicate very effectively with team members and the public.
52	Vision for the future
53	Honesty, openness, technically skilled, insightful
54	Collaborative nature, personal focus on issues, communicating over-arching goals
55	Working with a diverse group
56	Determination/Knowledge of funding sources and commitment to obtaining funding
57	Focused and driven.
58	[...] has excellent knowledge and is will to work whatever hours are necessary to complete mission.
59	Well organized. Excellent organizer of activities. Excellent at getting appropriate people to work on priority tasks. Excellent writer. Outstanding personal relationships skills. Recognized by all of our partners as a desired resource in cooperative projects. [...] was selected [...] at the second meeting [...] attended.
60	the team leader may not be the way to define the person leading our organization maybe more a director
61	[...] believes in our project
62	Experience, dedication, enthusiasm.
63	[...] very focused and very passionate about [...] job and the mission of ERMA.
64	Warmth, genuineness, open communication style, pleasant sense of humor, general optimism about the project, clear leadership role.
65	The team leader is very organized and goal oriented. The leader has a persistent style to get things accomplished.
66	very very good all around person, handles people very well at public meetings
67	Knowledge, dedication and organizational skills
68	Hard working, self motivated, thinks outside the box
69	[...] focused, enthusiastic, productive, and responsive.
70	Hard working, organized, dedicated, resourceful, well-spoken, professional

Respondent	Response to Question 41: What are the strengths of the team leader?
71	[...] understands that all participants are VOLUNTEERS./Makes all who show up feel welcome, no matter what has come before.
72	Knowledge, Diplomacy, Focus on goals, Good at consensus building.
73	An open and casual management style that encourages team cooperation, collaboration, and discussion. An extensive knowledge of the issues we are addressing. A deep commitment to our organization's mission and values.
74	Persistence
75	[...] creative approach to the [...] Education Program. [...] effectively directs a program which demands innovation./[...] promotes a sense of team and purpose amongst the staff and volunteers.
76	Easy going, loyal to cause, hard-working, willing to get hands dirty
77	Excellent multi-tasker, surprising ability to deal with bureaucratic issues ([...] is a scientist), outstanding commitment to the project
78	very warm, humble personality with good questions and consideration of group; inclusive approach to planning and leading group meetings, projects; well organized, information prepared and sent to members in a timely way; astute with technical issues related to water science topics and teaching techniques
79	Well organized, focused, supportive, knowledgeable.
80	Open minded and dedicated to their job.
81	Very knowledgeable about the area and issues; and well respected in the broader community
82	Organization, Direction, Enthusiasm, Knowing the importance of the issues; collaboration; ideas
83	honesty, enthusiasm, positive belief in the future, hard working
84	[...] has a positive, "can do" attitude that is infectious. [...] also works very effectively with the diverse team of individuals and promotes a healthy dialogue.
85	optimism, good follow through, organizational skills, friendly and welcoming.
86	diplomatic, diverse background
87	Positive, friendly, upbeat, smart, open to new ideas
88	willingness to listen to everyone's input
89	Has a good background and history.
90	very professional
91	Subject matter expert; diligence;
92	[...]can follow technical discussions and interpret them for the lay people on our committee. [...] also good at keeping us on task, while allowing in-depth discussion when necessary.
93	Looking for ways to achieve the goals of flood plain management for the various communities involved and to promote understanding for all levels of community leadership.
94	The team leader appears to be affable.

Respondent	Response to Question 41: What are the strengths of the team leader?
95	cooperative, professional
96	Arranges regular meetings of interest to members on themes of importance with authoritative outside speakers.
97	Keeping us informed.
98	very positive and passionate. Understanding and supportive.
99	No comment
100	Very likeable personally, but I feel lacks the knowledge and education to bring together various stakeholders with issues at odds.
101	As the watershed coordinator our team leader is determined, kind, patient, motivated and flexible.
102	Open to diverse sources of input. Has a truly collaborative management style.
103	Soft spoken, non-partisan, persistent when resources are not available.
104	The Team Leader is extremely dedicated to our group and our goals. [...] aims to educate all members through group sharing of critical information relevant to our goals. [...] always has a positive, warm attitude.
105	Leader is good with people
106	no comment
107	Positive approach to issues, open communication.
108	[...] is easy to talk to
109	Management of information and committee responsibilities in a knowledgeable and efficient manner so that monthly meetings and projects can proceed in a relaxed and productive atmosphere.
110	Organized and dedicated.
111	Strong skill set in management and goal setting with an emphasis on aligning the right person with the right task for efficient and productive implementation of actions and objectives that achieve goals. Superior ability in recruiting representative for the committee that bring valuable skills and knowledge that make the committee more productive and efficient. Our team leader is very adept at recognizing volunteer achievement and fosters an atmosphere of collaboration and hard work.
112	Well organized good facilitator.
113	Listens to everyone on team, asks for clarification if needed, looks to others for their strengths.
114	Relates well to others, has the background and knowledge and collaborates well.
115	Excellent organizational skills. Good meeting management abilities.
116	Coordination and keeping the group on task at hand
117	The biggest strength is that several members of the [...] serve the role of the team leader. One person is the coordinator to manage logistics and keep the group on task. Others serve as policy experts or take on fundraising or other roles. All decisions about the group's priorities are made by the full group, not by one "leader."
118	Reliable, organized, takes action

Respondent	Response to Question 41: What are the strengths of the team leader?
119	[...] a skilled facilitator and meeting manager. [...] knows how to set an agenda and keep the working group's discussions on target and on schedule. [...] is also an accomplished lobbyist and knows how to get a hearing for our recommendations.
120	[...] is genuinely collaborative, and without an ego driven agenda. [...] is able to balance rational and political aspects of the strategy and to keep us focused without being dictatorial.
121	As a coalition, we have a nominal "team leader" who is trusted by all. But the strength of the coalition is that we are not a hierarchy, but rather a flat line system, with the team leader charged with guiding people where they can be of most help.
122	[...] is competent and organized. I feel that when [...] chairs a coalition meeting, [...] puts the coalition's goals first and that helps all coalition members collaborate. We all come from different organizations with unique agendas and [...] has lead us together around a common goal. [...] solicits and encourages strong leadership and participation from all members around the table. I don't think this group would let [...] lead if [...] assumed decision-making authority. [...] looks for consensus decisions. Because of this leadership style, [...] has built enough trust that the group is now willing to delegate authority to [...] in the name of expediency. [...] is successful in the roles of "coordinator," "meeting chair," and "public spokesperson."
123	Collaborative leadership, meeting and process management, intelligence, political acumen
124	The team leader exhibits strong technical proficiency, good collaboration skills, good writing skills, good networking capability, and excellent commitment to the group and its goals.
125	Clear understanding of the goals leadership fairness
126	No comment
127	Well organized excellent facilitator
128	the team leader is an inspiration to gain protection and actions that will result in protection for this watershed. [...] is experienced in several watersheds and brings all [...] experience to bear on this task. [...] highly respected and well known in our community.
129	Dedicated leader who provides inspiration and clear objectives.
130	Team leader is organized and keeps the group moving forward. Also, develops and keeps group members involved.
131	Wealth of experience and knowledge in dealing with complex issues. Understanding of the political process, and realities, of resolving environmental issues.
132	Good listening skills, Good motivator, Appears knowledgeable of subject area
133	Well known and respected, Very motivated. Has many years of experience and knowledge
134	Clarity of our goal and ability to lead us all through the rough parts and get people to volunteer to complete pieces of the project and bring back to the group for evaluation.
135	Extremely intelligent, motivated, resourceful and a good leader. Lots of positive energy and success achieving funding, etc...
136	Our leader has excellent focus, energy and follow through. This person is always there when needed and allows the team to perform the work as we see fit with monthly



Respondent	Response to Question 41: What are the strengths of the team leader?
	meetings for updates.
137	Technical knowledge, historical knowledge, external credibility, enthusiasm and energy, generally positive outlook.
138	flexibility, knowledge, energy, multi-tasking skills
139	Knowledge of issues. Public speaking
140	Organized, articulate speaker. Ensures that everyone's ideas are included and that everyone has a chance to contribute.
141	Good communicator and is open to discuss several sides to an issue with the anticipation of finding a reasonable solution.
142	Tolerance, fairplay and recognition of all efforts
143	Focus on the goals, high level of motivation and commitment, good communication, analytical, and decision-making skills.
144	Consistent, fair, open, flexible.
145	forceful personality,organizational skills,hard working
146	coordination, collaboration
147	Organized and experienced.
148	Having the ability to obfuscate the interests of the [sponsor] who pays [...] to facilitate the committee with the unstated goal of conducting public relations efforts rather than the stated goal of the group, which is to protect the interests of the state protected wetland.
149	Full understanding of the issues confronting the committee & a long history of the area. Ability to work with a variety of people with differing agendas. Tact & diplomacy & a sense of humor.
150	Level of knowledge, commitment, energy and enthusiasm, work ethic, ability to generate new ideas
151	gives everyone opportunity to contribute
152	Intelligent,fair,good-natured
153	Ability to listen.
154	Y
155	knowledge of industry, networking/people skills, drive
156	Excitement
157	A knowledge of the science behind our goals and a desire to see the success of the program.
158	sincere interest and vision for leading the organization forward, good networking skills and willingness to go the extra mile or telephone calls needed to get the job done
159	Great technical expertise and deep commitment
160	[...] brings credibility to the team and the organization which is recognized by the members of the society and other partnering organizations.
161	optimism, organization, reinforcement of team members
162	1. Enthusiasm and 2. ability to draw involvement from individuals for their volunteer efforts and 3. commercial backers as sponsors. 4. [...] does put out great press releases of

Respondent	Response to Question 41: What are the strengths of the team leader?
	the efforts
163	Excellent overall
164	Sharing of responsibilities, delegation of authority, inclusion and a wealth of recognition and appreciation. The team leader makes it appear that there is no leader, although clearly there is.
165	[...] motivated, enthusiastic and really shows how much [...]cares about the mission of the team.
166	Intelligent, fair, good-natured
167	very energetic
168	[...] is extremely enthusiastic and energetic and resourceful. [...] networks very well and researches all [...] subject matter. [...] is a pleasure to work with and is always looking to be inclusive. [...] is very good at getting things done through influence...yet another of [...] strengths!
169	Well organized, very positive and highly motivated.
170	The team leader is very well organized and keeps the team focused with well defined goals that need to be achieved.
171	[...] does a good job of making sure that everyone on the teams ideas and opinions get equal consideration and discussion no matter if that person is a landowner or a county official
172	Always open to new ideas
173	[...] was able to keep the team on track and focused on the project by being open to all views and was able to quickly bring the group back to the topic at hand when we strayed from the topic being discussed.
174	Engaging and willing to listen
175	Organization, meeting dynamics, optimism, good personality
176	knowledge and organization
177	The team leader strived hard to keep the team focused on an objective of coming up with goals and solutions to help clean up the [...] watershed.
178	Puts everyone at ease, allowing them to openly discuss the needs of the team.
179	Impartiality, meeting facilitation skills, keeping the discussions focused and on time.
180	Presence of mind; interpersonal skills; strong communicative skills; product knowledge
181	Was able to move the team forward to achieve our goals, but when needed was able to allow more time and to go back and review results when questions were raised about past results.
182	Dynamic, strong communicator, able to encourage and motivate others,
183	Clear thinker, not bound by hierarchy, gives staff freedom to explore issues, understands technical issues, excellent articulation of message
184	Articulate, knowledgeable about project, excellent writer, personable, focused on goal, keeps priorities simple.
185	Focus, entrepreneurial instincts, political skill

Respondent	Response to Question 41: What are the strengths of the team leader?
186	Long-standing knowledge of watershed issues, tenacity
187	Good organization.
188	Articulate, compelling presentations of our objectives and methods, even to people/groups who know little of what we do. "Infectious enthusiasm" perhaps sums it up best.
189	Articulate, compelling presentations of our objectives and methods, even to people/groups who know little of what we do. "Infectious enthusiasm" perhaps sums it up best.
190	Very knowledgeable, well spoken. gives credit where credit is due. Committed.
191	Commitment to the mission of the organization. High credibility with people outside the organization. Technical command of the key subject areas. Commitment to the people within the organization
192	Exceptionally positive attitude. Frequent, useful communication. Expectations that all will contribute in to the best of capacity. Open to suggestions and creative input.
193	public speaking skills
194	Great visionary and think tank. Always positive, honest and supportive.
195	motivated to succeed, charismatic, capable
196	The {...} is a complex organization, and it takes a unique individual to keep everyone's egos as well as priorities in check. The present team leader is an exceptional multi-tasker and team player.
197	Undying optimism, high technical ability, very adept at inspiring others to work toward his goals.
198	enthusiasm, determination, sense of humor, experience, balancing the ideal and the practical
199	Animated in a positive way, easy to work with, always a positive outlook, very knowledgeable on subject, sees the big picture.
200	N/A
201	Knowledge of subject matter. Good writing skills. Understanding staff needs. Good contacts.
202	[...] is very strong technical in the arena of watershed planning, impacts of our organization's activities on wildlife, [...] is very personable, works well with others and is very enthusiastic to the point its contagious.
203	Very focused on issues and wants the team to succeed. Has lots of energy and is emotional about his work.
204	Vision and leadership
205	Excellent at motivating people and networking to find new funding sources for our team.
206	Driven, hardworking, and futuristic (always looking to the future needs and of the team).
207	Good Leader, fair, listens
208	Works well with other. Communicates well.
209	Long Term Commitment to this process.

Respondent	Response to Question 41: What are the strengths of the team leader?
210	Ability to find or suggest a place or position that all members can agree on.
211	Openness to views of others and dedication to team mission
212	Flexibility to meet the Committees needs and priorities
213	good organizer
214	This is a volunteer team, so some of the questions above are not really applicable, ie rewards, etc. Our leader is dedicated to the environmental goals we are trying to meet and keeps the group focused and uses limited time together well.
215	Good grasp of the issues. Good at responding to the issues brought up by members. Sincerely wants to facilitate progress and effectiveness of the team as a whole.
216	The ability to listen and ensure that everyone involved understandings the discussions.
217	Great personality, cheerful and a real team player.
218	[...] a hard worker and a good "people person".
219	Strong programmatic knowledge, provides clear direction, honest, collaborative
220	Always open for suggestions.
221	Gives everyone a chance to express their own opinion.
222	Very open about discussing all team issues and challenges.
223	Level of commitment to organization and goals/leads by example
224	versatile, knowledgeable, well liked, good sense of humor, financially aware, a people person
225	Honest person who is committed to the goal of the organization and is willing to work toward that goal with the help of the Board.
226	[...] has a quietness about [...] that allows the volunteers to express themselves. [...] steady, calming personality combined with [...] desire to persure technical information and persistence are admirable and make [...] a great leader.
227	Our Team Leader (President) is a very capable, helpful and hard working leader.
228	Respect and ability to lead by example.
229	Clearly defines the objective
230	The clarity of purpose and clearness of focus.
231	A good and competent leader, with a "laid-back" style of leadership. [...] does not have too many technical skills in this field, but is good about seeking advice and delegating knowledge people to get projects done.
232	Likeable and full of ideas
233	Character, integrity, open to communication.
234	Knowledgeable, dedicated.
235	Cooperative and amiable but will crack the whip when necessary.
236	[...] knowledgeable of the scientific and political issues at play in this project.
237	[...] impartial and is considered a technical expert on the technical issues.
238	None

Respondent	Response to Question 41: What are the strengths of the team leader?
239	Technically competent, articulate, intelligent, goal oriented, personable.
240	Technical understanding/expertise combined with an ability to see and communicate its relationship within a larger social context.
241	Very experienced and impartial. Always allows everyone to be heard fully.
242	The ability to listen, and convey technical issues in a way that everyone can understand.
243	Very knowledgeable in Systems Dynamic Modeling which is this process; likeable by participants; very helpful when [...] co-workers (who help in the leadership role) need such help in presentations; and has high ability to develop to maintain the modeling process on part of participants.
244	[...] technical knowledge is superb. [...] was not facilitating the process, so it's a bit hard to answer some of the questions. [...] initiative at hiring a professional facilitator is to be commended.
245	[...] has a strong technical background, his ego doesn't interfere with the project, and [...] communicates frequently.
246	Technical expertise & Understanding of importance of technical focus over political manipulation of data.
247	Allows all to speak. Controls tone of discussion. Summarizes conclusions and asks for concurrence.
248	[...] was personable and believable and knew what [...] wanted to accomplish.
249	Who was the team leader? The [...] consisted of [...] specialists concentrating on a particular part of the leadership role. There was a hydrologist, a plant/wildlife ecologist, a fisheries biologist, a career resource mgr/collaboration specialist and a soil scientist. Each individual contributed their piece of collective wisdom and helped in providing a synergistic approach to analyzing and discussing each reach.
250	Extensive experience with natural resource challenges and engaging the public in evaluation and survey processes. Facilitation techniques that enable collaborative groups to make positive progress and increase understanding among members.
251	For this project, there were two team leaders. One represented [...], while the other represented the [...]. For the most part the strengths of both were technical knowledge on the mechanics of rivers as they relate to grazing. Even though this project had a lot of politics and very complicated processes, both leaders were able to clearly describe the current situation and processes. By doing so, the group discussions were much easier to talk openly.
252	Open to suggestions, does a lot of upfront work, tries to get everyone in the watershed interested
253	Communication within/between local, state, federal governments. Excellent collaborator.
254	Communicated clear expectations to the [...] about participating in the assessment, which added extra work to their plates so they did need that communication.
255	A commitment to constructive action.
256	Effective communicator.
257	The ability to keep an open, free, and positive atmosphere within the group.
258	Open, motivated, driven, team player, goal oriented, deals with conflict in pleasant manner, constantly on learning curve to improve.

Respondent	Response to Question 41: What are the strengths of the team leader?
259	[...] is very good at facilitating discussions that are potentially controversial in nature amongst an extremely diverse group. [...] is very good at focusing on each individual's personal needs. [...] is very good at letting everyone feel that their participation is critical to the team's overall success
260	Knowledgably about all the partners issues and projects. Is at ALL of the [...] meetings to know firsthand what the County's priorities are and if they differ from the committee's.
261	Being a diverse person.
262	unbiased and neutral
263	Keeping a friendly atmosphere allowing people to feel they can participate
264	experience, commitment, and a collaborative spirit.
265	[...] is open to different opinions and allows everyone to participate
266	Openness and receptive to new ideas
267	[...] is fair, aware of the important issues, willing to confront problems confronted by the committee as well as problems within the committee. [...] is committed to developing a healthy watershed.
268	Strong understanding of the issues and commitment to carry out the direction of the group.
269	Excellent communication skills; Strong in looking at the big picture as well as the details; Creative in developing non-traditional partnerships
270	open minded, friendly, positive, hard working

Table L2

*Summary of responses to LaFasto and Larson (1996) Question 42 (Identifying remarks removed or edited)*

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
1	Patience with the process.
2	Reduce funding problems at higher levels
3	More assertiveness regarding expectations and sometimes disciplining of team members
4	No comments.
5	Hard to say. Team leader is effective, but a long period may go by before an update/status is given.
6	Nothing
7	More involvement of YMD director
8	Become more educated about watershed issues since [...] is new to this watershed

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
9	Better communication skills
10	None
11	less reactionary; when assigning tasks, make sure all of the background and pertinent information is given, then trust the worker to make the correct decision - thats why they were hired.
12	Organizational skills and accountability procedures.
13	Clear and strong goals
14	More time to devote to the organization since it is one of many jobs being performed by the individual
15	Have more time to dedicate to managing the organization - now a subset of a real private sector job. Have an executive director to run the day to day work of the organization.
16	Perhaps addressing the lack of attendance or contribution of one or two Board members and replacing them with more active members might be an improvement. Finding the balance between commitment and expertise is often a juggling act when dealing with volunteer boards.
17	more effective organization via regular conf calls
18	more feed back to team members
19	For this implementation, no changes needed. For a more complex implementation, it is possible that some changes would have been helpful. But this wasn't the case and the fact remains that the team leader's style suited an implementation that required a straight-forward approach.
20	[...]needs to reach-out more to to old timers living in this valley, and try to gain their trust.
21	Trying to do too much with to few resources. We need to establish priorities and take on only the most important.
22	Personal appearance modifications might enhance credibility outside the group.
23	[...] re-evaluation of the agreed upon goals of the organization with a greater focus on improving the watershed health and less focus on maintaining a positive/supportive working relationship with federal agencies.
24	focus; training in organizational and personnel management
25	1. Clearly planned out organization goals and long term plan 2. Board membership roles, responsibilities, and elections.
26	A clear goal and priority actions rather than something for everyone
27	Organization conclusions
28	Decisiveness in choosing a direction, which would have the affect of not considering other new incoming views and may forgo important opportunities that arise once the direction has already been selected and the path embarked upon.
29	[...] could be a little more assertive
30	Increased knowledge of technical and regulatory issues surrounding the problem and more familiarity with local government limitations and policies which impede or render some of the identified priority goals as unreasonable; use team members' time wisely,

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
	increase meeting time efficiency
31	Move onto to next task or goal quicker
32	Refining [...] listening abilities. On more than one occasion the workgroup leader has solicited advice from workgroup members and has directly gone against those recommendations. It's insulting to the workgroup members and it is seen as disrespectful to the expertise of those workgroup members.
33	Can't think of any.
34	Increase technical knowledge/understanding.
35	DK
36	The leader has been in this role for less than a year and is still and the mission of the group is in transition too. The leader seems abit unsure at times but I feel this will improve as we find our way in the new phase of work.
37	The team leader isn't directly responsible for the groups decisions, as dictated by our voluntary, collaborative approach, so it's difficult for the team leader to have more influence over the group process.
38	A little more feedback between leader and group.
39	cover more material at each meeting to increase productivity
40	Dunno the answer, but overtime even the interesting subject matter can get boring as details are identified, assessed, floated [...]
41	The team leader does not interface well with local decision makers to gain long term consensus, which will be necessary to implement an effective strategy.
42	try to accomplish more in fewer sessions/try to encourage more commitment and participation from the members
43	I only occasionally would like to see more depth in the municipal water supply area, which I recognize is only a tiny piece of the whole picture. Mostly I think the leader is exceptional in most technical aspects of the project.
44	Fewer projects, the team gets spread too thin. Getting additional help. Checking more closely on the progress of other team members to see if they are getting their work done or meeting the project timeline.
45	Greater commitment by those who volunteer for the team, although that is outside the control of the team leader.
46	No changes needed
47	none
48	limit non-relevant digression by select few. Not an easy task.
49	when doing grant \$ need to be better organized with pass thru agencies.
50	Having the funds to pay [...] for more hours to get acquainted with [...] job and to "catch up" on a lapse of having a leader.
51	More time devoted to [...]
52	Better goal setting and accountability for employees to meet that goal



Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
53	Try not to let personal emotions interfere with less than exemplary behavior by individuals. Sometimes you have to remain on the long term track instead of trying to deal with short term battles.
54	Needs to prevent diatribes that take team off on unrelated tangents. Some team members use meetings as a forum to discuss their own objectives, and need to be led back to the main discussion.
55	confirmed funding
56	Needed to focus more on people and personalities, too wrapped up in funding issues
57	More money
58	The leader must work on goals not popularity.
59	It would be great if we had the money to supply [...] with a support person.
60	the formation of the organization and the involvement of the membership
61	No changes
62	Assurance of continued financial support for the organization.
63	Needs to involve more people from outside production agriculture that have different viewpoints and skills to contribute, and [...] has begun to do this.
64	A little more confidence in the technical areas.
65	None I can think of.
66	none
67	More resources
68	Try not to take on too much and not get too political
69	Stronger technical knowledge
70	1. Expand outreach into larger community group. 2. Find an action item for a large group to contribute and accomplish.
71	?/?
72	Can't think of anything other than more funding.
73	Our team leader is responsible for most of our organization's administration issues, e.g. budgeting, strategic planning, etc. If more of these issues could be addressed by board members, it would improve the effectiveness of our team leader by allowing more time to focus on our service activities and less on nuts-and-bolts organizational issues.
74	Take responsibility in your role as director in all capacities. The director is a leader, a planner and a guide for the structure of the organization in addition to an administrator. Others willing to help you in your role where you are weakest are an asset. Foster that willingness to help as it is a sign of a strong leader, not a weak one.
75	Nothing significant comes to mind.
76	Focus on team management, genuine commitment to cause, priority setting, public relations skills
77	More meetings, but this is virtually impossible to achieve given complexities of schedules and other commitments - the team is mostly volunteers.

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
78	as the focus of the group is turning towards raising money, training for the leader in fundraising would be a good idea
79	More money to work with.
80	Good facilitation skills.
81	Recognition of the actual leadership role; currently more co-led team structure
82	Probably need a little more structure in the program; clarifying more specific goals and steps to getting there; defining better timelines; overall, we are moving but it could be clearer where we are going and if we actually got there
83	A
84	Additional technical information in key areas Better presentation of the technical information to the team.
85	??
86	More communicative about reordering priorities
87	Can't think of any!
88	nothing specific
89	Includes the whole watershed, open focus to the whole group, not only the areas with the most money.
90	none noted
91	Avoid political agendas. Embrace non-market values of water (ie. Environmental Needs)
92	[...] is working on keeping the Mission and the timeline in view. This is a multi-year project, and it's easy to get tied up in the small stuff, losing sight of the ultimate goal and timeline.
93	Nothing comes to mind.
94	There are business, community, agency and non-profit organization members to the group. The team leader focuses the group objectives to support the non-profit group members rather than set goals for the group to work collaboratively to achieve the [...] Council's mission. Therefore, the team leader would be more effective if direction was established to uphold the group's mission and a collaborative style were exercised that valued each of the types of groups represented in the membership.
95	clear goals, funding
96	Better communication through e-mail - regular newsletter would help.
97	Needs to focus on the goal of the collaborative and help coordinate activities, not just have meetings where we tell each other stuff.
98	ability to see the larger context more clearly so as to more intelligently encourage strategies that make sense.
99	No comment
100	Be willing to accept that current perceptions are wrong and seek knowledge to strengthen our group rather than see the differences.
101	Our watershed coordinator is currently a volunteer. If [...] was paid, [...]could devote

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
	more energy to all aspects of the watershed council.
102	Funding the position, which was paid but is currently volunteered.
103	A strong supportive fund raising foundation for the council.
104	Perhaps begin the meeting with an ice breaker so we all get to know each other better and perhaps increase our ability for cooperative projects.
105	More time to work on the council business. Find a way to garner more community involvement.
106	no comment
107	Providing a bit more focus to meetings. A difficult challenge given the diverse makeup of the council and sometimes ambiguous objectives.
108	More information about what is going on, more control of the leadership meetings.
109	Increased expression of interest and support and understanding of [...] mission by the member communities and their leadership
110	Probably needs to get more team members contributing consistently to the overall effort (always the core problem with volunteer organizations).
111	The only think I can think of would be to allow for our leader to have more time to work on this volunteer committee and be able to spend more than the volunteer hours [...] already commits to this effort.
112	Team leader is not a designated full time coordinator. A full time coordinator would be helpful.
113	N/A
114	The team leader is excellent, but you can accomplish just so much without receiving funding either through solicitation or grants to help arrive at our goals within the watershed.
115	None that I can think of.
116	Better focus on priorities and choosing strategy
117	The group has intentionally chosen a collaborative model to strengthen the state's environmental movement overall while achieving our water management policy objectives. More funding for the partner organizations would allow fuller participation.
118	A little more balance and transparency about assignments,
119	I don't see much need for change. I suppose [...] would be more effective if [...] understood the technical details of water supply, but one reason we have a coalition is that we all bring different strengths - and others are on top of the technical stuff.
120	If [...] had a little more time to devote to the work that might improve it some, but overall I would say [...] is close to perfect for the job. However, I would also note that this is a true collaboration, and the "leader" is more of a facilitator of many knowledgeable people, each of whom assumes leadership for particular work.
121	Our coalition hopes the person is not a dominating "team leader," but rather a colleague who has taken on a lot of probably unwanted responsibilities as far as admin/guidance work, which is respected as well as given due for their personal expertise and experience.
122	I think more focus on distilling messages for the public would give us even greater clarity

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
	about our shared purpose.
123	I don't have any suggestions
124	There are no changes to improve the effectiveness of the team leader. Our group's challenges arise from the fact that the team leader has many demands (stemming from other projects) on [...] time so she is stretched pretty thin sometimes. There are also budgetary constraints inherent in the group's work/objectives that create on-going challenges for the team leader, who does very well given the constraints [...] faces (and with good cheer and good will, I might add).
125	N/A
126	No comment
127	??
128	[...] does need to have several close assistants so that [...] valuable time is used wisely and the delegatable tasks do not use up [...] time.
129	Can't think of any...
130	The group has no real authority to effect change; team leader must ensure that key partners remain involved.
131	I wish [...] could do even more things like this - I recognize that the total number of hours in the day are a limiting factor.
132	There is none at this time.
133	The team is from county, state, federal, and private sectors who all have different specialties. It is a large group and may need to be divided into sub-teams to further communication between those who do the same type work.
134	I am not sure.
135	More focused on fewer projects. More communication with core and extended team.
136	From my personal perspective, it would be nice to know what other projects the district is working on.
137	Too many tasks to effectively coordinate or achieve goals, lack of attention to personal needs (self or others) so work load is unsustainable
138	take on fewer roles/projects, focus more on fewer objectives
139	Not to worry about organization issues and concentrate on accomplishing tasks in community.
140	Can't think of any at the moment - so far the team leader has been great!
141	Needs to be fair to all team members. Needs to listen better to all team members.
142	-adherence to scheduling
143	Prioritize tasks to more effectively achieve goals, don't try to do too much, be a little more open to input from team members.
144	The vision should reflect the wider range of interests of members
145	better attention to detail, better ability to motivate others
146	stay on task, take a more active role in program direction

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
147	Better participation and attendance by team members.
148	Making the group independent of the [...] and hiring a facilitator/director who is not tainted by taking the [...] money to facilitate, i.e. manipulate, the group.
149	None.
150	Improved ability to prioritize and focus on priorities
151	needs to end discussions that are going on too long and getting no where
152	less procrastination
153	1. Attention to detail. 2. Keeping on track with the task.
154	Y
155	Can't think of any
156	more attentive to tasks
157	The ability to stay on focus of the topic being discussed.
158	For some team members the direct style may not be as warm and rewarding as a more relaxed people centric approach - rather than the goal oriented one? Think more about what kind of reward would be most meaningful for these professionals who are volunteering their time.
159	Better recognition of individual skills within organization
160	Reinforcement of the [...] goals and more focus on how the membership might help accomplish them.
161	[...] is very busy now with employment, young child. If [...] had full funding, [...] would be more effective
162	[...] continuing personal education about the scientific basics about watersheds and water quality. Also [...] realization to work with the governmental positions that already are in place managing the water quality efforts ( [...] doesn't need to reinvent the wheel). Concerning the questions above (34-40) – [...] really doesn't have training in group dynamics and group assessment, [...] just bulldozes ahead on [...] energetic enthusiasm and does get results. Sometimes, though, [...] seems to put considerable enthusiasm into something such as donations and [...] doesn't get sufficient resulting feedback or result... (which is standard when asking people to volunteer.) Such as [...] puts more effort into getting companies to donate items for a raffle than the actual dollar amount that is collected in the raffle compared to the effort and dollar amount of the of donated item.
163	Still learning to divest some of the every day tasks to others
164	Nothing.
165	We need more money!
166	less procrastination
167	an increase in knowledge
168	This is a volunteer organization and therefore some of the questions regarding feedback and performance management are a bit out of scope. I think the one item that would help improve [...] effectiveness is selecting fewer projects over a given time period to help us focus. In the past, [...] has had to do many things [...] to accomplish the many projects [...] has identified. Perhaps having a committee that could prioritize the ideas [...] comes

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
	up with rather than creating and prioritizing the projects [...] would help.
169	None at this time.
170	I can't think of any improvements that need to be made by the team leader.
171	It might help if [...] had more background on some of the trials and tribulations that other teams in the state have gone through.
172	Meeting notes could use more details
173	She seemed to do a very good job and no improvements seem necessary.
174	More conversance with technical and historical issues
175	More technical knowledge of subject area
176	can't think of any
177	Having someone more knowledgeable of t[...] and task at hand may help influence a stronger realization towards what needs to be done and also be able to coordinate better numbers as backing for reasoning.
178	Some team members did not attend very many meetings, making it difficult to maintain continuity at times. The leader did attempt to bring people up to speed.
179	Better knowledge of water quality issues.
180	Tighter scheduling and time control of individual topics
181	I cannot think of any changes that would have made the team leader more effective.
182	More willing to constructively address issues within the team that are hindering performance of entire team
183	Little more structure, more interaction with staff
184	Better evaluation process of team members. More productive in group meetings.
185	Less personal ego; greater collaboration with other similarly oriented organizations
186	Stronger focus on long-term planning and growth opportunities for organization
187	More open communication between team members and group leader, and among team members. More interaction with group leader and team members throughout the project, rather than just on specific tasks.
188	Financial resources are so thin that the group tends to spread itself thin on policy/science/advocacy efforts that are its core purpose. Prioritization is essential, and is done well, but opportunities nevertheless are dropped.
189	Financial resources are so thin that the group tends to spread itself thin on policy/science/advocacy efforts that are its core purpose. Prioritization is essential, and is done well, but opportunities nevertheless are dropped.
190	Can't think of any.
191	Being able to communicate highly technical issues so that everyone gets it.
192	Needs cooperation of board and management to develop strategic plan.
193	better command of relevant facts
194	Better communication and explanations. Also better reporting and accountability - and

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
	tracking thereof in the case of other members
195	be more receptive to other opinions
196	There is no easy answer to this question. The only way the leader might be more effective is if there was hard money allocated to the organization rather than the present soft money funding mechanisms.
197	True willingness to hear conflicting opinions
198	greater direct involvement with team members above meeting/planning/discussions
199	A bit more oversight after delegating responsibilities as to accomplishments and follow-up. A bit more brutal honesty as to when things are not accomplished in a timely manner or at all or of low quality.
200	N/A
201	Involve more diverse groups in decision making. Encourage the abandonment of the "old boys club". Get staff to fulfill responsibilities in a timely manner.
202	Some times it would help if [...] wasn't quite so excitable which occasionally makes it difficult to follow his presentations.
203	Becomes involved with many projects and may burn out in the end. Understand politics and be able to play in them when needed.
204	Ability to deal with problem personnel
205	Focusing the funding streams in the areas where the most work can be accomplished. To often we come to the end of a project and some portions of the team have not completed their deliverables and other portions of the team have to pick up the slack.
206	Attention to details.
207	Less strong headed
208	Not avoid challenges, being firm.
209	Refocus of the groups purpose. Clearer guidance as to what issues the group could have a beneficial effect to meet the goals of the [...].
210	I don't know.
211	None to offer
212	Pushing the Committee harder to fully engage.
213	determine role of team leader; determine specific role of team
214	Perhaps more time to meet as a group would be helpful, but with very busy schedules on the part of all tem members, that is difficult.
215	Stepping outside the governmental system to get a perspective from private industry and citizens who aren't steeped in the issues and semantics that insiders take for granted.
216	A little more assertiveness.
217	?
218	As a group we need to focus on accomplishing a couple of projects.
219	Increased active group members

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
220	Education
221	I think the team leader does an excellent job already.
222	If [...] parent agency gave [...] some purse strings. Right now all that can be done is to meet with the team; who then has to find the resources to accomplish the objectives.
223	To find ways to encourage involvement of team, design projects so there is some way that everyone can be involved.
224	aware of time at meetings, conflict resolution
225	Having a paid staff (versus volunteers) and more diverse and committed Board members to assist in the tasks and jobs that need to be done.
226	One of the challenges to this survey is staying focused on the current leader. Some of the previous leaders have had very different qualities. Currently the group is working hard to stay focused on defined priorities and that is probably the area that continues to need the most improvement.
227	I don't know how our leader could improve.
228	Increase ability to delegate.
229	None come to mind
230	To reign in off topic and unfocused discussions that are not relevant to the purpose of the group and are things which the group would have no control over anyhow.
231	Leader tends not to like meetings and has lately cut back on number of board meetings. Leaves some of us feeling that we are somewhat disconnected and not quite up to speed on progress of some projects.
232	[...] should keep meetings on track. Some members ramble on about things that have no relevance.
233	group participation
234	Sometimes overcommitted and loses track of "details" in project.
235	Get people more involved.
236	Have the team leader more involved in the activity of developing the computer code.
237	[...] needs to communicate more openly to the rest of his modeling team.
238	none
239	All geographical areas are not represented. The composition of the group is weighed heavily with environmentalists i.e. those opposed to any diversion of the river water. This imbalance has caused resentment among other members and possible limited the leaders effectiveness.
240	Returning more often to and reiterating with the collaborative modeling team where the project is in relationship to project goals and the overall goals of the larger project with which it is associated. Making sure that all team members are up-to-date with direction changes and decisions made in the larger project that affect the collaborative modeling project.
241	1. Put the foot down once in awhile. Sometimes the collaborative aspect overtakes getting to where we need to be.



Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
	2. Assign more tasks to individual members, not just members of your own staff?
242	More aggressive at tasking other team members with specific duties and goals.
243	Probably have more control over a very diverse group of participants, i.e., some participants tend to dominate the group a bit too much.
244	Take a more pro-active approach at keeping interactions above-board, without personal slanders and attacks during the team meetings. I did not feel comfortable in some meetings, I did not like being spoken to in a condescending, patronizing tone of voice by certain team members. I did not like implications of lack of professional credibility just because of who I work for.
245	The team leader was hired by a particular agency to run this process, and this complicates a perception of impartialness (i.e. that [...] caters to the lead person with this agency, and has a kind of friendship with this [...].)
246	Can't think of any at this point.
247	Longer contract to allow for follow-through on initial collaboration project. A little better clarity on who the client is.
248	A more open approach to the actual problems rather than what dominant group might wish the outcome to be.
249	Some of the team members walked faster than others, making real time communication difficult at times. There was valuable plant and plant community info being presented. Perhaps keeping the group together more would allow more direct sharing.
250	Clear outline of roles and responsibilities for members of collaborative efforts. Reduced influence of personal bias toward participants in the collaboration process.
251	Bring more of the public and outside folks into the process. Even though this process was open to these folks, not many showed up after the first meeting. Keeping the public involved is one thing that could be improved upon.
252	More aware of participants views and making sure they have opportunities to be expressed.
253	Establish a long-term funding source to maintain the leader position overtime.
254	(1) Be more involved in the fieldwork portion of the assessment to actually see for themselves the condition of the land and hear all the discussion, because management decisions were made after the assessment. (2) Make sure that new Interdisciplinary Team members who started working on the [...] after the assessment become familiar with reports and interpretations.
255	More clarity on [...] role. More confidence in [...] own leadership.
256	None.
257	Give [...] a gavel!
258	attack inept public agencies and their personnel more openly.
259	More technical experience of a general nature. This will probably will develop over time.
260	I can not think of any.
261	To recognize the value all resources available at that time.
262	what are our goals and priorities? Seems cloudy these days.

Respondent	Response to Question 42: What one or two changes are most likely to improve the effectiveness of the team leader?
263	Focus on goals and make the participants accountable to get things done.
264	I have no suggestions.
265	To provide better background information in layman's terms
266	Listening to others
267	More experience in dealing with people problems but this is something that will happen over time.
268	Reiteration of goals of the committee
269	More proactive action by volunteers on the committee (it is often difficult when working with a completely volunteer group - trying to encourage them to step-up rather than always looking for direction from the team leader.
270	more hours in a day, paid to volunteer

APPENDIX M: SUMMARY OF RESPONDENT CULTURAL DATA SCORES

Table M1

*Raw team mean scores for Cameron & Quinn (1999) OCAI cultural types*

<i>Team</i>	<i>Team Mean Scores for Each Cameron and Quinn (1999) Culture Type</i>			
	<i>Culture 1:</i>	<i>Culture 2:</i>	<i>Culture 3:</i>	<i>Culture 4:</i>
	<i>Clan</i>	<i>Hierarchy</i>	<i>Adhocracy</i>	<i>Market</i>
1	33.65	37.50	12.40	16.46
2	47.17	13.17	26.83	12.83
3	47.22	17.50	22.22	13.06
4	35.56	35.83	9.72	18.89
5	38.19	14.17	32.92	14.72
6	35.00	27.67	21.58	15.75
7	37.92	31.94	16.81	13.33
8	39.76	22.74	20.95	16.55
9	34.58	29.00	17.58	18.83
10	34.00	30.67	22.83	12.50
11	45.00	14.81	28.43	11.76
12	52.36	10.75	27.78	9.11
13	37.29	14.79	23.96	23.96
14	39.06	21.79	23.65	15.50
15	53.48	23.94	15.00	7.58
16	34.58	34.79	15.83	14.79
17	59.83	28.67	7.39	4.11
18	44.58	33.33	14.17	7.92
19	42.81	14.58	18.54	24.06
20	47.35	16.47	22.21	13.97
21	46.04	8.96	30.21	14.79
22	35.00	23.24	27.26	14.50
23	29.17	35.29	22.92	12.63
24	36.25	32.92	17.50	13.33
25	44.38	18.33	27.92	9.38
26	57.33	17.80	13.87	11.00
27	46.15	14.27	27.29	12.29
28	41.24	24.78	20.38	13.59
29	38.61	11.32	29.86	20.21
30	35.47	17.63	27.04	19.86
31	40.56	34.72	14.81	9.91
32	42.02	27.50	12.74	17.74
33	45.13	19.43	20.37	15.07
34	47.92	25.42	12.92	13.75
35	28.35	25.65	22.21	23.79
36	47.50	22.26	19.76	10.48
37	43.33	21.35	20.52	14.79
38	46.35	15.42	20.94	17.29
Mean	41.85	22.91	20.77	14.48
Median	41.63	22.50	20.94	14.23
Max	59.83	37.50	32.92	24.06

<i>Team</i>	<i>Team Mean Scores for Each Cameron and Quinn (1999) Culture Type</i>			
	<i>Culture 1:</i>	<i>Culture 2:</i>	<i>Culture 3:</i>	<i>Culture 4:</i>
	<i>Clan</i>	<i>Hierarchy</i>	<i>Adhocracy</i>	<i>Market</i>
Min	28.35	8.96	7.39	4.11
Std Dev	7.20	8.12	6.15	4.44

Table M2

*Raw individual respondent scores for Cameron & Quinn (1999) OCAI cultural types*

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
1	12.50	62.50	0.00	25.00
2	35.00	10.83	36.67	17.50
3	36.67	35.00	18.33	10.00
4	23.33	35.00	20.83	20.83
5	30.00	39.17	9.17	21.67
6	70.83	21.67	2.50	5.00
7	16.67	58.33	0.00	25.00
8	44.17	37.50	11.67	6.67
9	40.83	15.83	25.00	18.33
10	53.33	16.67	17.50	12.50
11	40.83	6.67	42.50	10.00
12	68.33	5.83	16.67	9.17
13	32.50	20.83	32.50	14.17
14	75.83	15.00	6.67	2.50
15	43.33	21.67	14.17	20.83
16	22.50	15.83	45.83	15.83
17	53.33	33.33	6.67	6.67
18	26.67	47.50	10.00	15.83
19	26.67	26.67	12.50	34.17
20	54.17	16.67	25.00	4.17
21	42.50	6.67	30.83	20.00
22	50.83	13.33	25.83	10.00
23	11.67	15.00	30.83	42.50
24	15.00	5.00	68.33	11.67
25	55.00	28.33	16.67	0.00

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
26	30.00	40.83	17.50	11.67
27	24.17	20.00	30.83	25.00
28	40.00	25.00	21.67	13.33
29	34.17	43.33	16.67	5.83
30	41.67	16.67	27.50	14.17
31	41.67	8.33	36.67	13.33
32	25.83	31.67	7.50	35.00
33	46.67	21.67	23.33	8.33
34	33.33	25.83	25.00	15.83
35	32.50	43.33	9.17	15.00
36	35.83	17.50	32.50	14.17
37	33.33	26.67	25.00	15.00
38	46.67	27.50	17.50	8.33
39	65.83	25.00	5.00	4.17
40	33.33	55.00	3.33	8.33
41	12.50	40.00	17.50	30.00
42	86.67	10.00	3.33	0.00
43	25.83	24.17	24.17	25.83
44	31.67	15.00	41.67	11.67
45	35.83	20.00	25.83	18.33
46	45.00	25.00	20.83	9.17
47	31.67	23.33	23.33	21.67
48	21.67	41.67	7.50	29.17
49	26.67	26.67	18.33	28.33
50	50.00	46.67	3.33	0.00
51	31.67	17.50	25.83	25.00
52	37.50	30.00	21.67	10.83
53	15.00	24.17	30.00	30.83
54	26.67	34.17	16.67	22.50
55	39.17	29.17	15.83	15.83
56	47.50	27.50	14.17	10.83
57	43.33	31.67	0.00	25.00
58	28.33	22.50	30.00	19.17
59	38.33	23.33	20.00	18.33

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
60	28.33	50.00	15.83	5.83
61	33.33	46.67	10.00	10.00
62	26.67	20.00	33.33	20.00
63	43.33	13.33	35.00	8.33
64	50.83	23.33	19.17	6.67
65	35.83	20.83	25.83	17.50
66	88.33	0.83	10.00	0.83
67	25.00	15.00	30.00	30.00
68	35.00	10.83	50.00	4.17
69	37.50	20.00	30.00	12.50
70	49.17	20.00	19.17	11.67
71	44.17	17.50	30.00	8.33
72	39.17	5.00	41.67	14.17
73	45.00	6.17	25.83	23.00
74	18.33	1.67	73.33	6.67
75	80.00	6.67	10.00	3.33
76	54.17	20.83	15.00	10.00
77	72.50	2.50	16.67	8.33
78	44.17	26.67	25.83	3.33
79	21.67	23.33	16.67	38.33
80	41.67	12.50	23.33	22.50
81	42.50	11.67	29.17	16.67
82	43.33	11.67	26.67	18.33
83	37.67	15.50	23.00	23.83
84	45.83	6.67	40.83	6.67
85	55.83	15.83	18.33	10.00
86	29.17	24.17	22.50	24.17
87	64.17	11.67	23.33	0.83
88	40.00	9.17	38.33	12.50
89	23.33	33.33	20.83	22.50
90	26.67	38.33	6.67	28.33
91	18.33	58.33	8.33	15.00
92	45.83	10.00	32.50	11.67
93	42.83	16.67	25.50	15.00

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
94	66.67	33.33	0.00	0.00
95	49.17	24.17	17.50	9.17
96	37.50	40.83	8.33	13.33
97	23.33	61.67	7.50	7.50
98	35.00	35.83	15.83	13.33
99	60.00	5.00	22.50	12.50
100	52.50	23.33	14.17	10.00
101	71.67	5.00	18.33	5.00
102	59.17	11.67	23.33	5.83
103	78.33	5.83	13.33	2.50
104	55.00	16.67	24.17	4.17
105	56.67	16.67	15.83	10.83
106	10.83	64.17	4.17	20.83
107	45.00	30.83	19.17	5.00
108	25.83	27.50	24.17	22.50
109	42.50	41.67	9.17	6.67
110	70.00	18.33	9.17	2.50
111	67.00	26.00	3.83	3.17
112	34.17	61.67	0.83	3.33
113	47.50	18.33	31.67	2.50
114	42.50	25.83	15.00	16.67
115	54.17	27.50	9.17	9.17
116	63.33	21.67	3.33	11.67
117	55.00	11.67	13.33	20.00
118	60.00	13.33	15.00	11.67
119	38.33	16.67	6.67	38.33
120	28.33	4.17	26.67	40.83
121	35.83	15.83	26.67	21.67
122	29.17	15.83	25.00	30.00
123	32.50	17.50	31.67	18.33
124	41.67	7.50	45.83	5.00
125	51.67	28.33	9.17	10.83
126	31.67	21.67	25.00	21.67
127	55.00	18.33	13.33	13.33



Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
128	60.00	16.17	15.17	8.67
129	40.83	23.33	21.67	14.17
130	83.33	8.33	0.00	8.33
131	52.50	5.00	24.17	18.33
132	23.33	24.17	35.00	17.50
133	30.83	17.50	34.17	17.50
134	50.00	10.83	20.83	18.33
135	34.17	14.17	15.83	35.83
136	50.83	5.83	38.33	5.00
137	26.67	9.17	45.83	18.33
138	72.50	6.67	20.83	0.00
139	26.67	25.00	18.33	30.00
140	61.67	16.67	19.17	2.50
141	21.67	6.67	61.67	10.00
142	34.17	23.33	39.17	3.33
143	35.00	28.33	15.00	21.67
144	32.50	31.83	18.33	17.33
145	33.33	30.83	19.17	16.67
146	34.17	25.33	24.17	16.33
147	39.17	22.50	22.50	15.83
148	3.33	80.83	12.50	3.33
149	40.00	12.50	32.50	15.00
150	27.50	23.33	27.50	21.67
151	45.00	42.50	7.50	5.00
152	55.00	17.50	22.50	5.00
153	33.33	29.17	29.17	8.33
154	40.00	16.67	28.33	15.00
155	49.17	10.00	31.67	9.17
156	35.00	25.00	21.67	18.33
157	56.67	14.83	15.17	13.33
158	76.67	20.00	0.00	3.33
159	75.00	4.17	19.17	1.67
160	43.33	25.00	13.33	18.33
161	45.83	9.17	36.67	8.33

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
162	55.83	8.33	19.17	16.67
163	41.67	16.67	33.33	8.33
164	45.00	21.67	30.00	3.33
165	42.50	7.50	27.50	22.50
166	55.00	3.33	21.67	20.00
167	30.83	25.00	28.33	15.83
168	52.50	22.50	21.67	3.33
169	37.83	33.83	15.83	12.50
170	47.50	30.00	16.67	5.83
171	65.00	22.50	11.67	0.83
172	14.17	22.50	35.00	28.33
173	20.00	45.00	15.00	20.00
174	43.33	20.00	25.00	11.67
175	78.33	1.67	10.00	10.00
176	27.50	25.00	22.50	25.00
177	21.67	49.17	20.00	9.17
178	25.83	15.83	35.83	22.50
179	29.17	28.33	25.83	16.67
180	66.67	20.83	8.33	4.17
181	59.17	7.50	23.33	10.00
182	41.67	20.83	21.67	15.83
183	46.67	8.33	24.17	20.83
184	45.00	13.33	36.67	5.00
185	24.17	12.50	34.17	29.17
186	20.83	5.00	33.33	40.83
187	40.00	27.50	24.17	8.33
188	36.67	9.17	35.83	18.33
189	27.50	1.67	35.00	35.83
190	58.33	23.33	11.67	6.67
191	44.17	5.83	35.00	15.00
192	50.00	8.33	33.33	8.33
193	28.33	0.00	33.33	38.33
194	35.00	8.33	29.17	27.50
195	43.33	28.33	20.83	7.50

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
196	35.83	29.17	15.00	20.00
197	16.50	0.00	41.50	42.00
198	40.50	19.17	22.50	17.83
199	53.33	15.00	21.67	10.00
200	27.50	19.17	32.50	20.83
201	44.17	24.17	21.67	10.00
202	26.67	12.50	31.67	29.17
203	25.00	15.00	32.50	27.50
204	42.50	15.00	31.67	10.83
205	33.33	15.00	39.17	12.50
206	37.50	28.33	11.67	22.50
207	49.17	40.00	10.00	0.83
208	54.17	29.17	0.00	16.67
209	20.00	45.00	18.33	16.67
210	50.83	29.17	10.83	9.17
211	41.67	15.00	25.00	18.33
212	25.83	38.33	23.33	12.50
213	36.67	45.00	11.67	6.67
214	59.17	13.33	27.50	0.00
215	27.50	57.50	6.67	8.33
216	45.00	30.83	9.17	15.00
217	8.33	41.67	25.00	25.00
218	88.33	8.33	0.00	3.33
219	40.00	40.83	8.33	10.83
220	61.67	10.83	11.67	15.83
221	35.83	20.00	19.17	25.00
222	15.00	40.00	15.83	29.17
223	30.00	15.83	32.50	21.67
224	53.33	15.00	20.00	11.67
225	54.17	21.67	21.67	2.50
226	30.00	22.50	22.50	25.00
227	43.33	16.67	30.00	10.00
228	68.33	10.00	11.67	10.00
229	55.00	7.50	30.00	7.50

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
230	26.17	31.50	9.17	33.17
231	45.83	34.17	5.83	14.17
232	57.50	30.00	2.50	10.00
233	38.33	20.83	23.33	17.50
234	25.00	16.67	16.67	41.67
235	29.17	21.67	26.67	22.50
236	30.17	50.33	14.33	5.17
237	41.67	26.67	26.67	5.00
238	11.67	25.00	18.33	45.00
239	20.00	21.67	20.83	37.50
240	41.67	14.17	35.00	9.17
241	25.83	25.83	25.83	22.50
242	34.17	18.00	25.00	22.83
243	32.50	16.67	19.17	31.67
244	29.17	34.17	20.83	15.83
245	30.83	29.17	15.83	24.17
246	26.67	29.17	23.33	20.83
247	18.33	30.00	22.50	29.17
248	30.83	46.67	4.17	18.33
249	39.17	15.83	30.83	14.17
250	46.67	21.67	21.67	10.00
251	60.83	15.00	19.17	5.00
252	46.67	16.67	25.00	11.67
253	78.33	1.67	19.17	0.83
254	30.00	38.33	18.33	13.33
255	50.83	25.83	17.50	5.83
256	50.00	16.67	16.67	16.67
257	75.83	2.50	15.00	6.67
258	47.50	5.83	28.33	18.33
259	26.67	13.33	32.50	27.50
260	50.00	11.67	24.17	14.17
261	33.33	20.00	23.33	23.33
262	12.50	75.00	6.67	5.83
263	34.17	22.50	24.17	19.17

Respondent	Clan Culture	Hierarchy	Adhocracy	Market Culture
		Culture	Culture	
264	55.00	17.50	8.33	19.17
265	33.33	13.33	21.67	31.67
266	42.50	25.00	19.17	13.33
267	39.17	20.83	22.50	17.50
268	31.67	7.50	42.50	18.33
269	85.00	0.00	12.50	2.50
270	50.00	16.67	16.67	16.67
Mean	41.19	22.25	21.42	15.15
Median	40.00	20.83	21.67	14.17
Maximum	88.33	80.83	73.33	45.00
Minimum	3.33	0.00	0.00	0.00
St Dev	16.14	13.76	11.38	9.59