Stakeholder Beliefs, Collaboration, and Policy Outcomes:

An Analysis of Colorado's Basin Roundtable Process

by

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As the implementation of collaborative governance processes in response to natural resource issues continues to grow, gaining a better understanding of what makes some processes more successful than others is crucial to promoting effective future resource governance. Following one of the worst droughts in state history, Colorado implemented its own collaborative water planning and governance process in the form of Basin Roundtables. Each Roundtable, composed of diverse stakeholders as defined by the enacting legislation, works together to assess its home basin's current and future water needs and to propose solutions that ideally satisfy a wide variety of water users while simultaneously resulting in more sustainable future water use. Using data from twenty-eight comprehensive interviews with Roundtable participants, as well as direct observations of Roundtable meetings across the state, this study analyzes the Roundtable process as a case study of collaborative governance, paying specific attention to how stakeholders interact with one another to form coalitions and produce outcomes. While Roundtable members do not appear to alter their core values or form strict coalitions as a result of interacting with others in this process, they do learn about one another's values and work cooperatively to reach consensus on a diversity of formal and informal outcomes. However, these outcomes are limited by a variety of biophysical, social, and political factors that may restrict the Roundtable process from creating major changes to Colorado's water governance regime. Moreover, while the norm of consensus may serve as a motivator for Roundtable members to strive for solutions that truly benefit all groups, it may also limit the scope of available solutions to those that do not vary greatly from the status quo. This thesis closes with a number of hypotheses that emerge from this exploratory research that can be tested more formally in future studies.

Dedication

To Abraham,
for letting me drive your truck across the state without asking
just so I could attend a Roundtable meeting in Craig, Colorado
(and for joining me on some of my other research-related adventures).
Thank you for being ever-critical of my work and for helping me to gain
a totally new appreciation for Colorado's rivers over the past year.

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I would like to begin by thanking my committee members—Deserai Crow, Doug Kenney, and Krister Andersson—for all of the support, encouragement, and criticism you have provided me on this thesis and related projects. I am constantly inspired by your accomplishments, excellent advice, and intellect, and am honored to present my work in front of this committee.

A special thank you goes to my advisor and committee chair, Deserai Crow, for your endless encouragement, positive attitude, and willingness to go out of your way to help me (even if it means signing a hundred forms for the same damn scholarship). I am thankful for the guidance you have provided at every step of this project—even when neither of us knew that this would turn into a master's thesis. Your advice and direction is invaluable not only for my academic work, but also for my development as a scholar in the field. I look forward to expanding this project with you in the coming years.

I would also like to thank my colleagues Abby Kuranz, for critiquing countless drafts of papers related to this topic over the past two years, and Adrianne Kroepsch, for first making me aware of the Roundtable process only days after I arrived in Colorado. This project has developed so much because of both of you and the many other colleagues, professors, and friends who have enthused my constant waxings on this topic in and out of the classroom.

Finally, I am incredibly grateful for the kindness and willingness of my interviewees to share their stories and opinions with me. I can't thank you enough taking time out of your incredibly busy lives, in which you wrestle with some of the most complex issues I can think of, to speak with me about your experiences on the Roundtables. The deep and insightful data analyzed in this project would not have existed without your help.

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Chapter 1: Introduction

Over the past twenty-five years, the use of collaborative strategies in natural resource governance—and especially the governance of watersheds—has become increasingly common (Kenney et al., 2000). Collaborative processes often strive to bring together diverse stakeholders to design and carry out plans, policies, and projects that help to manage a resource in a way that is mutually acceptable to all involved. However, because stakeholders may hold opposing or even completely contradictory values about the resource and how it should be governed, these processes can be painstakingly slow, difficult, and unfulfilling for some participants. Consequently, understanding how collaborative governance processes actually function on-the-ground and what makes some processes more successful than others at achieving their stated goals is crucial to the promotion of effective future processes. Thus, this research broadly explores *the conditions under which collaborative governance processes can produce successful policy outcomes* by specifically examining the following research objectives (ROs): if and how stakeholder values are effectively reconciled in a collaborative process (RO1) and how outcomes are produced in collaborative policy processes (RO2).

These research objectives are investigated through a case study of Colorado's Interbasin Compact Committee (IBCC) and Basin Roundtable (Roundtable) process. Following a severe drought in 2002 that devastated much of Colorado, the state agency primarily in charge of governing the state's water resources—the Colorado Water Conservation Board (CWCB)—began the "most comprehensive analysis of Colorado water ever undertaken" (State of Colorado, 2014). As part of this analysis, a collaborative process was initiated in order to better understand water issues from the perspectives of a wide variety of water users on a local scale. Specifically, the 2005 Colorado Water for the 21st Century Act established the Interbasin Compact Committee

(IBCC), a group that aims to facilitate discussion among Colorado's river basins to address a variety of statewide water issues and future supply gaps (CWCB, 2014d). Simultaneously, "Basin Roundtables," or groups of diverse stakeholders from each of the state's hydrologic basins (plus the Denver Metro area) were created to bring local voices to the conversation (see Figure 1 for basin divisions). Each Roundtable is mandated to work collaboratively to assess its basin's water needs and devise recommendations for future water management in the face of uncertainties in climate and population growth.

Figure 1: Colorado's Basin Roundtables as shown in the SWSI 2010 Report (CWCB, 2011a)

After eight years of work on their individual basin assessments and various projects within their basins, the Roundtables have recently been tasked with providing insight and data on "statewide and basin-specific water values" that will inform Colorado's Water Plan, the first ever statewide water plan (CO Exec Order, 2013). During this process, Roundtable members will not only have to collaborate with other stakeholders in their basin as they have been doing for

approximately eight years, but they will have to collaborate across basins in order to create a functional statewide water plan, adding a new level of complexity to the process in the years to come.

This project employs an in depth case study approach in which the IBCC/Roundtable process serves as the broader case and each Roundtable serves as an individual unit of analysis in order to capture both the individuality of the basins as well as their common set of rules and procedures. Along with extensive observations of IBCC and Roundtable meetings across the state, twenty-eight in-depth, responsive interviews (Rubin & Rubin, 2005) were conducted with Roundtable participants in order to better understand the mechanisms underlying the process as a whole as well as the inner-workings of each Roundtable individually. These interviews were coded qualitatively, which allowed for an in-depth examination of themes and patterns within and across Roundtables (Miles & Huberman, 1994).

The Advocacy Coalition Framework (ACF), developed by Sabatier and Jenkins-Smith, is applied here in order to analyze how stakeholders participating in this collaborative governance process reconcile their values and produce outcomes within the limits of the larger subsystem of water governance in Colorado. Fundamental concepts to the ACF, such as coalition strategy, belief change and learning, hierarchical belief structures, and policy outputs (Sabatier and Weible, 2007), guided this research. Specific areas of the framework—namely Long-Term Coalition Opportunity Structures—were also examined for their relevance to collaborative processes. This approach allows not only for an in-depth investigation of some of the most important ACF variables in a new and understudied collaborative process in Colorado, but it also provides insight into the largely unexplored area of how collaborative processes and the negotiated policy agreements they attempt to produce fit into the ACF (Weible et al., 2011).

Arrangement of the Thesis

Following this introductory chapter is a chapter reviewing the existing literature on collaborative governance processes, with special attention paid to how success is defined in a collaborative process as well as the importance of incorporating a diversity of relevant interests into these processes. Additionally, the major theoretical framework used in this paper is introduced, and specific variables of analysis are defined. Chapter 3 then introduces the case study, first by providing a detailed explanation of the complexities of water law and governance in the state of Colorado that surround this case, and then by delving into the IBCC/Roundtable process as a whole as well as the issues facing each individual basin. Chapter 4 ties this case to the ACF literature and proposes how collaborative processes might best fit into the overall framework. After this, Chapter 5 details the research design and methods employed in this study. Chapters 6 and 7 present the results and discussion of the two major proposed research objectives. Finally, Chapter 8 draws conclusions about the challenges and successes uncovered in this case and how these can provide insight into the creation of effective collaborative governance processes. After recognizing the limitations of this research, the closing chapter also defines a number of hypotheses generated from this exploratory study that can be systematically tested in further research on the Roundtable process and similar collaborative governance processes.

Chapter 2: Literature Review
Assessing Collaborative Governance using the Advocacy Coalition Framework

Collaborative Governance Literature

Numerous experiments in the collaborative governance of natural resources have emerged rapidly since the 1990s (Kenney et al., 2000). While these processes may be referred to as collaborative, participatory, and interactive among many other terms, all of their definitions typically contain the following factors: inclusion of various stakeholders and/or the public, repeated face-to-face discussions among participants, and a mission to build consensus, often within a new, locally-scaled forum. In other words, collaborative governance processes bring together a wide variety of stakeholders to govern—or create and enforce rules about (Andersson et al., 2009)—a resource in a way that is mutually acceptable to all participants involved. Since their emergence, many scholars have hailed collaborative governance processes as the panacea for solving major conflicts associated with traditional, top-down resource governance (e.g. Johnson et al., 2005). As a result, a plethora of research has focused on critically evaluating these processes in order to determine if, when, and how they can truly be successful (Leach & Pelkey, 2001; Conley & Moote, 2002; Newig & Fritsch, 2009; Raadgever et al., 2012).

As alluded to above, many collaborative governance processes have emerged in response to failures associated with traditional modes of governance, such as high cost, politicization, and unsuccessful or incomplete implementation (Ansell & Gash, 2007). However, many criticisms of collaborative governance focus on similar failures. In this vein, Blomquist and Schlager (2005) find that collaborative processes (specifically those concerning watersheds, one of the most popular settings in which collaborative governance has been used) can be ineffective because of the difficulties inherent in defining resource boundaries, assembling appropriate decision-making bodies, and facilitating accountability among members that share governance

responsibilities. Margerum (2007) identifies similar factors that constrain effective collaboration in many locally-based forums in the US and Australia: transaction costs, limited perspective, organizational sustainability, policy issues (i.e. conflicts across multiple jurisdictions), and the adequacy of representation. Ananda and Proctor (2013) argue that "[c]urrent institutional configuration and rules, particularly, the norms of agency authority and administrative inflexibility act as the most critical obstacles to collaboration" (p. 105). However, what an "effective" collaborative governance process looks like to these scholars is often somewhat unclear, which makes a critical assessment of the success of any given process quite difficult; yet, relevant evaluations of how these time- and resource-intensive processes work—and what outcomes actually arise from them—are extremely important to participants, facilitators, policymakers, funders, advocates, and academics alike (Conley & Moote, 2003).

Defining "Success" in Collaborative Governance Processes

Many collaborative governance processes are based on specific goals to improve the quality of the resource being governed. Consequently, collaborative groups should be able to measure "success" by determining whether the quality of a resource has improved in the way they set out to improve it. However, Leach and Sabatier (2005), speaking specifically about collaborative watershed governance processes, explain that it is often difficult to collect reliable, long-term data that clearly demonstrate a group's causal effect on watershed health, especially when management goals are vague or the process is poorly funded. Thus, scholars often utilize "organizational" outcomes as measures of success when evaluating collaborative governance processes. These measures include evaluations of participants' satisfaction with the collaborative process or their *perceived* impact on the watershed, among other variables. When collaborative watershed governance processes also attempt to deal with issues other than water

quality such as resource allocation, biophysical outcomes as a representation of successful governance may be even more difficult to measure. Kenney (2000) suggests a definition of success somewhere in the middle of these extremes that focuses on "determining if [the] role [played by watershed groups] helps to create or contribute to processes *leading to* on-the-ground problem solving" (p. 10, emphasis mine).

Recognizing the complexity inherent in choosing one measure of success for collaborative governance processes, especially when combined with the difficulty of obtaining long-term, reliable data on the changing physical characteristics of the watershed, Leach et al. (2002) outline "a manageable set of six disjointed criteria that together can be used to adequately measure partnership success": 1) perceived effects of the partnership on specific problems in the watershed; 2) perceived effects of the partnership on human and social capital; 3) the extent of agreement reached among the stakeholders; 4) implementation of restoration projects; 5) monitoring projects; and 6) education and outreach projects (p. 652). They then test these six broad criteria on a sample of forty-four watershed partnerships in California in order to ensure that none of the variables are highly correlated and could thus be discarded, which they are not. These criteria provide an example of assessing both organizational outcomes and physical outcomes on the watershed to determine the success of the process, as suggested by Kenney (2000).

One of Leach et al.'s (2002) criteria—the extent of agreement reached among the stakeholders—is often cited as a particularly important measure of success in collaborative governance processes. Specifically, because "the goal of collaboration is typically to achieve some degree of consensus" (Ansell & Gash, 2007), the achievement of "consensus" among stakeholders is often equated with success. In their 2007 update to the Advocacy Coalition

Framework, Sabatier and Weible also attempt to recognize the central role of consensus in some governance processes by specifying a variable called "*degree of consensus needed for major policy change*" (p. 200); however, their specific purpose here is to allow for the ACF to be applied in non-Western governments that may be more consensus-oriented than the US. Importantly, because consensus is poorly defined in many cases, and can even lead to the suppression of conflicting views (Kenney, 2000), other measures of success must be examined along with consensus (Leach et al., 2002) when evaluating the success of a collaborative governance process.

Specific Variables to Consider in Assessments of Collaborative "Success"

Leach et al. (2002) specifically cite the need to "identify the structural, procedural, and contextual factors that allow some partnerships to achieve greater success than others" (p. 666). While there surely is a need to continue the identification of these factors in different and novel contexts, a number of scholars have outlined various criteria by which they either measure "success" or feel contribute to the success of a collaborative process (see Sabatier et al., 2005b, for a review of four major frameworks that have been used previously to help explain the success of various institutional arrangements). The following review of literature on measures specific to analyzing success in collaborative processes attempts to add to this dialogue. Although it is not nearly comprehensive, an overwhelming number of variables arise that appear to be important for creating—or at least evaluating—success in a collaborative governance process. However, certain patterns arise that emphasize some of the most important, or at least the most often recognized, of these variables. Table 1 outlines some of the most often cited criteria for success in collaborative governance processes and is followed by a discussion of most of the major studies contributing to the criteria. Taken together, these criteria not only provide a number of

Table 1. Factors Perceived as Important for Success in Collaborative Processes

Factor	Explanation/Reasoning for Factor's Importance	Studies Specifically Citing Factor
Funding/Resources	• Secure funding helps promote long-term project sustainability • Adequate funding eases the managerial process of allocating limited resources	Leach & Pelkey (2001); Bidwell & Ryan (2006); Sabatier & Weible (2007)
Leadership	• Effective, neutral leadership provides facilitation, mediation, & empowerment for the process • Bottom-up leadership is important for credibility & incorporating multiple knowledges into the process • A balance of leadership among institutional levels (i.e. local, state, and federal) is often required	Leach & Pelkey (2001); Sabatier & Weible (2007); Ansell & Gash (2008)
Trust	• Building relationships that foster interpersonal trust helps to devise mutually acceptable/beneficial solutions • Trust often doesn't occur naturally, but building it can be facilitated in many ways such as open information sharing and face-to-face dialogue	Leach & Pelkey (2001); Sabatier & Weible (2007); Ansell & Gash (2008)
Commitment	• Participants must be committed to the collaborative process rather than to their own individual interests • Commitment can be built through a sense of shared ownership in the process and a recognition of interdependence	Leach & Pelkey (2001); Sabatier & Weible (2007); Ansell & Gash (2008)
Goals/Institutional Design	• Successful partnerships focus on a number of attainable, clearly defined goals • Achieving goals creates an incentive to participate, especially when this achievement is dependent on many members • Understanding how the process is nested within current institutional structures is essential for realizing goals	Leach & Pelkey (2001); Ansell & Gash (2008); Ananda & Proctor (2013)
Diverse Composition and Participation	• Through the process of dealing with their own internal differences, diverse groups create collective goals that serve a broader number of interests • Diverse participation requires active recruiting of relevant interests—it does not happen naturally or by having membership simply be "open" to anyone	Leach & Pelkey (2001); Bidwell & Ryan (2006); Sabatier & Weible (2007)

useful variables to consider when examining a collaborative governance process, but they also reinforce the complexity of defining "success."

Leach and Pelkey (2001) review thirty-seven available studies on collaborative watershed partnerships, all of which define "success" in one of two broad ways: through "the adoption and/or implementation of watershed plans, projects, or policies, and their eventual impacts on environmental or socioeconomic indicators" (physical outcomes) or through measures of "trust building, conflict resolution, satisfying the stakeholders, and strengthening the long-term organizational capacity of the partnership" (organizational outcomes; p. 380). However, the authors identify 210 distinct "lessons learned" from these studies, which they then sort into 28 major themes, of which the most often identified are "adequate funding (62% of studies), effective leadership and management (59%), interpersonal trust (43%), and committed participants (43%)" (p. 378). Using a factor analysis, the authors identify four factors that explain 95% of the variance in the 28 themes: 1) balancing the partnership's resources with its scope of activities; 2) employing a flexible and informal partnership structure, 3) variables from the Alternative Dispute Resolution (ADR) framework (such as broad-based membership and consensus decision-making), and 4) variables from the Institutional Analysis and Development (IAD) framework (such as monitoring and well-defined process rules). Other studies have since delved more closely into examining one of two sets of these variables (see Ananda & Proctor [2013] for an in-depth look at institutional variables and collaborative processes).

In their study on collaborative partnership and design, Bidwell and Ryan (2006) seek "to investigate the relationship between the structure of watershed partnerships and their activities" (p. 830). Through interviews with the main facilitators of twenty-nine mature watershed partnerships in Oregon (i.e. those that were older than twenty-eight months at the time of study),

the authors developed a list of variables that appear to be important in determining whether the partnership's structure affects the number and type of physical tasks that are accomplished by the partnership (which can become part of an "outcomes" measure or another proxy measure of success all together). These variables include a number of partnership characteristics (e.g., size of watershed, age of partnership, organizational affiliations, presence of a coordinator, funding, diversity of stakeholder interests), which are then compared with the activities completed by each group. Key findings include that more homogenous groups "were less likely to complete scientific assessments or develop action plans, but were quite likely to conduct watershed improvement projects" (p. 834); affiliation with an organization was likely to significantly affect a partnership's activities (p. 840); and voluntary participation does not ensure that all interests are represented (p. 840).

In "The Advocacy Coalition Framework: Clarifications and Innovation," Sabatier and Weible (2007) combine concepts from the Advocacy Coalition Framework (ACF) and alternative dispute resolution (ADR) literature in order to define an alternative path to major policy change: negotiated agreements. Information on this type of policy change is included in a review of conditions that promote successful collaborative governance processes because Weible & Sabatier (2009) specifically define negotiated agreements as a product of collaborative governance processes; thus, the authors pre-suppose that the conditions likely to produce a successful negotiated agreement must occur in the context of a collaborative governance process. In other words, negotiated agreements come into play in situations when "coalitions [that] have been fighting for decades" eventually decide to collaborate, leading them to a "negotiated agreement representing substantial change from the status quo" (Sabatier & Weible, 2007, p. 205).

The authors provide a list of nine "prescriptions concerning the design of institutions for negotiating and implementing agreements"—in other words, collaborative institutions—that can influence the successful creation of negotiated agreements: 1) incentive to negotiate seriously: a hurting stalemate, 2) composition, 3) leadership, 4) consensus decision rule, 5) funding, 6) duration and commitment, 7) the importance of empirical issues, 8) the importance of building trust, and 9) alternate venues (Sabatier & Weible, 2007, p. 206-207). Evaluating the degree to which each of these factors exists in a collaborative process can be useful in determining whether the process is likely to be successful, at least in resolving disputes among competing groups so that they can come to a mutually agreeable outcome. Interestingly, consensus appears in this framework under the assumption that "given the multitude of venues of appeal in most Western political systems, a dissatisfied party can wreck the implementation of any agreement," and thus the authors advocate "including [these dissatisfied parties] in negotiations and granting them veto power" (p. 206).

In "Collaborative Governance in Theory and Practice," Ansel and Gash (2008) review 137 cases of collaborative governance "with the goal of elaborating a contingency model of collaborative governance" (p. 543), which enumerates a number of major categories of variables and important sub-variables that may be useful when assessing collaborative governance processes. These include 1) Starting Conditions (power/resources imbalance, incentives to participate, and prehistory of antagonism and cooperation); 2) Facilitative Leadership; 3) Institutional Design; and 4) the Collaborative Process (face-to-face dialogue, trust building, commitment to the process, shared understanding, and intermediate outcomes).

Finally, Conley and Moote (2003) specifically investigate the ways in which collaborative governance processes have been evaluated in previous literature. They argue that

most evaluations "focus on either characteristics of a process, such as inclusiveness of representation and decision-making methods, or outcomes" (p. 374), and provide some insight into each of these broad categories. However, these criteria can vary by scale and may either be limited or expanded by evaluators depending on their own purpose and preference, and well as the context of the process being evaluated. Although the authors compile a broad list of variables commonly found in past evaluations (including clear goals, diverse participation, and consensus-based decision making, as well as other environment, socio-economic, and process variables), they warn against selecting one comprehensive list of criteria. Instead, they argue that evaluators must make their motives, criteria, weightings, and data collection methods explicit in order to provide the most useful evaluations of collaborative governance processes.

Diversity and Representation in Collaborative Processes

One condition that is often named as a requirement for "success," or at least a variable for analysis, in collaborative governance processes by many of the scholars above is the inclusion of diverse interests. Because this research focuses on how stakeholders interact and produce outcomes, understanding how the makeup of collaborative groups influences decision-making is a particularly important sub-set of literature to hone in on. Here, diversity entails the inclusion of diverse viewpoints that represent all of the important stakeholders, as opposed to ethnic, gender, or age diversity, as it is possible that the group may not be diverse in these ways if they all represent one watershed area. Scholars also call this *composition* (Sabatier & Weible, 2007) or *representation*, which "refers to whether all relevant ideas and interests are included in collective choice" and "is the core democratic value associated with procedural legitimacy," according to Sabatier et al. (2005a, p. 8). Importantly, representation is not necessarily *inclusiveness*, or the concept of putting few restrictions on who can belong to a group, as "a perfectly inclusive

process can jeopardize representativeness…if it creates an imbalance in the number of individuals representing each major faction" (Leach, 2006, p. 101).

In the EPA's (1997) *Top 10 Watershed Lessons Learned*, the authors argue, "[t]he important thing is to include all key interest groups so that you can tap into their strength, increase your credibility, reduce duplication of effort, and make optimal use of limited funds" (p. 32). Here, diversity is used strategically to maximize available resources. In addition, Bidwell and Ryan (2006) claim, "diverse participation is extremely important if the process of collaboration is to result in changes in the management of water resources" (p. 840), especially because diverse participation can create a wider variety of outcomes. Alternatively, critics contend that a very diverse membership may bring too many ideas to the table at once and make the process unwieldy. For example, in their comprehensive review of 37 studies on watershed partnerships, Leach and Pelkey (2001) found that the fourth most-cited factor contributing to success is to "establish inclusive membership rules or to encourage diverse participation" (p. 381). However, these claims were contradicted by the fact that "eight studies concluded that a large, diverse membership creates serious problems" (p. 381). Other scholars such as Ansell and Gash (2007) worry that even if a process is diverse, power imbalances may exist among different stakeholders that prevent them from participating on the same level or even coming to the table at all. Thus, the underlying connection between diversity and success in collaborative processes must be further investigated.

The Advocacy Coalition Framework

As mentioned in the introduction, this project aims to understand the conditions under which collaborative governance processes can produce successful policy outcomes using Colorado's currently evolving water planning process as an in-depth case study. The Advocacy

Coalition Framework (ACF), initially developed by Paul Sabatier and Hank Jenkins-Smith and subsequently revised with the help of a variety of scholars, is a useful theoretical framework through which to conduct this analysis (see Figure 2). The ACF was created specifically to deal with "'wicked' problems—those involving substantial goal conflicts, important technical disputes, and multiple actors from several levels of government" (Sabatier & Weible, 2007, p. 189).

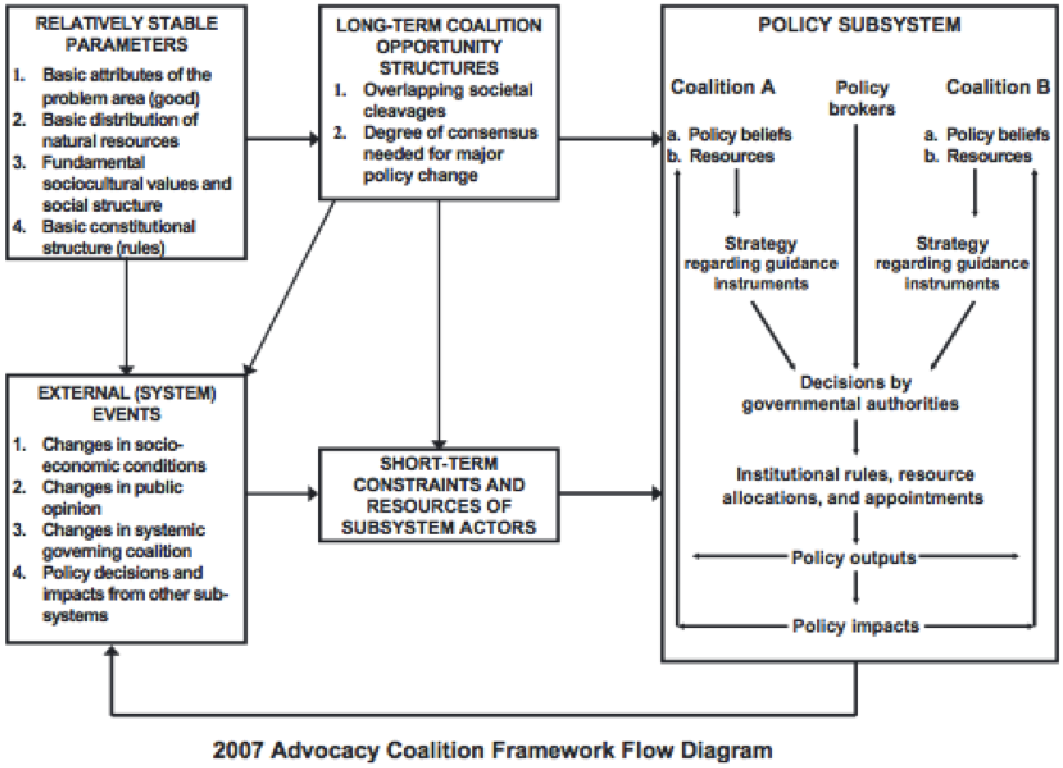

Figure 2: The 2007 Advocacy Coalition Framework Flow Diagram (Weible, Sabatier, & McQueen, 2009), © John Wiley and Sons.

The ACF relies on the idea that "stakeholder beliefs and behavior are embedded within informal networks and that policymaking is structured, in part, by the networks among policy participants" (Sabatier & Weible, 2007, p. 196). These networks, formally called subsystems, are bounded "by both a functional dimension (e.g. water) and a territorial one (e.g., California)" (Sabatier et al., 2005b). Sabatier argues that actors within a given policy subsystem "can be

aggregated into a number of advocacy coalitions composed of people from various organizations who share a set of normative and causal beliefs and who often act in concert" to further policies that align with their values (Sabatier, 1988, p. 133). Here, actors may experience policy-oriented learning, or "relatively enduring alterations of thought or behavioral intentions which result from experience and which are concerned with the attainment (or revision) of policy objectives" (p. 133). Actors are also more likely to change their secondary beliefs, or narrow ideas about how policies should be implemented, in order to meet collective goals while still maintaining their deeper ideological beliefs (Sabatier & Weible, 2007). These changes may feed back into the system though the effects of policy outputs, which can then alter system dynamics and future coalition processes (Sabatier, 1988). These four concepts—coalition development, belief change and learning, hierarchical belief structures, and policy outputs—are especially useful in analyzing collaborative governance processes and will be explained in depth in the following sub-sections. While allusions to how these concepts may help to explain stakeholder coordination and outcome production in the Roundtable process are included below, these ideas are expanded upon in much greater depth in the following chapters.

Coalition Development

Fundamental to the ACF is the idea that policy change takes place within policy subsystems. Sabatier (1988) explains that policy subsystems are comprised of "the interaction of actors from different institutions interested in a policy arena" (p. 131). These actors may come from both the private and public sectors but must be "actively concerned with a policy problem or issue" (Sabatier, 1988, p. 131). Policy subsystems can vary in size depending on the issue at hand, ranging from a variety of stakeholders from one small community to major parts of the federal government. However, these subsystems are often composed of "policy elites rather than

the general public," or people who typically have political experience and knowledge within the area in question (p. 144). This is the case with many participants in the Roundtable who have had past experience in collaborative decision-making processes surrounding water or other natural resources.

Sabatier (1988) argues that actors within a given policy subsystem "can be aggregated into a number of advocacy coalitions composed of people from various organizations who share a set of normative and causal beliefs and who often act in concert" to further policy objectives that align with their values (p. 133). In fact, an underlying premise of the ACF is that "the best way to deal with the multiplicity of actors in subsystems is to aggregate them into 'advocacy coalitions'" (Sabatier & Weible, 2007, p. 192). While some individuals or groups may not actually acknowledge that they are forming alliances with other stakeholders, policy scholars will categorize groups with shared goals into a coalition for analysis purposes. It may even be the case that more powerful or senior members of groups sense alliance-building while those members less involved with the political implications of the process are less conscious of being part of a coalition. Although there may be many stakeholders with seemingly different views, they can typically be grouped into two to five coalitions within the subsystem (Sabatier & Weible, 2007, p. 196).

While the conscious formation of coalitions solidifies relations between actors, it can simultaneously emphasize the major points of conflict between groups. Sabatier et al. (2005b) posit the existence of a phenomenon called "the devil shift," which describes "the tendency for actors to view their opponents as less trustworthy, more evil, and more powerful than they probably are" (p. 192). This, in turn, causes individuals with somewhat shared beliefs to band together, support each other, and hence form a stronger opposition to those with drastically

different central beliefs. However, actors may also form coalitions through "[w]eak coordination," which is hypothesized to "be an important strategy for coalitions in which organizational membership faces legal impediments that limit formalized alliances" (Sabatier & Weible, 2007, p. 197). In fact, coordinated behavior can simply "[involve] some degree of working together to achieve similar policy objectives" (p. 196). This "weak" or informal coalition building may apply to the Roundtables because their official membership is governed by the enacting legislation and thus members may not have as many opportunities to build strong coalitions with other actors of their choice, as those actors may not be formal participants in the process. Finally, coalitions may be stable due to "stable economic/organizational interests" more than their shared beliefs or their desire to coordinate (Sabatier, 1988, p. 142). Depending on the strength of alliances—as well as the level of belief about certain issues, which will be described in the next section—actors may change some beliefs while holding onto others during their participation in the policy process.

Hierarchical Belief Structures

The ACF posits a hierarchical belief structure that consists of the following categories: **deep** or normative core, near or **policy** core, and **secondary** (this paper will use the bolded terms for these categories, as emphasized in Sabatier & Weible, 2007). Deep core beliefs consist of "very general normative and ontological assumptions about human nature, the relative priority of fundamental values such as equality and liberty, the relative priority of the welfare of different groups, the proper role of government vs. markets in general, and about who should participate in governmental decision making" (Sabatier & Weible, 2007, p. 194). Actors rarely, if ever, sacrifice or change these broad, stable beliefs. In fact, coalitions are often grouped together based on shared core beliefs, even if other types of beliefs may vary among actors (Sabatier,

1988). For instance, in their study of water quality policy in the Lake Tahoe Basin, Weible and Sabatier (2009) provide an example of two conflicting deep core beliefs: "relative concern for the welfare of present versus future generations" (p. 196). While these beliefs may not change often, it is likely that threats to these deep core beliefs may "motivate [individuals] to expend scarce resources in policy debates" (Sabatier, 1988, p. 152).

Secondary to deep core beliefs are policy core beliefs, which are "applications of deep core beliefs that span an entire policy subsystem" and include concepts such as the proper roles of different governmental members and the priority of various policy-related values (Sabatier & Weible, 2007, p. 194-195). Continuing the example from the Lake Tahoe Basin study, potential policy core beliefs of stakeholders might be "relative priority for environmental quality versus economic development" (Weible & Sabatier, 2009, p. 197). Significantly, the same policy core beliefs may not always correspond directly to deep core beliefs for all stakeholders, and they are more likely to be changed but only over a long period of time. For instance, while stakeholders who hold a deep core belief in protecting the welfare of future generations may be more likely to prioritize the former of the above values ("relative priority for environmental quality"), they may instead promote economic development at an environmental cost in specific situations. They may also change their priorities if they begin to see environmental costs becoming too excessive, for example.

Within the realm of policy core beliefs, Sabatier and Jenkins-Smith identify "policy core policy preferences," or highly salient beliefs that span a subsystem and have caused a lasting rift within a coalition (cited in Sabatier & Weible, 2007, p. 195). These preferences essentially "provide the vision that guides coalition strategic behavior" by uniting or dividing actors (p. 195). They also serve as a middle ground between policy core beliefs and the lowest level in the

hierarchy, secondary beliefs, where belief correspondence may vary greatly. In this position, policy core policy preferences may be "the stickiest glue that binds coalitions together" (p. 195) while also being one of the most difficult levels of belief to observe.

Finally, secondary beliefs are "relatively narrow in scope," both geographically and substantively, and address specific issues such as the causes of a problem, budgetary applications, and other specifics about how a policy should be implemented (Sabatier & Weible, 2007, p. 196). Importantly, actors are more likely to change their secondary beliefs to meet collective goals while still maintaining their deeper ideological and policy-core beliefs. To conclude the example above, Weible and Sabatier (2009) suggest that secondary beliefs of actors in the Lake Tahoe Basin case study may include specific implementation strategies such as "preferences to restrict development in urbanized areas or to restrict building on steep lots that might cause erosion" (p. 197). Importantly, actors may be willing to sacrifice these specific conceptions of how ideas are carried out as long as the overall recommendations that are being put into place align with their deeper and more stable beliefs.

Using the ACF, policy scholars may group actors with slightly different secondary beliefs into the same coalition. In some cases, coalition members may also diverge on policy core beliefs, but it is unlikely that they will ever have drastically different deep core beliefs. Once actors actually begin to ally with one another in a policy process, they may experience belief change through policy-oriented learning.

Policy-Oriented Learning

Within a policy process, actors may experience a phenomenon known as policy-oriented learning, or "relatively enduring alterations of thought or behavioral intentions which result from experience [or new information] and which are concerned with the attainment (or revision)

of policy objectives" (Sabatier, 1988, p. 133). In other words, "learning" is described as a change in beliefs about a policy objective as a result of an experience or information. ACF scholars consider this alteration in beliefs to be one of the major pathways to policy change. In relation to the previous section concerning the hierarchical levels of beliefs held by actors, it is posited to be more likely that policy-oriented learning will alter actors' secondary beliefs, which can be changed with relatively little evidence, as opposed to deep core or policy core beliefs. Weible and Sabatier (2009) argue that collaborative policy subsystems "provide an optimal setting for learning from science and for learning across coalitions," as actors "cooperate, develop trust, and work with scientists in joint fact-finding to develop a shared knowledge base" (p. 208).

Other theories of policy scholarship, such as punctuated-equilibrium (PE) theory, have engaged the idea of policy-oriented learning within their frameworks. For example, True, Jones, and Baumgartner (2007) explain that through policy-oriented learning, "opposing groups can modify certain elements of their belief structure," which can lead to "substantial compromise and important changes in public policy" (p. 163). Within the PE framework, this "belief-adjustment" can lead to periods that are relatively stable and contain fewer major changes (punctuations) in policy. Importantly, the concept of policy-oriented learning as described within this theory recognizes that the values of stakeholders are dynamic and can change over time, amplifying the complexity of the policy-making process.

In addition to the changes or adjustments in belief described above, policy-oriented learning may also be operationalized in other ways. Specifically, May (1992) explains that policy learning generally "entails learning across multiple advocacy coalitions, leading to shared understandings of the viability of policy interventions and goals" (p. 340). This includes both

instrumental policy learning and social policy learning, which relate to creating new understandings about the viability of policy design or the social construction of a policy or issue, respectively. In other words, by observing actions such as a change in policy instruments being utilized (instrumental) or a redefinition of goals or scope of the policy (social) within a policy process, analysts can assume actors have experienced some sort of policy learning. Actors can also learn from the previous experiences of others who have implemented policies through a process known as lesson-drawing (Rose, 1991). Importantly, when learning through this mechanism, actors do not necessarily change their behaviors as a result of belief change; they may simply evaluate something that did not work properly or could not be transferred elsewhere, consequently broadening the scope of what actions are appropriate for the policy process in which they participate.

Outcomes

Sabatier (1988) explains that the "end result" of many policy negotiations is "one or more governmental programs which in turn produce policy outputs at the operational level" and ultimately "result in a variety of impacts on targeted problem parameters" (p. 133). Inherently, the ACF works to explain "factors affecting the reaching and implementing of [these] agreements" (Sabatier et al., 2005b, p. 198) by analyzing how coalitions interact within a policy subsystem. Outcomes, which contain both policy outputs and their impacts, are assumed to feed back into the policy subsystem as new information, perhaps promoting additional policy-oriented learning, which can encourage actors to seek additional changes in future processes (p. 133). Thus, although the outcomes of a policy process are organized as a part of the policy subsystem instead of a separate variable of analysis (see "Policy Subsystem" box in Figure 2), these

outcomes are critical in that they have the ability to reshape external variables and therefore affect future negotiations among coalitions.

Moreover, the policy alternatives available to coalitions may be fundamentally limited by the "relatively stable parameters" in a policy subsystem (Sabatier, 1988, p. 135). In other words, the basic attributes or distribution of a good, or the core values or rules implemented in a system, can automatically restrict certain alternatives from becoming viable outcomes. In a collaborative policy process with little formal decision-making authority such as that of the Roundtables, these constraints on outcomes, especially those that are radically different from current policies, may become even more pronounced. Moreover, challenging the "status quo" aspects of policy can be resource intensive, especially when other uncertainties about the issue exist. "Dynamic external factors," on the other hand, are able to "change substantially over the period of a decade or so" and thus have the ability to significantly affect policy change in the face of relatively stable parameters (Sabatier & Weible, 2007, p. 193) by altering the constraints and opportunities confronting a subsystem of actors (Sabatier, 1988, p. 136). These dynamic external factors include changes in socio-economic conditions, public option, and governing coalitions, as well as carry-over effects from decisions made in one subsystem to another. Both these stable and dynamic factors can significantly influence the outcomes of a policy process.

Summary

Four major variables from the ACF literature will be used to inform the following investigation of how stakeholders form coalitions and produce outcomes within a collaborative policy process:

1. Coalition Development: how coalitions form within a policy subsystem and to what degree they coordinate their actions

2. Hierarchical Belief Structures: whether actors prioritize core beliefs over beliefs about policymaking and implementation when making decisions and coordinating with others; what levels of belief that actors must converge upon in order to coordinate their actions

3. Policy-Oriented Learning: if and how actors learn from one another in this process, and how that learning is reflected in actors' policymaking objectives

4. Outcomes: what the formal and informal end results of policymaking look like, how they can potentially feedback into further processes in the subsystem, and how stable and dynamic factors can produce or limit outcomes

While the ACF certainly seems useful for analyzing collaborative processes and the negotiated agreements that they may create, this area has been largely unexplored (Weible et al., 2011). Following the next chapter, which will primarily introduce the case study on which this research focuses, a chapter on theoretical developments is included that uses information about the case study in question to begin assessing exactly where collaborative processes fit within the ACF.

Chapter 3: Case Introduction
Colorado Water Law History and the Emergence of the Roundtable Process

In order to understand the purpose of the Basin Roundtables in Colorado's water supply planning process, it is helpful to briefly discuss the complex legal history of water rights in the American West and the current major water uses in the state of Colorado. This chapter will then highlight Colorado's current and future water supply concerns and discuss where the Roundtables fit in to the process of developing potential solutions to these concerns.

Historic Water Allocation Regimes

The allocation of water in the Western US has a complex legal history, much of which has stemmed from the rejection of riparian doctrine. This riparian doctrine, which was established in Tyler v. Wilkinson (1827) and remains the basis for water allocation in many other areas such as the eastern US, declares, "every proprietor upon each bank of a river is entitled to the land, covered with water, to the middle thread of the stream" (cited in Hobbs, 1998, p. 28). Basically, this translates into the idea that those residents whose property abuts a water source have primary rights to use that water, as long as reasonable consideration is given to ensure water is available for residents further downstream. Western water law makes a significant departure from this method of allocation in the appropriation doctrine, which relies primarily on the policies of "[b]eneficial use and preservation" (Hobbs, 1998, p. 2) and the cornerstone "first in time, first in right" rule (Matthews, 2003, p. 40), which will be discussed in more detail below. Scholars such as David B. Schorr (2005) argue that principles stemming from historical miners' law and "contemporary radical, agrarian ideals of broadly distributed property and antimonopolism" truly underlie the formation of the West's allocation system (p. 2).

Fundamentally, western water law is rooted in an intricate system of water rights. In

order to obtain a water right in the state of Colorado specifically, three tenets must be fulfilled: "1) intent to use the water; 2) diversion of the water; and 3) application of the diverted water to a beneficial use" (Abeln, 2004, p. 520-521). Residents who obtain water rights are allowed—and traditionally expected—to move the water away from the stream through structures such as ditches and canals, even when they run through others residents' property, in order to put the water to "beneficial use." In other words, the "diversion requirement is based on the historic assumption that all legitimate 'beneficial uses' are off-stream" or inherently extractive (Kenney, 2003, p. 5). Beneficial uses historically included providing water for things like agriculture, ranching, municipal and industrial uses, and power generation (Hobbs, 1998, p. 8). While this requirement has been slightly modified over time to permit some environmental and recreational rights that keep water in the stream under specific circumstances (Hobbs, 1998; Charney, 2005; Crow, 2010), historical water law has essentially created a perfect situation for the development of "traditional" western water uses such as agriculture, ranching, and mining, which reap obvious benefits from the ability to move water away from its source. Furthermore, the fact that Colorado's Constitution states that all unappropriated water is available for appropriation, and that appropriation for a beneficial use will never be denied (Grantham, 2011, p. 2), makes it historically difficult for parties to argue that keeping water in the stream is important and legitimate under Colorado water law.

Additionally, the "first in time, fight in right" premise that governs this legal system dictates that those who hold older (i.e. senior) water rights have priority use of water over those who hold newer (i.e. junior) rights. In other words, users who allocate water "first" on a river system have water rights with earlier appropriation dates that must be prioritized before any user with a later appropriation date can receive his or her water. This "temporal priority" provides

water security to initial rights holder who may have invested in complex infrastructure to obtain their water (Matthews, 2003, p. 40). Important to this is the rule that users must continue to use their water right or risk forfeiture to the state due to non-use (p. 41). Unfortunately, this rule may discourage users from "improving efficiency, as any water saved (or 'salvaged') is deducted from the original right" (Kenney, 2003, p. 5). However, because the user must fail to use his or her complete water right each year over a period of ten years, and because most water users have other incentives aside from forfeiture to make use of their complete right, the "use it or lose it" rule is rarely implemented.

An additional layer to this complex rights system concerns the priority of uses in times of shortage concerning rights that have the same priority date. The Colorado Constitution clarifies that in times of shortage, or when a stream's flow is not sufficient to meet all demands on the stream, "those using the water for domestic purposes shall have the preference over those claiming for any other purpose, and those using the water for agricultural purposes shall have preference over those using the same for manufacturing" (Grantham, 2011, p. 2). This can potentially create a deeper layer of competition among users that hold water rights on the same stream, as those who hold senior rights in agriculture may actually have to forfeit water to junior domestic users during times of shortage *if their rights have the same priority date*. However, because junior domestic users in these situations often seek to purchase the agricultural water rights in water court in order to prevent this conflict form occurring, this regulation is also rarely implemented.

Importantly, all of these water rights are usufructary rights, which means that water rights holders only have the right to *use* the water, as opposed to exclusively owning the water. Essentially, this creates a situation in which water is both a private and public good, or "a shared

resource with multiple use rights (i.e. both public and private) existing in it at the same time" (Matthews, 2003, p. 41). This opens the door for water resources to be susceptible to public goods problems, specifically those related to common pool resources. Gardner et al. (1990) define a common pool resource as "sufficiently large natural or manmade resources that it is costly (but not necessarily impossible) to exclude potential beneficiaries from obtaining benefits from their use" (p. 335). As evidenced by Colorado's complex water rights system, excluding certain users from—or conversely, including only certain users in—using water resources is complicated and takes on many legal, political, and economic costs. Furthermore, when a resource is subtractable (i.e. units used by one user are not available to the other users) and has multiple appropriators (or people drawing from the resource), it is susceptible to experiencing a common-pool resource dilemma; this occurs when rational resource use by all users individually (at least in a profit-maximizing way) leads to an unsustainable outcome for the resource users as a group (Gardner et al., p. 335-336). Because water resources are often both difficult to exclude users from and highly subtractable, Heikkila and Schlager (2011) argue that officials governing state and interstate water resources "need to give greater thought to [Common Pool Resource Theory] principles before designing water supply and demand solutions" (p. 462). Thus, the unique aspects of this resource must be considered when examining current uses of water in Colorado.

Current Uses of Water in the West and Colorado

Kenney (2003) argues, "most water issues in the [West] can be summarized by a single word: competition. Two types of competition are most salient: between the agricultural/rural and municipal/urban sectors, and between human/economic uses and environmental/non-market uses" (p. 9). Each sector is not only concerned about obtaining *enough* water, but also about

ensuring "adequate supplies at desired levels of quality, cost and reliability" (Kenney, 2003, p. 9). Colorado's three major water user groups, as defined by the Colorado Water Conservation Board (CWCWB, 2014b), as well as their major points of competition are briefly described below. This is followed by a short discussion about inter-basin competition for water resources.

Agricultural Uses

According to the USDA's Economic Research Service (2012), many western states use up to ninety percent of their ground and surface water supplies in agricultural activities. Colorado is no different in this respect. On average, agricultural water use accounts for 86% of the total consumptive water use in Colorado and also makes up the largest consumptive water use in each individual basin; however, each basin still faces some amount of shortage of irrigation water required to produce their full crop each year (CWCB, 2014b). Colorado's agricultural sector produces a wide variety of livestock and crops, which account for $41 billion in total economic output each year, according to Davies et al. (2012). Agricultural land also provides "habitat for wildlife and open space" and maintains various "agritourism and recreational services" (CO Department of Agriculture), values which are shared and supported by many Coloradans regardless of the industry in which they work.

According to the 2010 Colorado's Statewide Water Supply Initiative (SWSI) Report, Colorado's agriculture is currently threatened by "buy-and-dry," or the purchase and transfer of water rights associated with irrigated land to municipalities for domestic supply. The report estimates that between 500,000-700,000 acres of irrigated land could potentially be dried up by 2050 if current trends in urbanization and water transfers continue (CWCB, 2011a, p. 4.32).

Municipal and Industrial Uses

According to Travis et al. (2005), the "West has grown faster than the country as a whole for much of the last century, and is likely to outpace national growth for the foreseeable future" (p. 2). Furthermore, "the distribution of the region's 63 million people is highly concentrated in cities…making the West the most highly urbanized region of the United States" (Kenney, 2003, p. 3). Travis et al. (2005) estimate that an additional 39.5 million people will move to the West by 2040, a 65% increase over the 2000 census statistics (p. 3). The primary and immediate needs of this growing "New West" population are increased municipal and industrial (M&I) water supplies. However, as of 2005, water for domestic, commercial, and industrial purposes, as well as water for industries such as aquaculture and thermoelectric generation, amounted to only 1,500 thousand acre feet (kaf) per year of total withdrawals in Colorado, compared to 13,800 kaf/year withdrawn for irrigated agriculture (total with withdrawals: 15,300 kaf/year; Kenny et al., 2009). Thus, although the M&I sectors are still using far less water than the agricultural sector, it is these sectors that are likely to see the biggest increase in demand in the future and will likely need to seek additional supplies from other user groups.

Nonconsumptive (Environmental and Recreational) Uses

Lawyer and legal scholar Charles Wilkinson (2012) argues that the set of inherently utilitarian principles that underlie western water law "walls off any ethical obligations to the animals, to the inanimate rivers, and to the inanimate and immobile canyons" (p. 368). This concern is central to environmentalists and recreationalists across Colorado who advocate for the diverse benefits of keeping water in the stream despite traditional definitions of "beneficial use." Issues for nonconsumptive users occur most often when water is removed from a stream for agricultural or municipal supply purposes, which can result in decreased flows and warmer

stream temperatures that threaten various riparian and aquatic habitats and the species that live within them. Less water in the stream also affects the benefits that humans derive from rivers and their surrounding areas, including natural filtration of drinking water, flood protection from wetland areas, and diverse recreational opportunities.

Two important areas of legislation concerning nonconsumptive water uses in Colorado include instream flow (ISF) rights and recreational in-channel diversion (RICD) rights. ISF rights, or rights held by owners who do not divert the water but rather keep it "in stream," inherently contradict some of the most fundamental historical tenets of Colorado water law. Basically, preserving water for ISF fails to meet all three requirements stated above that are necessary to obtain a water right: "1) intent to use the water; 2) diversion of the water; and 3) application of the diverted water to a beneficial use" (Abeln, 2004, p. 520-521). However, the state of Colorado modified this legal framework in 1973 to allow for ISF rights to fall under the category of a beneficial use in certain limited circumstances that help "correlate the activities of mankind with reasonable preservation of the natural environment" (Charney, 2005, p. 2). Still, "instream flow uses are generally looked upon as secondary to consumptive uses, or those which capture and control the stream in order to put it to beneficial use" (Almy and Shellhorn, 2007, p. 512). Additionally, because ISF rights generally have very junior appropriation dates, all users senior to the ISF right holder can withdraw their allotted quantity of water first, leaving little to no water for the ISF in some cases; however, the ISF right does become senior to all new water rights allocated on the stream in the future, which may provide some protection against further development of the water.

Moreover, Colorado has recently recognized recreational in-channel diversion (RICD) water rights, or rights that allot and protect stream flows for very specific recreational purposes

(Crow, 2010), as legitimate uses. Specifically, RICD rights are allotted to "help to establish or protect" a community's "recreational resources, such as white-water boating" or kayaking (Crow, 2012, p. 30). Similar to ISFs, RICD rights keep water in the stream rather than diverting it, which is why the application for these rights has been associated with much controversy since Golden, CO, applied for the first RICD right in 1998. Another similarity to ISF rights comes from the fact that RICD rights are still quite junior because of their newly granted legal status and thus would not hold much weight when holders of more senior water rights "call" their water in times of scarcity. Consequently, despite these amendments to Colorado's historical water allocation system that provide some protection for nonconsumptive uses, traditional consumptive uses still hold much power and influence in the world of Colorado water.

Tensions across the Continental Divide

In addition to conflicts among water user groups, another major source of tension arises from trans-basin diversions (TBDs), which are projects that typically transfer water across the Continental Divide from the Western Slope to the Eastern Slope in order to provide for the Front Range's growing population.[1] Colorado's first trans-basin diversion brought water from the Eagle River on the Western Slope to the Arkansas River on the Eastern Slope through the Ewing Ditch in 1880 (Nichols et al., 2001, p. 9). Today, numerous trans-basin diversions exist, many of them large projects that transport many thousands of acre feet of water between basins each year. For example, in Grand County alone, a number of major trans-basin projects (and many other small diversions) bring water to the Eastern Slope: the Colorado Big Thompson project diverts approximately 220,000 acre feet of water from the Colorado River's headwaters (approximately 60% of the river's native flows), while the Moffat Tunnel diverts 55,000 acre feet of water from

[1] TBDs may also occur when water is simply transferred from one basin to another, even if the transfer does not cross the Continental Divide, though this is less common.

the Fraser River (also approximately 60% of the Fraser's native flows; Klancke, 2012). Obviously, this displacement of water has created a situation rife with conflict, especially as water resources become increasingly threatened by a growing population and a warming climate.

Aside from the fact that basin-of-origin loses any return flows from water that is transferred out of the basin, the importing basin can use any TBD water "to extinction" (Nichols et al., 2001, p. 39). This means that the importing basin basically has endless opportunities for reuse until the water is completely removed from the hydrologic cycle, unlike in-basin water that must be used for a beneficial use then released back into the stream for the enjoyment or appropriation of other downstream users. For this reason, trans-basin diversion water is highly valued by growing municipalities on the Eastern Slope, exacerbating the existing contention between East Slope and West Slope users over existing and future TBD projects.

Colorado's Current and Future Water Supply

In 2002, Colorado experienced a drought that resulted in some of most severe water shortages on record, especially for areas such as the Front Range (Pielke et al., 2005). During the drought, native river flows throughout Colorado were reduced to approximately 14 million acre feet (maf), in comparison to the average flows of 16 maf, which required the use of approximately 6 maf of storage from reservoirs in one year alone (Colorado Foundation for Water Education, 2009). Following this drought, the Colorado Water Conservation Board (CWCB) began the "most comprehensive analysis of Colorado water ever undertaken" through the Statewide Water Supply Initiative (SWSI) process (State of Colorado, 2014). This process, which initially included a form of collaborative "roundtables," laid the groundwork for the Interbasin Compact Committee (IBCC) and Basin Roundtable process that is the focus of this study. SWSI 2010, the third and most comprehensive report that originated from this process,

found that Colorado would likely have a municipal and industrial water "gap" of between 190,000-360,000 acre feet per year by 2050 (CWCB, 2011b, pg. 5), which would mostly result from a predicted doubling of population within the next forty years and uncertainties in the amount of water needed for future energy development (Rowan et al., 2010). SWSI 2010 also cited that the default solution to this gap—the "buy-and-dry" of irrigated agriculture, a sector which is also already water-short on a yearly basis—"would have adverse environmental and economic impacts" on the state (CWCB, 2011b, p. 2).

The increasingly pronounced effects of climate change are likely to further complicate water management in Colorado. In 2012, the US Bureau of Reclamation released a major study that sought to "define current and future imbalances in water supply and demand in the [Colorado River] Basin and adjacent areas of the Basin States that receive Colorado River water over the next 50 years (through 2060)" in order to help "develop and analyze adaptation and mitigation strategies to resolve those imbalances" (US Bureau of Reclamation, 2013, p. 1). The *Colorado River Basin Water Supply and Demand Study* report explicated results such as general warming trends, decreased average springtime snowpack, and a "more severe" deficit of water supply (which began in 2000) "than any other deficit in the observed period" from 1906-2007 (p. 18). Based on these trends, the Bureau of Reclamation predicts that although there may be some increase in precipitation in the Colorado River Basin region, the overall area will likely experience continued warming and drying, as well as decreased snowpack and runoff (p. 18). Thus, appropriate water management in Colorado is critical not only for the future of state, but also for the entire region.

Case Study: Colorado's Interbasin Compact Committee and Basin Roundtable Process

Following the initiation of the SWSI process, the 2005 Colorado Water for the 21st Century Act established the Interbasin Compact Committee (IBCC) to facilitate statewide discussions of water policy and management in order to address some of the complex water management issues described above. Initially, The IBCC was specifically charged with the duty of helping the states' river basins negotiate "inter-basin compacts," or voluntary water-sharing agreements between basins, that could ideally help solve some of the state's water shortage issues (CWCB, 2014d). Consequently, nine "Roundtables"—one to represent each geographic river basin in Colorado plus an additional Roundtable to represent the Denver "Metro" area—were also institutionalized under this Act with the directive to represent each river basin in these negotiations (CWCB, 2014d). The Roundtable process—as it will be referred to here—is housed under Colorado's primary water governance authority, the Colorado Water Conservation Board (CWCB).

Membership of the IBCC and Roundtables

The IBCC formally consists of 27 members: two from each Roundtable (18 total), five experts from relevant sectors (environment, recreational, local government, industry, agriculture) in geographically-diverse locations who are appointed by the governor, one representative appointed by chairperson of the Colorado Senate Agriculture Committee, one representative appointed by the chairperson of the Colorado House Agriculture Committee, and the Director of Compact Negotiations/Chair of the IBCC, who is appointed by the governor. The Roundtables' core membership is also defined by the enacting legislation. Each Roundtable maintains ten "designated" members appointed to the Roundtable by the counties, municipalities, water conservation and conservancy districts within the basin's boundaries, as well as a member

appointed jointly by the Colorado House/Senate Agriculture Committees. Additionally, HB05-1177 mandates that each Roundtable maintain ten "at large" members that must include representatives from environmental, agricultural, recreational, local domestic water provider, and industrial sectors (Colorado Water, 2005). A CWCB representative, non-voting members, and state and federal agency liaisons also participate in each Roundtable. This conglomerate of over 300 citizens across nine Roundtables, along with others who participate in the Roundtable process without official membership, includes many voices that otherwise would not have taken part in traditional water policy discussions in Colorado, making this case an interesting example through which to examine interactions and outcomes driven by diverse stakeholder participation.

Roundtable Goals

Each Roundtable must work collaboratively to assess its home basin's water needs and devise recommendations for future water management in the face of uncertainties in climate and population growth. The Roundtables are responsible for assessing the following factors within their basin: consumptive water needs (municipal, industrial, agricultural), nonconsumptive water needs (environmental and recreational), water supplies (both ground and surface), and any proposed projects or methods to meet the determined needs (CWCB, 2014a). The reports produced by the Roundtables are used by the IBCC and CWCB in planning processes such as scenario-planning, cross-basin discussions, and preparation for the next SWSI update slated for 2016 (CWCB, 2012a).

In this "bottom-up" governance process, the Roundtables most resemble "watershed partnership[s]," as defined by Leach and Sabatier (2005), in that each Roundtable "consists of representatives from private interest groups, local public agencies, state or federal agencies, and researchers who convene about once a month to discuss the management of a stream, river, or

watershed" (p. 233). Each Roundtable also resembles a watershed partnership in that it "holds little formal legal authority to carry out projects or prescribe regulations. Rather, it provides a forum in which management plans and implementing actions are negotiated, then turned over to member agencies for formal legal action" (Sabatier et al., 2005a, p. 6). Based on this trait, it is important to specify that any "outcomes" discussed in this research are not *necessarily* executive or legislative outcomes. For example, an outcome might include a policy recommendation that has been negotiated among members and will appear in a formal document produced by the Roundtable. Roundtables also have the power to allocate "grants and loans to assist Colorado water users in addressing their critical water supply issues and interests" through the Water Supply Reserve Account (WSRA) Grant program (CWCB, 2014e). The requests funded through this program, which can be for technical assistance, studies and analysis, or project implementation, may also be considered outcomes; yet, much like the aforementioned category of outcomes, these are also not formal policy changes enacted by the Roundtables. The outcomes of this collaborative policy process are discussed in depth in Chapter 7.

Importantly, the Roundtables have recently been tasked with providing insight and data on "statewide and basin-specific water values" that will inform Colorado's Water Plan, the state's first ever statewide water plan (CO Exec Order, 2013). Specifically, each Roundtable will create a Basin Implementation Plan that employs previous data to create "solutions for how each basin's water needs will be addressed at the local level" that can ideally be incorporated into Colorado's Water Plan (State of Colorado, 2013). However, it is likely that these plans will run up against some of the major historical conflicts described above, especially those concerning inter-basin issues. For example, Basin X's plan may require a TBD from Basin Y to meet its water needs, and Basin Y may not have additional water to provide to Basin X. Thus,

the Roundtables must deal not only with issues of intra-basin competition for scare water resources, but with inter-basin conflicts as well.

Individual Roundtable Descriptions

In order to thoroughly examine the stakeholder interactions within each Roundtable, it is imperative to understand the makeup of the basins both physically and demographically. The following section will present a short description of each of the nine basins that includes land and water use information, as well as any pertinent demographic information related to the occupations and economic status of the basin's residents that could affect the relevant values that they bring to the Roundtable. The needs of each basin, as defined in the SWSI 2010 report, are also included in these descriptions.

Arkansas Basin

The Arkansas Basin encompasses a large portion of southeastern Colorado. In fact, it is Colorado's largest basin, covering almost one-third of the state's land area (CWCB, 2011a). The Arkansas River, the basin's major water source, is divided between Colorado (60%) and Kansas (40%) according to the Arkansas River Compact of 1948. The basin's land is mainly grassland and forest, with steep slopes in western half of the basin and relatively flat plains in the eastern half (CWCB, 2009a). While the basin is quickly undergoing urbanization—estimates show that the population may grow by almost half a million people between 2000-2030—the major land use is still agriculture, of which about one-third is irrigated (CWCB, 2011a).

While completing assessments for the Statewide Water Supply Initiative (SWSI) in 2010, the Arkansas Basin identified various water issues within the basin including little water for new uses, difficulty obtaining new sources of water, competition between agricultural and recreational water interests, and concerns about water quality in the lower part of the basin.

These issues will be exacerbated if the population does grow as quickly as expected, leaving the Arkansas Basin approximately 93,000 acre feet short of what is needed for growing M&I (municipal and industrial) and SSI (self-supplied industrial) sectors. Therefore, this basin will need to rely on water projects such as the Southern Delivery System and the Arkansas Valley Conduit, as well as on economic growth and conservation measures, to meet their future water needs.

Colorado Basin

The Colorado Basin, located west of the Continental Divide, encompasses the headwaters of the mighty Colorado River. However, Colorado is responsible for sending more than half of the river's flows to upper and lower basin states, as described in the Colorado River Compact of 1922, and to Mexico (CWCB, 2009b). Eighty-five percent of the land in this basin is rangeland and forest, and major activities include grazing, recreation, and mining (CWCB, 2011a).

SWSI 2010 identified the following water needs in the Colorado Basin: potential compact shortages and reductions of in-basin supplies in times of drought, concern over development of trans-basin projects, and worries about water quality related to selenium and salinity levels. The basin also cites recreational/environmental and lower basin agricultural water use (in the Grand Valley), as well as the continued success of the Upper Colorado River Endangered Fish Recovery Program, as important considerations when assessing the available water supply. The population of this basin is expected to grow by a quarter million people—or an astounding 99%—between 2000 and 2030, which will require an additional 61,900 acre feet of water each year to meet M&I and SSI requirements alone (CWCB, 2009b).

Gunnison Basin

The Gunnison Basin in western Colorado is largely forested (52%) and contains only 5.5% of cultivated land, which is located in the upper area of the basin (CWCB, 2011a). The population of the basin is expected to grow by 82% (72,900 people) between 2000 and 2030, increasing M&I/SSI demand by 14,900 acre feet (CWCB, 2009c).

The Gunnison Basin addressed several water needs in SWSI 2010 including garnering additional water supplies in the face of growth near the headwaters and managing the impacts of future trans-basin diversions. The basin is also highly concerned with the northern area where most of the agriculture takes place. Currently, they lack the financial resources to fully address agricultural water shortages and expect to see drastic land use changes in that area as population continues to grow. Finally, the Gunnison Basin prioritizes resolving federal issues with reservoirs and endangered species, as well as managing selenium content in water.

Metro (Denver)

Metro is the only non-geographical "basin" of the nine designated roundtables. The Metro Roundtable represents Denver's unique water needs as a major urban center, although the city technically lies within the South Platte Basin. Thus, the basic geography and hydrology of the Metro Basin will be described in the summary of the South Platte Basin. However, specific water needs of the Metro area include finding "alternatives to permanent agricultural dry-up," addressing "renewable supplies for Denver Basin groundwater users, identifying "opportunities to optimize existing and future water supply infrastructure," successfully implementing an "endangered species program to protect existing and future in-basin uses," and ensuring water for future M&I, agricultural, environmental, and recreational needs (CWCB, 2012b, p. 1). With an expected population of 4.1 million residents by 2050 (consistent 2030 data not available for

Metro), meeting these diverse needs will be a challenge.

North Platte Basin

The North Platte Basin, located in north central Colorado, is the smallest basin with regard to geographical land area. The basin's land use mainly consists of forests (46%), shrubland (24%), and grassland (17%), leaving only 13% of its land for other uses including residential and commercial use (CWCB, 2011a). The basin's major water source, the North Platte River, is divided equally among Colorado, Nebraska, and Wyoming. This area also receives a limited amount of water from the Laramie River. The North Platte Basin is the only basin truly concerned with lack of growth and economic development, as it is estimated to grow by only 25% to a *total* of 2,000 people between 2000-2030 (CWCB, 2009d).

According to the SWSI 2010 assessment, the North Platte Basin needs to address issues concerning municipal water storage and rights classifications, unappropriated waters, potential impacts from coal-bed methane development, and the amount of land that can be irrigated using the apportionments from the North Platte and Laramie Rivers. Environmentally, the basin is concerned with the effects of forest fires and pine beetles, as well as the ability to manage endangered species issues on the Platte River without reducing water usage. A lack of economic development may put additional financial strain on the basin.

Rio Grande Basin

The portion of the Rio Grande Basin that lies within Colorado is located in the south central area of the state and includes the San Luis Valley. Surrounded by heavily forested mountains, the San Luis valley contains more than 600,000 acres of irrigated land used primarily for agricultural purposes such as potato production, as well as shrubland (24%) and grassland

(31%) (CWCB, 2011a). The waters of the Rio Grande are divided in three compacts, including the 1938 Rio Grande Compact with New Mexico.

As a result of the Rio Grande Compact and extended drought in the region, SWSI 2010 explains that general water sustainability in the basin is a difficulty. Groundwater used for agriculture is particularly unsustainable, but the basin fears the economic impacts of reducing this dominant sector. Additionally, the basin is growing, especially in the South Fork area. The population is estimated to grow by 35%, or 62,700 people, between 2000 and 2030 (CWCB, 2009e). While M&I and SSI demand is only expected to increase by 4,300 acre feet by 2030, the conversion to basin-wide sustainable water sources will require many thousands of additional acre feet of water.

South Platte Basin

The South Platte Basin, which encompasses the Republican River Basin, is an extremely diverse area in northeastern Colorado. Its waters serve the region with both the greatest concentration of both population (Denver, whose needs are represented specifically in by the *Metro* Roundtable) and agricultural lands (CWCB, 2011a). The waters of the South Platte River originate from the northern area of the Eastern Slope and wind through the Denver metropolitan area toward the Nebraska state line. Although water from the South Platte is shared with Nebraska, the basin requires additional supplies from various trans-basin diversions. Between 2000 and 2030, the population of the basin is expected to grow by 2 million people, or 65%, requiring 409,700 additional acre feet of water to meet M&I and SSI needs (CWCB, 2009f).

Many of the issues identified for the South Platte Basin in SWSI 2010 are rooted in the competition for water between agriculture and urban interests (CWCB, 2011a). For example, the South Platte region must serve rural communities as well as urban areas such as Aurora and

Douglas County, which have grown rapidly in recent decades. Due to the lack of new water storage capacity, these expanding areas have come to rely on non-renewable groundwater resources managed by multiple small municipal water districts. While water reuse and conservation may help supply urbanized areas, agricultural supplies are increasingly threatened. The South Platte Basin also relies on water coverage provided by the Endangered Species Act through projects such as the Upper Colorado Endangered Fish Recovery Program and the Platte River Recovery Implementation Program.

Southwest Basin

The Southwest Basin, made up of the Dolores, San Juan, and San Miguel River Basins, encompasses the southwest corner of Colorado. The rugged terrain of the region includes "high plateaus with deeply incised canyons and dry arroyos," as well as mesas, canyons and mountains (CWCB, 2011a, p. 1.10). While three-quarters of the basin consists of forest and shrubland, the agriculture and ranching industries dominate in lower elevations, and the tourism and recreation industries are growing in other areas. Aside from obligations to share water through the Colorado River Compact, there are also additional compacts that appropriate some the water originating in this basin to New Mexico and the Southern Ute and Ute Mountain tribes.

The basin's water needs, as described in SWSI 2010, truly demonstrate the region's diversity by highlighting population growth, agricultural strongholds, and growing recreation and tourism. Moreover, the basin is expected to grow by 87% between 2000 and 2030, adding an additional 80,700 people and increasing M&I and SSI needs by 18,800 acre feet (CWCB, 2009g). While the basin technically has water to supply their needs, insufficient infrastructure and consideration of the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program remain as challenges for the basin.

Yampa/White/Green Basin

The Yampa/White/Green Basin, located in northwest Colorado and south-central Wyoming, "contains diverse landforms including steep mountain slopes, high plateaus, rolling hills, incised sandstone canyons, and broad alluvial valleys and floodplains" (CWCB, 2011a, p. 1.10). The basin's diverse industries include livestock, grazing, agriculture, and recreation—especially the destination ski resort located in Steamboat Springs. While this area in particular is expected to grow continuously, the overall the basin is only predicted to grow by 56%, or 22,100 people, between 2000-2030 (CWCB, 2010). This requires an increase of 22,300 acre feet of water for M&I and SSI.

In SWSI 2010, the Yampa/White/Green Basin identified a large variety of water needs in the municipal, industrial, recreational/tourism, and agricultural sectors. These include water for the following uses: gas and oil shale development and associated increased municipal use, continued power production, and agriculture (CWCB, 2011a). However, because the Yampa/White/Green basin is not growing as rapidly as the other basins, there is a shortage of financial resources and concerns about reduced allotment in comparison to other basins in the event of a "compact call" on the Colorado River. The Yampa/White/Green is also implementing the Upper Colorado River Endangered Fish Recovery Program, which requires protection of instream flows currently and into the future.

Summary

It is obvious from these short descriptions that there are many conflicting values, goals, and needs among basins concerning water resources. For example, many basins cite that they want to maintain or expand agriculture, yet they may be restricted by the finances necessary to provide water and infrastructure for this resource-intensive activity. For the majority of the

basins—except perhaps the North Platte and to some extent the Yampa/White/Green, who are concerned about lack of population and consequent economic growth—meeting the municipal and industrial needs of an increasing population is being prioritized to some extent instead. This may also involve setting aside more water for recreational uses that drive part of a basin's economy, especially for Western Slope basins. Moreover, various basins cited the Upper Colorado River Native Fish Recovery Program, as well as other endeavors to protect native species by means such as maintaining instream flows, as a challenge when figuring out how to efficiently manage their water supply in a way that satisfies all users. A few of the basins—particularly the Rio Grande Basin—must also deal with the challenge of finding a water source that is more sustainable than current sources such as non-renewable groundwater or "extra" water that technically belongs to another entity through an inter-state compact. Ideally, the IBCC and Roundtables attempt to meet all of the basins' respective needs to some extent by finding locally-focused, collaborative, and innovative strategies to deal with Colorado's water issues while also working within the confines of the complex set of laws that govern Colorado's water resources and the issues of resource scarcity now and into the future.

Chapter 4: Theoretical Developments

Using the ACF to Analyze Collaborative Governance Processes

In the 2007 update to the ACF, Sabatier & Weible (2007) explain that the framework "must be modified to identify the conditions under which—in the absence of major external or internal perturbation—agreements involving policy core changes are crafted among previously warring coalitions" (p. 205). In other words, they are interested in understanding how *negotiated agreements* fit best into the ACF, a framework that traditionally focuses on opposing coalitions rather than collaborative ones (see "Policy Subsystem" box of Figure 2, reproduced below). ACF scholars hypothesize that negotiated agreements arise from collaborative policy subsystems, which are created in response to a "hurting stalemate" situation between adversarial coalitions in an existing policy subsystem (Weible & Sabatier, 2009; Weible et al., 2012; Weible & Nohrstedt, 2012). In other words, "coalitions that have been fighting for decades" (Sabatier & Weible, 2007, p. 205) eventually come to a point where there are completely "dissatisfied with the status quo and perceive no alternate venues for achieving their objectives" (Weible & Sabatier, 2009, p. 198); consequently, previously adversarial coalitions decide to engage in collaboration and attempt to negotiate a mutually acceptable outcome among themselves.

Since then, there has been little explicit consideration of where collaborative processes and the negotiated agreements they strive to produce fit into the ACF, despite the fact that the ACF continues to be seen as a valid framework by which to analyze these types of policy processes. In fact, in their reflections on twenty-five years of the ACF's use, Weible et al., (2011) specify negotiated agreements as one of the "rarely explored areas" of framework in need of further study (p. 357). Thus, this research seeks to provide insight into where collaborative policy processes (and consequently, negotiated agreements) fit into the ACF.

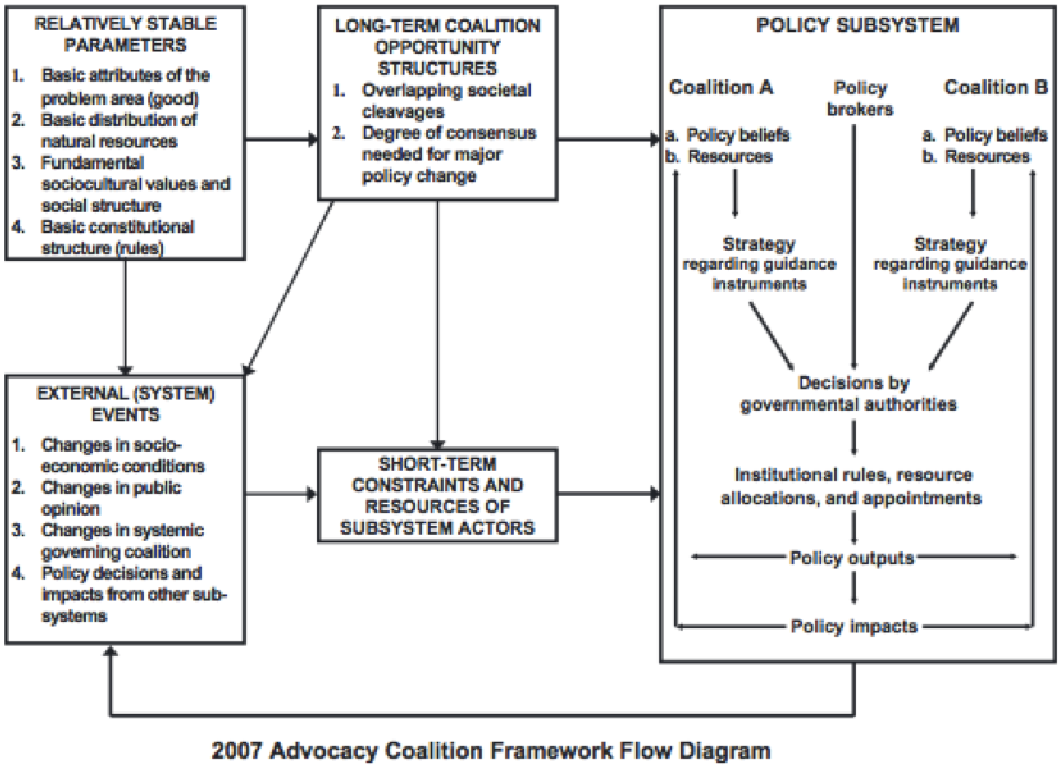

Figure 2 (reproduced): The 2007 Advocacy Coalition Framework Flow Diagram (Weible, Sabatier, & McQueen, 2009), © John Wiley and Sons.

In order to justify that Colorado's Roundtable process—which grapples with one of the most contentious and adversarial issues in Western US history—is an appropriate example of collaboration to examine in response to this gap, there is first a need for a set of clear rules by which to distinguish a collaborative subsystem from an adversarial subsystem. Weible and Sabatier (2009) provide characteristics of collaborative subsystems that are useful here, including the presence of "cooperative coalitions with some level of belief convergence and cross-coalition coordination" that share decision-making power and work through the process of consensus to devise solutions that are "win-win and voluntary" (p. 197-198). They specifically highlight that "consensus-based institutions play a major role in building trust, goodwill, and mutual understanding of the different values" through strategies such as "face-to-face communication rules, open entry rules, fair rules of negotiation, decision rules based on consensus, and joint

fact-finding procedures that integrate scientists and nonscientists in decision making" (Weible & Sabatier, 2009, p. 198). However, the authors say little about the formation of these collaborative subsystems aside from the fact that they may arise from hurting stalemates in adversarial policy subsystems, as mentioned above. Weible and Sabatier (2009) describe adversarial subsystems as having polarized beliefs and little coordination, as well as "fragmented authority among governments or government agencies that are aligned with one of the competitive coalitions" (p. 197). Moreover, participants in adversarial subsystems often seek any venue in which they may be able to create a policy with clearly defined winners and losers.

Therefore, despite the fact that the Roundtable process surrounds an extremely controversial issue that often results in much contention among stakeholders (as described in Chapter 3), the structure of the process itself fits the characteristics of a collaborative policy subsystem much more closely than that of an adversarial subsystem—and importantly, it was intentionally designed to do so from the start. Because of this, the Roundtable process is even different than many other collaborative processes: it was created in response to a wide variety of factors, including drought and water shortages as well as long-standing social, political, and economic attitudes about water management and policy, rather than in response to one specific issue that had existing policy participants divided by deep, adversarial lines (as compared to the two adversarial coalitions described by Weible and Sabatier [2009] in the Lake Tahoe case). Moreover, many new policy participants entered the collaborative Roundtable process without necessarily participating in any kind of adversarial system related to this topic in the past for one reason or another. Thus, when determining whether a policy subsystem is collaborative or adversarial, it is important to look beyond the topic being examined within the process and instead at the process itself, including the motivations for creating the process. Based on these

criteria, the Roundtable process not only serves as an example of a collaborative subsystem that is ripe for examination through the ACF, but it also suggests that collaborative subsystems do not necessarily *have to* evolve from initially adversarial subsystems and may vary in "degree of collaboration" along a spectrum.

Specific ACF Variables and Proposed Relationships Relevant to Collaborative Processes

Consensus Variables

Sabatier and Weible (2007) discuss a modification that was made to the ACF since 1999 concerning a group of variables termed "long term coalition opportunity structures," which includes two variables that expand the "context within which coalitions operate": degree of consensus needed for major policy change and openness of political system (p. 197).[2] While the authors explain that this new group of variables was created in response to criticisms that the ACF was only applicable to policy processes in the American context, they more broadly recognize that these variables "mediate between stable system parameters and the subsystem" (p. 199) and can play a key role in recognizing how stable parameters influence subsystem formation. With specific attention to the "degree of consensus" variable, the authors recognize that some political systems, such as those in Switzerland, Austria, and the Netherlands, have "a very strong norm for consensus," and thus likely have more incentive "to be inclusive (rather than exclusive), to seek compromise and share information with opponents, and generally to minimize the devil shift" (p. 200). In other words, subsystems that have a greater degree of consensus required for major policy change are more likely to tend toward collaborative-type processes.

[2] One of the earliest versions of the framework mediated between stable parameters and external system events using a general variable called "Constraints and Resources of Subsystem Actors" (Sabatier, 1988, p. 132), which was separated and detailed over time into both "Long Term Coalition Opportunity Structures" and "Short Term Constrains and Resources," as seen in Figure 2.

Emphasizing the relationship between the "degree of consensus needed for major policy change" and the consequent subsystem dynamics can also be extremely important when analyzing collaborative governance processes within the US political system that set consensus-based norms similar to those more broadly expected in other political contexts. For example, the Roundtable process and other processes that are initiated in a within a collaborative framework and rely primarily on consensus-based decision-making norms may produce different subsystem structures in which coalitions use resources and strategies differently (this will be addressed in more detail below). Thus, paying specific attention to "coalition long-term opportunity structures" and better understanding how they mediate between stable parameters and the subsystem may be an importance place to begin examining where collaborative processes fit into the ACF.

Subsystem Structure Variables

As alluded to above, ACF scholars posit a direct link between "long term coalition opportunity structures" and the "policy subsystem;" consequently, collaborative processes may produce different subsystem structures than those traditionally hypothesized by the ACF. Specifically, individual coalitions may be more loosely defined within a collaborative policy subsystem than those in an adversarial subsystem for a number of reasons. For instance, because participants in a collaborative process often work under the norm of attempting to reach a high level of consensus, which ideally encourages them to seek places of belief-overlap where they can coordinate their actions, they may be less inclined to form highly separated and adversarial coalitions that undermine this norm. Participants in collaborative processes may also be required to share resources and interact regularly, consequently encouraging widespread collaboration among all members rather than the development of two or more groups in direct opposition to

one another. Thus, instead of resulting in the "Coalition A" versus "Coalition B" format seen in the policy subsystem box of the ACF schematic that specifically separates coalitions' beliefs, strategies, and resources (Figure 2), collaborative policy processes might produce a subsystem with a number of weaker coalitions that actually overlap in some areas but not in others and share beliefs, resources, and strategies to some extent (see Figure 3).

For instance, in the case of the Roundtables, financial resources are a category of resources in which sharing must occur among coalitions. While some stakeholders may obtain some external funding to achieve their goals (for example, by having an organization external to the Roundtables fund half of a proposed project so the Roundtable has to provide fewer shared resources), much of the funding for the process comes from the State of Colorado through the CWCB. Because of this, actors must work together to share this financial resource among all participants to achieve both their collective and individual goals.

The research objectives detailed in the next chapter allude to both consensus variables and subsystem structure variables as described above in order to determine how collaborative processes in general, and processes that did not emerge from an adversarial subsystem specifically, fit within the ACF framework. Discussions of the data collected (Chapters 6 and 7) will reflect on these arguments concerning the increased emphasis on consensus and the potential for loose and overlapping coalitions with some shared beliefs, strategies, and resources in order to determine how these variables affect the trajectories of different Roundtables and the Roundtable process as a whole.

On a final note, because many collaborative governance processes are nested within larger, multi-level governance and decision-making regimes, it is useful to highlight that subsystem structure may vary greatly based on the level of governance being examined,

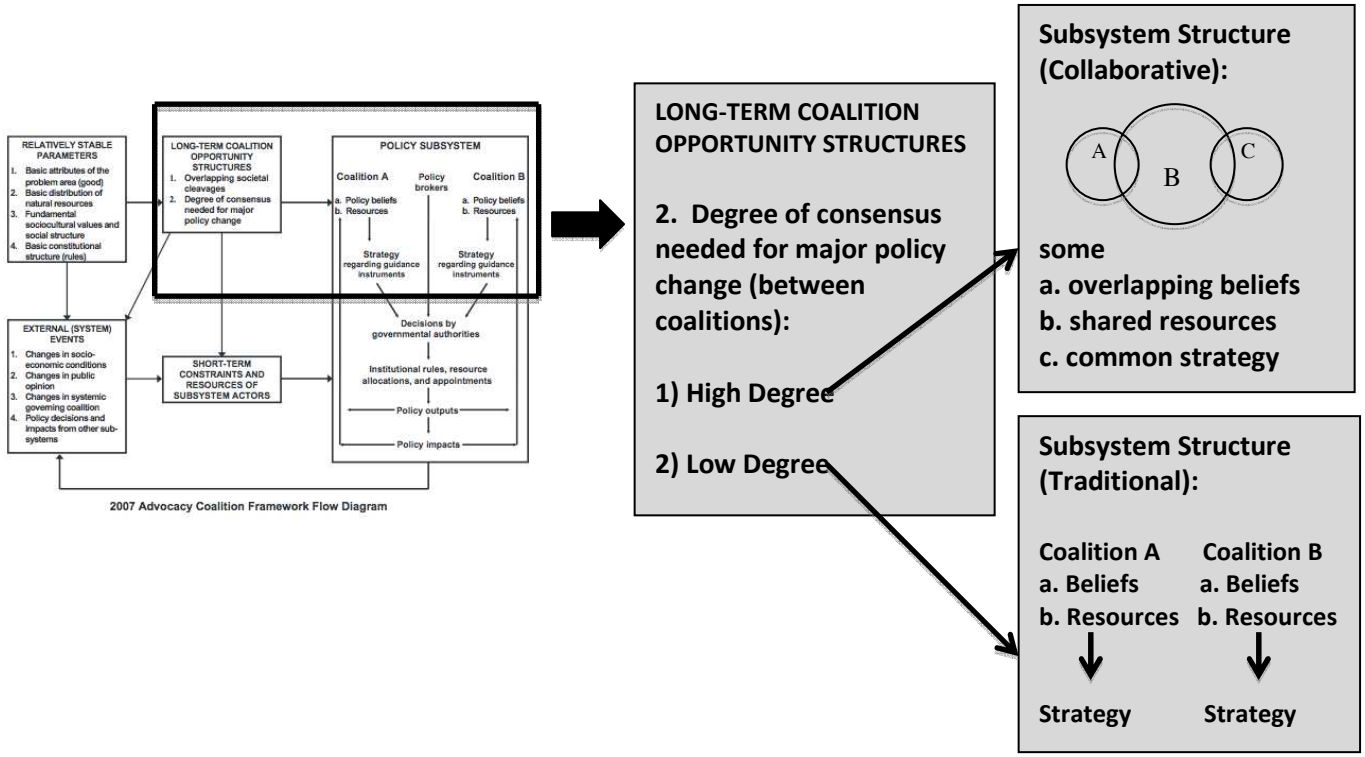

Figure 3: Schematic of the predicted effect that different degrees of consensus needed for major policy change may have on subsystem structure, specifically on coalition structure, beliefs, resources, and strategy. Advocacy Coalition Framework Flow Diagram on left from Weible, Sabatier, and McQueen (2009), © John Wiley and Sons. Gray boxes on right are original.

despite the fact that the general context and some participants may be shared among levels. For example, in the Roundtable process, analyzing the degree of consensus needed *within a Roundtable* to move forward with policy change on the intra-basin level, versus the degree of consensus needed *among Roundtables* to move forward with policy change on a inter-basin or statewide level may result in two completely different subsystem structures, despite the fact that these levels of governance are nested and share context and participants. This concept is crucial when considering that even though the Roundtables are each working on governing resources in their individual basins, they must also work across Roundtables in a variety of ways, such as ensuring their "policy solutions" do not inherently negate one another (e.g. two Roundtables want to using the same water for their own separate solutions), especially in the context of the development of Colorado's Water Plan. While this research does not specifically analyze the degree of consensus needed *between Roundtables* to move forward, examining the subsystem structure that emerges surrounding inter-Roundtable interactions, as well as the inherent interconnections among these levels of governance, will be a rich area for investigation as Roundtables begin to collaborate with one another in statewide planning processes during 2014-2015.

Figure 4 below represents one potential example of a nested governance system, in which the collaborative, bottom-up Roundtable process (Level 1) is nested within a more traditional, top-down governance process (Level 2) that requires a lower degree of consensus among participants in order to move forward with policy-making. Depending on actions taken by the CWCB and State of Colorado once the Roundtables submit their Basin Implementation Plans, the process of creating Colorado's Water Plan—in which the Roundtables will be inherently nested—may reflect this disparity in subsystem structure. However, if norms of collaboration

and consensus are adopted by those at Level 2, the two nested processes will have more similar subsystem structures.

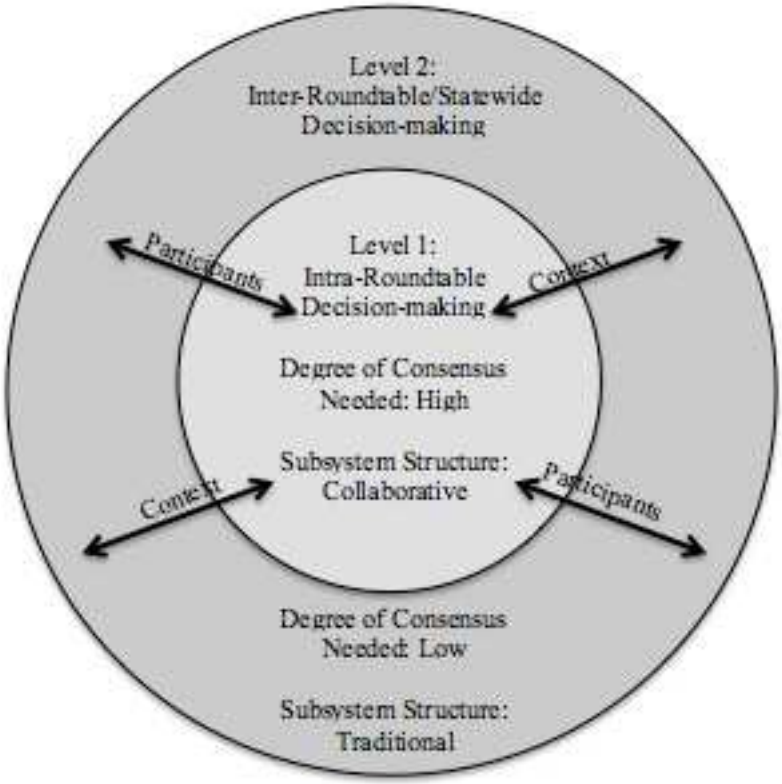

Figure 4: An example of how the Roundtable process could potentially be nested within a more traditional, top-down policy process that requires a low degree of consensus and consequently produces a different subsystem structure, despite sharing context and some participants.

Chapter 5: Research Design and Methods

Research Design

Broadly, this study addresses *the conditions under which collaborative governance processes can produce successful policy outcomes*. The following major research objectives (ROs) and sub-questions have been proposed in order to investigate this overarching question:

RO1: To understand if and how stakeholder values are effectively reconciled in a collaborative process.

- RO1.1: Are coalitions formed among stakeholders in a collaborative setting and how are they formed?
- RO1.2: Do stakeholders prioritize certain goals/beliefs over others when making collaborative decisions?
- RO1.3: Do stakeholders alter any of their values or beliefs after interacting with other stakeholders in a collaborative setting?

RO2: To understand how outcomes are produced in collaborative policy processes.

- RO2.1: What do outcomes look like in a collaborative policy process?
- RO2.2: How are proposed outcomes limited by stable parameters, such as distribution of the good in question?
- RO2.3: What role does consensus play in producing outcomes in a collaborative process?
- RO2.4: Do outcomes reflect recommendations that reinforce the status quo or recommendations that vary greatly from the status quo?

These research objectives and sub-questions will be investigated through a case study of the Basin Roundtable process, which was described in Chapter 3. Case studies aid in creating an understanding of "complex social phenomena" in a way that retains the "holistic and meaningful characteristics of real-life events" (Yin, 2003, p. 2). More specifically, this project uses an embedded, single-case design, which includes the three nested levels of context, case, and units of analysis (Yin, 2003, p. 40; see Figure 5). This study is situated in the context of themes such as water in the West, the Colorado Constitution and Colorado water law, and uncertainties surrounding climate change and population growth in Colorado. The IBCC/Roundtable process serves as the overarching case that is situated within this context, and the nine Roundtables serve as individual units of analysis. This design—as opposed to one in which each Roundtable serves

as an individual case study—was selected because there are common rules, practices, and expectations set out at the CWCB/IBCC level that apply to each of the individual Roundtables in question. Thus, it is easier to view the individual Roundtables as interconnected and inherently part of one case as opposed to individual cases in and of themselves. Moreover, while the IBCC is also a collaborative group that contains members from various basins and stakeholder groups that could potentially be analyzed to answer the above questions, investigating individual Roundtables allows for cross-unit comparisons and the development of a deeper understanding of the collaborative process overall, as Roundtable members work much more closely together on a more regular basis than do IBCC members.

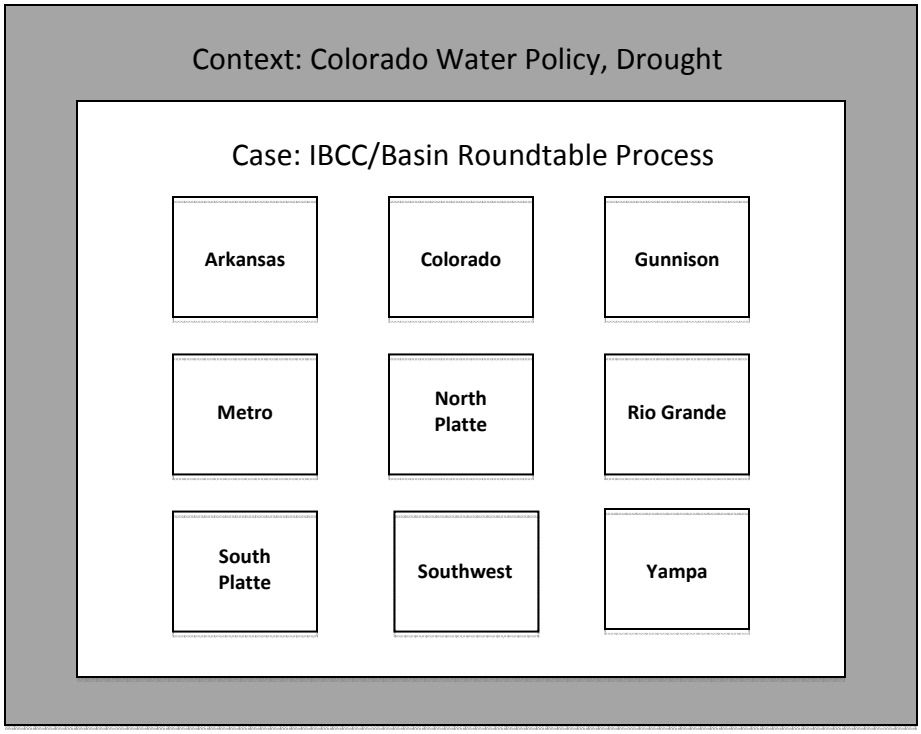

Figure 5: Research design: embedded, single-case design in which Roundtables serve as individual units of analysis.

Moreover, this case study adopts an exploratory nature. In other words, it strives to answer the "what" question about a situation with the goal of "develop[ing] pertinent hypotheses

and propositions for further inquiry" instead of trying to explain why something happens in a certain way over time (Yin, 2003, p. 6). Because the Roundtable process is fairly new and relatively under-studied, this exploratory approach provides insight into underlying trends or motivations that should be examined further in future research; attempting to examine a specific trend without understanding the broader context of the process seems pre-mature. Consequently, instead of presenting research questions followed by hypotheses, this study investigates two main research objectives and a number of sub-questions that break up the main questions into more easily analyzable segments, as detailed above. Hypotheses generated from this project that could be tested in the future are detailed in Chapter 9.

Methods

Conley and Moote (2003) argue that "[i]n-depth interviews and participant observation are preferred process evaluation methods" (p. 381) for collaborative processes. As this research aims to understand major mechanisms underlying how this collaborative process works or fails to work, these two methods have been used to collect data for this study. Various documents produced by and about the Roundtables, the IBCC, and the CWCB were also used to provide context, timelines, and background information for this study, though they were not formally coded. Examples include the SWSI 2010 Final Report and SWSI "Fact Sheets" that were produced for each individual basin prior to the final SWSI report, as well as various informational pages on the CWCB website.

Participant Observation

Public IBCC and Roundtable meetings were observed by the researcher in order to understand the context of the process. Specifically, the researcher attended at least one individual monthly meeting in seven of the nine basins, as well as one IBCC meeting, and two

multi-Roundtable meetings (one joint East Slope meeting and one Roundtable Summit that included participants from all Roundtables, the IBCC, and the CWCB). These observations provided an opportunity to gain insight into how each group functions, which members appear to be key players, and how discussion and decision-making activities are carried out. The researcher did not digitally record these meetings, nor did she participate in the discussion unless prompted by a member of the Roundtable/IBCC, which happened very rarely. Instead, these meetings were used as an opportunity to make face-to-face contact with past and potential future interviewees in order to build trust and better understand the social dynamics within the Roundtables.

Broadly, attending these public meetings may be seen as a very non-invasive form of participant observation, which is part of the broader category of ethnographic methods. O'Reilly (2007) describes ethnographic methods as "a special methodology that suggests we learn about people's lives (or aspects of their lives) from their own perspective and from within the context of their own lived experience" (p. 84). Participant observation, the main tenet of ethnographic methods, is defined as "participating in people's daily lives over a period of time, observing, asking questions, taking notes, and collecting other forms of data" (p. 110). While sustained contact with the subjects in question and direct interaction and participation in their lives is not necessarily a part of this research project, attending meetings and observing interactions among Roundtable and IBCC members, often across multiple settings, is essential for building the context of this research and creating a thorough understanding of the rules and expectations of the case that govern—to some extent—how the individual Roundtables function. This practice of gaining and understanding of "the social and physical scene [which] provides important data

for understanding social relationships," is known as "mapping the scene" (DeWalt & DeWalt, 2002, p 70).

Interviews

Three to four key stakeholders were interviewed from each Roundtable (n ~ 29) about how stakeholders on the Roundtable interact, make decisions, and produce outcomes. This resulted in a totally of twenty-eight interviews (one interview included two participants speaking at once), of which twenty-seven were recorded on a digital handheld recorded upon consent of the interviewee(s).

Within each Roundtable, interviewees represented at least two—and more often, all three—of Colorado's major water needs groups: 1) agricultural interests; 2) municipal interests (local governments, water providers, or industry groups); and 3) nonconsumptive interests (environmental or recreational) (CWCB, 2014b; see Table 2 for breakdown of interview subjects by Basin and Stakeholder Group). Importantly, the selected interviewees are not necessarily the designated representatives of their stakeholder group on the Roundtable as defined in HB05-1177, but are rather individuals who are knowledgeable about and have personal experience in a specific sector, as well as a history of active past participation and current membership on the Roundtable. Moreover, some interviewees fit into more than one stakeholder group; for example, a stakeholder may be considered a "water provider" by profession, but supports agricultural interests because of his or her upbringing and family life. Eleven of the twenty-nine interviewees have also been involved either at the IBCC or CWCB level either currently or since the time of the Roundtables' enacting legislation, which provided some informal insight into how the varying levels of the Roundtable process interact with one another.

Table 2: Breakdown of Interview Subjects by Basin and Stakeholder Group

Basin Name	Basin Code	Agricultural Stakeholders	Non-Consumptive Stakeholders	Industrial/Water Provider Stakeholders	Local Government Stakeholders	Other	Basin Totals
Arkansas	AR		1		1	1	3
Colorado	CO		1	1	2		4
Gunnison	GN	1	1		1		3
Metro	MT		1	2		1	4
North Platte	NP	1	1		1		3
Rio Grande	RG	1	1	1			3
South Platte	SP	1	1		1		3
Southwest	SW		1	1	1		3
Yampa/White/Green	YWG	1	1			1	3
Stakeholder Group Totals		**6**	**9**	**5**	**7**	**2**	**29**

Interviewees were selected by the researcher from publically available lists of Roundtable members available on the CWCB website, and were contacted at the email address provided on the list. In a small number of cases, the email was returned to sender as invalid or was never answered; here, the researcher either selected another Roundtable member to contact or used the Internet to search for a phone number by which to reach the participant. Specific individuals were chosen to interview based on their stakeholder group, the geographical location they represented (in order to ensure variety), and their role as key participants in the Roundtable, as observed by the researcher or mentioned specifically by other interviewees. Some snowball sampling was used when the researcher had a difficult time tracking down interviewees from specific stakeholder groups in certain basins. This method involves "starting with a convenience sample of a few research participants and asking them to select others" (Auerbach & Silverstein, 2003, p. 18). Importantly, the interviewees were also individuals who were willing to share their perspectives with the researcher within the designated period of study and do not definitively represent the views of all other members on the Roundtable, or even the collective views of their stakeholder groups.

While the researcher met almost all subjects in person at Roundtable or IBCC meetings, interviews were conducted in three modes: in person ($n \sim 10$), via Skype ($n \sim 2$), and via telephone ($n \sim 15$). These options were presented partially for convenience and partially because some interviewees requested not to be interviewed in person where they could potentially be seen by other members of the Roundtable or of their community. In-person interviews were conducted in both private and public locations, varying from interviewees' offices to restaurants and the lobbies of hotels where the Roundtable meetings are held.

Subjects were interviewed in a semi-structured, responsive manner following the recommendations of Rubin and Rubin (2005). This style allows the interviewer to deviate from the question guide to follow up on statements that may be vague (i.e. "we reach consensus") or themes that appear particularly important to the interviewee in order to truly understand the mechanisms underlying the interactions within each Roundtable. This method was appropriate because the interviews served both investigative (i.e. used to find out what happened in a specific process or event) and elaborative (i.e. used to understand why something happened and what the impacts are) purposes (Rubin & Rubin, 2005, p. 6). Interview questions were designed based on the major research objectives and sub-questions (see Table 3 for a select sample of interview questions). The questions were also informed by important variables from the Advocacy Coalition Framework, as detailed in Chapter 2.

Importantly, each interview represents a snapshot of each basin at the time of the interview; yet, the Roundtable process is in constant flux as the Roundtables each work toward preparing their individual Basin Implementation Plans. However, these interviews are bounded by an important temporal aspect: they were all conducted after Colorado Governor Hickenlooper's executive order for the creation of Colorado's Water Plan, but before the Roundtables produced their individual Basin Implementation Plans (due in July 2014).

Data Coding and Analysis

Interviews that were digitally recorded were then transcribed using an "intelligent verbatim" style, which in this case signifies that "filler" words such as "umm" and "err" were left out of the transcription, but the rest of the text of the selected quotations—including repeated words and unfinished phrases—were included. Because this study is concerned with the general themes that interviewees discuss concerning stakeholder interactions rather than the specific

Table 3: Sample Interview Questions for Roundtable Members

1) Can you please briefly describe some of the major activities your Roundtable has already completed, and/or activities that you are currently working on?
    a) Have you thought about any activities you plan to work on in the future (including the Basin Implementation Plan and State Water Plan)?

2) What are the goals that this stakeholder group would ideally like to achieve in the IBCC/Roundtable process?
    a) Are some of these goals more important than others? Which goals might you "sacrifice" in order to achieve the more important goals?

3) Are there other stakeholder groups in the Roundtable that you feel share similar goals in meeting your stakeholder group's present and future water needs?
    a) Have you cooperated with these other groups in any way?

4) Do you feel that the goals and values of your stakeholder group are easily integrated into negotiations within the Roundtable? Or, is it a challenge to make sure your group's needs are figured into the plans?

5) Do you feel that the Roundtable in which you participate generally comes to consensus on issues/recommendations?
    a) Can you provide examples of what kinds of issues consensus is typically achieved around?
    b) Are there issues about which the Roundtable typically has difficulty reaching consensus?

6) Have you (or your stakeholder group in general) learned or experienced anything new during the course of the Roundtable process that has significantly changed your goals/values/beliefs?

7) What kinds of recommendations/policy alternatives does your Roundtable usually suggest? Does this Roundtable stay closer to the status quo in recommendations, or does the Roundtable usually make suggestions that vary greatly from the policies that are currently implemented?

ways in which they describe those relationships (i.e. if they are hesitant or not), this level of transcription is both more practical and more easily understood by the researcher and readers. The one interview that was not recorded, by request of the interviewee, was used only to inform context and was not analyzed formally with the rest of the transcriptions.

The interviews were then coded qualitatively (Auerbach & Silverstein, 2003) by the researcher using NVivo 10 qualitative analysis software in order to systematically analyze themes and patters across units of analysis (Miles & Huberman, 1994). A codebook of initial a priori codes was developed from the research objectives, the literature on collaborative governance, and the ACF literature, especially concerning the major variables detailed in Chapters 2 and 4 (Weston et al., 2001). While this a priori structure was used in order to limit the infinite number of codes to a focused and manageable number, the researcher also remained open to new codes that arose organically from the data and represented recurring themes that seemed particularly important to interviewees.

Through this process, the researcher developed nineteen "super codes," or main themes, which each contained between zero and six "sub-codes" in order to further specify where a certain section of text best fit. Information that fit within a super code but did not meet the specific definition of a sub-code was placed within the super code category for later investigation. The researcher further grouped the nineteen super codes into eight groups of related codes. In order to foster greater intra-coder reliability (Krippendorf, 2004), the researcher read each interview transcript approximately eight times, focusing on each group of related codes individually. See Appendix A for a list of codes used in this analysis and their groupings.

A summary report was then printed directly from NVivo 10 for each basin that included all super codes and sub-codes and the text that was coded underneath each one from all

interviews pertaining to a particular basin. As an aid for analysis, the researcher developed a "Summary Sheet" for each Roundtable, in which she first listed the research objectives and sub-questions along with the relevant codes that corresponded to each objective or question. Then, main themes from the summary report were listed narratively on the Summary Sheet under their respective coded in order to provide an organized method through which to view the major themes that corresponded to each research objective. The various main ideas, quotes, and tables included in the results chapters of this paper were informed directly by these Summary Sheets.

An alpha-numeric code follows all interview quotations used in the remainder of this paper that includes both the basin abbreviation (from Table 2) and a number (1 through 3) that simply represents the order that interviews were conducted in within that basin; it does not correlate with the order of the major stakeholder groups listed above. Numbers were assigned to interviewees instead of designating the interviewee's stakeholder group because of the small number of representatives on each Roundtable from certain stakeholder groups and the consequent risks to interviewee anonymity. Thus, a code such as (AR-01) designates that the quotation preceding it originated from the first stakeholder interviewed in the Arkansas Basin. In addition, information identifying other Roundtable members by name or other information that would clearly enable a reader to recognize or easily look up the basin or stakeholder in question has also been removed from the quotations used within this paper to preserve interviewee anonymity.

Chapter 6: Results
Understanding Stakeholder Values in a Collaborative Process

As mentioned in the previous chapters, this research broadly assesses *the conditions under which collaborative governance processes can produce successful policy outcomes* using Colorado's Basin Roundtable process as an in-depth, exploratory case study. More specifically, this broad research question will be examined through the investigation of two major research objectives, each with a number of sub-questions that help to focus the analysis of this case. This chapter focuses on the results and discussion of the first objective and three sub-questions:

RO1: To understand if and how stakeholder values are effectively reconciled in a collaborative process.

In order to understand how collaborative processes can produce successful outcomes, it is first important to understand if collaborative processes actually allow stakeholders to do what they propose: to collaborate in order to arrive at solutions that benefit multiple members of the group. The first research objective digs deeper into this topic specifically by asking if stakeholders actually do reconcile their values in a collaborative process, as well as to what degree and through what processes this happens. The following three sub-questions, which are presented and addressed individually, provide a focused analysis of this research objective while also drawing out themes from the relevant literature discussed in Chapter 2.

Results

RO1.1: Are coalitions formed among stakeholders in a collaborative setting and how are they formed?

Sabatier and Weible (2007) argue that in order to form an advocacy coalition, participants must "engage in a nontrivial degree of coordination" which "involves some degree of working together to achieve policy objectives" (p. 196). However, this coordination may be fairly weak,

depending on the situation and policy objectives at hand (Sabatier & Weible, 2007). Thus, in order to address this first sub-question concerning coalition formation, interview data was coded for "coalition" (COALIT) with specific types of coalitions listed as sub-codes when a participant mentioned coalition building, cooperation, or collaboration with another group or entity within the Roundtable process. However, interviews were also coded for beliefs (BELIEF) and goals (GOAL) held by stakeholders, again with numerous sub-codes to further specify types of beliefs and goals, which could potentially provide insight into additional coalitions or collaborations between groups of actors that were not explicitly mentioned but perhaps occur when groups shared closely related beliefs or goals. When participants mentioned working with outside groups, this text was coded as a description of either a strategy (STRATGY) or a resource (RESOURCE), depending on how the participant described how that coordination with an outside group affected Roundtable activities. For example, if a Roundtable member gave a presentation at a meeting held by an outside group in order to recruit interested members or inform them of funding opportunities made available by the Roundtable, this text was coded as a strategy used by a coalition to further their policy goals. However, if an interview discussed seeking outside funding from an organization (to pay for some part of a project that the Roundtable was taking on, for example), this text was coded as a resource that could be used by a Roundtable member to further his or her stakeholder group's goals.

A large number of coalitions of varying size and structure were identified throughout the Roundtables. One of the most common coalitions seen in the majority of Roundtables was between environmental representatives and recreational representatives who collaborated in order to achieve some of their common goals, such as preserving or increasing stream flows. These coalitions were often formally institutionalized when Roundtables created

"nonconsumptive subcommittees" to work together to assess the environmental and recreational attributes and needs of a basin (initially for the "nonconsumptive needs assessment report" mandated by the CWCB) and then continued from there to take on specific initiatives related to their collective needs:

> [T]he real expectation was developing the nonconsumptive needs assessment, and when we saw that starting to come through in those early days, X and I realized that we needed to make a good commitment to the process. So the expectation was definitely there to build and work on the subcommittee and really build that from the bottom up. (YWG-01)

> I work with X, who's the [other nonconsumptive] rep, and we have a nonconsumptive sub-committee which—along with XX, the engineering firm, does all the work on the nonconsumptive needs of the basin. (AR-01)

> We definitely coordinated… trying to make sure that recreational and environmental issues weren't completely lost in the shuffle. (MT-03)

> [W]e have a very active wetlands committee that has served as the nonconsumptive subcommittee on the Roundtable and now is serving for our Basin Implementation Plan as well; and it pretty much includes the agencies, non-profits, and conservation groups, and interested individuals, you know, federal state wildlife land water management agencies and all that… (RG-02)

These nonconsumptive coalitions were especially effective in achieving broader support for their goals and beliefs from other members of the Roundtable when the environmental and recreation aspects that they were promoting were recognized as economically beneficial to the basin:

> And that's why I feel lucky in the Colorado Basin, because there is such a recreation-environmental-economic component and need. You know, you don't get that in the other basins. (CO-01)

> [F]or example, here in Chaffee County… they see a great economic benefit to having a state recreation area and a voluntary program. (AR-01)

> I think the reason we've been able to get a lot more people across the board to do conservation is to really recognize that there's an economic component to this, and if we can raise the funds… and pay people at least a portion of the value of that then it makes economic sense… (RG-02)

> And hopefully we can pursue development in a way that protects the recreational and environmental priorities that we have on the WS because our economy's dependent upon that. (GN-01)

However, the opposite also holds true in that stakeholders who did not see the nonconsumptive uses as economically beneficial to the basin tended to discount them more in discussions of policy negotiations, regardless of whether they served an important social or cultural role:

> [T]he nonconsumptive uses will not economically sustain the valley and have never, not withstanding the values and everybody loves it and all that stuff. (YWG-02)

Another strategy that nonconsumptive coalitions also used was reaching out to non-voting members or other attendees of the Roundtable that may sympathize with nonconsumptive interests and inviting them to propose nonconsumptive projects to the full Roundtable. Because these people are already somewhat familiar with the dynamics and process requirements of the Roundtable, they may be able to make more successful proposals than outside groups who not as familiar with these intricacies:

> We've got some non-voting members on the Roundtable, and at the time…well, we had parks—state parks—people and wildlife people coming to meetings. So essentially since they were aware of what was going on, we let them know there was money available for projects and then they were the ones that initiated the actual projects… (AR-01)

> So I try to reach out to other environmental folks in the basin and help them bring projects to the Roundtable that are asking for nonconsumptive funding… (GN-02)

Most of the other coalitions identified by Roundtable participants were much less formal and variable in their makeup depending on the context of what industries and activities were particularly important with the basin. For example, interviewees from two Roundtables in particular mentioned that because many—but not all—of the members of the Roundtables had

fairly similar values, those members were able to form "majority" coalitions that advocated for policy outcomes based on the values:

> As a Roundtable, the Metro Roundtable has, with a few exceptions, really is dominated by professional water people, folks…who are tied in with the water utilities or delivery, and less some of the other aspects of government. (MT-03)

> Most of the guys…are there every meeting and they vote conservatively and for agriculture. (NP-01)

However, interviewees most often mentioned coordinated activities that occurred between agriculture and another group (e.g. environmental, recreational, local governments), perhaps because agricultural water use currently accounts for approximately 80% of all water use in the state of Colorado and is also one of the sources that is most threatened by growing municipal use. Table 4 provides examples and analysis of this type of informal coordination between groups, as identified by Roundtable participants.

Some coalitions appear to be so informal that certain members may not even be aware of coordinated activity with another group. This may occur when traditionally opposing stakeholder groups recognize, over time, that they do indeed have some shared beliefs or goals and end up supporting one another without formally acknowledging any coordinated activity. One stakeholder specifically described this phenomenon, where s/he felt like his/her goals were closely aligned with that of another stakeholder group's, yet that other group did not acknowledge this connection:

> So we've… we're pretty well-aligned that way, I think, even though [other stakeholder group] would say we're not aligned, but I think we are. (SP-01)

Obviously, there are many different types of formal and informal coalitions that have formed in order to move specific policy goals and agendas forward in this process. However, when

Table 4. Types of Coalitions Involving Agriculture Identified by Roundtable Participants

Coalition	Relevant Quotations	Comments on Coalition Formation
Agricultural & Environmental Interests	"I think the downstream water—ag water—users, particularly because of fruit and vineyards, support high quality water coming from the headwaters… they're really supportive of nonconsumptive projects to protect water quality" (CO-03).	Users at different geographical locations both gain benefits by supporting each other's needs.
	"It's a good connection between environmental and ag interests. [Regarding water diversions] There's the legal risks, there's the ecological risks, so I think they match up pretty well" (GN-02).	Users face similar risks if they do not support each other's needs in a holistic way.
	"I think that, that some of the awareness starts coming, that hey, when we do a consumptive project and we're out here irrigating hay or irrigating lands for consumption…that in fact that we are charging up the aquifers for late discharge back into those streams to keep late stream flows flowing for our fish" (NP-02).	Protecting certain water uses may benefit other uses at different times of the year; conversely the reduction of one water use may unexpectedly affect another.
	"…if you're in that business, environment is always at the back of your mind, whether it's your own farm or where you get your water or whatever it is…" (SW-03).	Users value the benefits they personally attain from protecting other water uses, even if they don't value those uses outright.
Agricultural & Recreational Interests	"…even the ranchers up in Grand County will strongly defend environmental and recreational flows because they make a lot more money off of those guys in waders from New York than they do on their one cutting of hay" (CO-02)	Users benefit from water that may simultaneously serve multiple stakeholder groups.
Agricultural Interests & Local Governments	"You know, we have some of the county commissioners or representative from the further South or East… Even though they're not an agricultural rep, they know how important water is to their county so obviously they're going support us… " (SP-03).	Users support water uses by other stakeholder groups that are beneficial to their community, even if they don't formally represent that stakeholder group.

Roundtable participants were asked about coordinating with other members of the Roundtable, they more often described "Roundtable-wide" collaboration rather than coordination among specific groups. Important to remember here is that the Roundtable process was initiated with the norm of consensus-based decision-making (which will be discussed in depth in Chapter 7), which encourages all members to work together on mutually agreeable solutions rather than create adversarial coalitions that attempt to "win" over one another, a point specifically alluded to by a number of interviewees:

> So kind of underneath it all that is it if you get collaboration to happen, all those different representatives looking at it from each other's perspective, you basically have the whole group working toward common solutions versus having to fight over and see if you can get the votes or something, you know? (RG-01)

As a consequence, the formation of strong, formal coalitions that could have the image of working against the consensus norm may be limited in favor of more broad-based collaboration across all groups. This can lead to a non-traditional subsystem structure characterized by "loose" coalitions, as hypothesized in Chapter 4. Interviewees describe various reasons why (and how) this "whole-Roundtable" collaboration occurred in Table 5.

Interestingly, some participants saw looming negative effects of this kind of "whole-Roundtable" collaboration in that it could potentially lead to greater intra-basin conflicts. In other words, stakeholders within a Roundtable work closely with one another over long periods of time, leaving few chances for work to be done across Roundtables that promotes statewide collaboration, which in turn may actually foster more polarization between Roundtables. As one Roundtable member put it, the stakeholders within his/her Roundtable are "are very respectful… of each other," perhaps because they too often "direct all their disrespect to somebody in another Roundtable. And maybe there's something to that, of having a common enemy" (CO-03). Another

Table 5. Reasons for "Whole-Roundtable" Collaboration Identified by Roundtable Participants

Reason	Relevant Quotations	Comments on Collaboration
Shared values	"So, there's really kind of coalition between the nonconsumptive and the consumptive users. You know, we all recognize that we don't want to get in a situation where there's a water call. So, what benefits the consumptive users also, for the most part, benefits the nonconsumptive users" (AR-01).	When the Roundtable recognizes that most members share an overarching common value, goal, or threat—in this case, to avoid a compact call on the river—they begin to find ways to collaborate that benefit the basin as whole to promote that common value (or to avoid a common threat).
Learning	"We've all learned a lot about the basin and that's why we act so cohesively on behalf of the basin, because we're all linked together through it" (GN-01). "…the people who were there to protect their interests now have to acknowledge—and I think this has been the growth within the Roundtables, that we really do need to look at it as a basin. We're all in this together, you know, and so yeah maybe I need to give a little bit so you can solve your problem" (AR-01).	Roundtable members learn that water uses are interdependent and begin to think on the "basin" scale instead of from a particular stakeholder perspective. Roundtable members learn about one another's history, culture, values, etc., and begin to understand and support each other's water needs.
Initial Suspicion of One Another	"And I think every group was representative with us. We worked with everybody… they all wanted to participate because they were weary of it, of course… they were suspect, so they wanted to participate and we welcomed them" (YWG-01).	Certain groups may have begun working with other groups because they were initially skeptical about the activities of the other group, which then lead to widespread collaboration among members.
Funding Constraints	"I think the bottom line is that they can't afford to rehabilitate that reservoir on their own, so it's through the collaboration they're going to get a lot more done than they could on their own" (RG-02).	Stakeholder groups realized that collaborating on projects that benefit all members not only makes the project more feasible for the Roundtable but also helps stretch financial resources further by appeasing multiple groups at once.
External Threats	"You've probably heard the history of threats of water exportation out of the valley… so those threats, really, in a really interesting way, coalesced the community…and pulled those interests together" (RG-02).	Stakeholders have faced situations in the past where they've needed to band together to protect their basin, so they are in some sense "primed" for widespread collaboration at the Roundtable level.

interviewee described the issue similarly, explaining that Roundtables have little incentive to collaborate with those outside of their own basins:

> I think prior to the Roundtables… folks generally liked each other even if they were on the other side of the table. They spent a lot of time together and they respected other positions. The thing now is like there isn't that interaction [between Roundtables]; we're just in our camp demonizing the other side. (MT-01)

Thus, in a multi-level process that involves a number of collaborative groups that must not only collaborate within groups but also across groups, extra precautions might be needed to prevent the separate groups from "demonizing" one another, a behavior reminiscent of Sabatier et al.'s (2005b) "devil shift," or "the tendency for actors to view their opponents as less trustworthy, more evil, and more powerful than they probably are" (p. 192). Instead of entering into truly collaborative agreements in these situations, groups with different beliefs may actually work to crystallize more adversarial coalitions on an inter-Roundtable level. As the Roundtables move toward the creation of Colorado's Water Plan, an effort in which they will truly have to collaborate across Roundtables for the first time, this issue may perhaps become increasingly salient (see Figure 4 for a visual depiction of this potential situation).

RO 1.2: Do stakeholders prioritize certain goals/beliefs over others when making collaborative decisions?

Interviewees were not only asked about their stakeholder groups' goals and beliefs but also about which of these goals or beliefs were most important to have integrated into documents such as the Basin Implementation Plans (BIPs) and Colorado's Water Plan (CWP), as well as how easily this was accomplished. Thus, in addition to coding for goals (GOAL) and beliefs (BELIEF), transcripts were also coded for how stakeholders felt that their values were integrated into specific activities and the process as a whole (INTGRTN), with subcodes that included a spectrum from easily integrated to partially integrated to difficult to integrate. Although a few

stakeholders listed specific projects or even broader values that were the most important to them, the majority of stakeholders had a difficult time identifying specific goals or beliefs, much less prioritizing them.[3] This could potentially be driven by the fact that the mission of the Roundtables for the majority of their existence was simply to assess available water and current and future gaps within their individual basins rather than prioritize what to do about these issues. Only recently have the Roundtables truly been asked to begin defining potential, yet realistic solutions to their needs as they create their BIPs and work towards CWP, which many have begun to do by creating a list of "goals" and then prioritizing them with the help of consultants contracted to write the BIPs in most basins. Several interviewees volunteered thoughts about this process, specifically citing that having to prioritize solutions rather than simply assess resources and gaps is difficult for some basins:

> We want to capture briefly where we've come from in the last eight years, the successes, and identify what now the new challenges are and really focus in on prioritizing. Now that makes people nervous. (RG-01)

> What are our priorities? What do we really want to tackle? So, we don't really have a good answer. We have these stretches of river, and, that we said "okay this is important for recreational, this is important for sort of environmental benefits," but we don't really know exactly what that means yet. We're just—because of the State Water Plan and the Implementation Plan—we're starting to delve into that a little deeper. (SP-01)

> Fingers crossed, we're rapidly approaching that kind of, if you will, decision-making time… so if you see the lid blow off the Yampa, you'll know that we're human like everybody else. (YWG-02)

> We really have shied away from prioritizing and that is something at the beginning with [the State Water Supply Initiative] in that our SWSI is a kitchen sink… (SW-01)

[3] Interestingly, some of the stakeholders that were most willing to discuss the difficulty associated with prioritizing beliefs also volunteered their own priorities: "you know, kind of our first priority [is], kind of getting the consumptive users to recognize that there are projects out there that are simply standalone important projects for the environment and for recreation that they should support" (SP-01).

Consequently, from the data collected for this study, it is difficult to understand whether stakeholders actually engage in the process of prioritizing their goals or beliefs and working adamantly to have their "top" goals or beliefs integrated into Roundtable documents or the process as a whole. Implications of the lack of prioritization, as well as the concept of the BIPs and CWP as drivers of prioritization, will be discussed in further sections of this study.

RO1.3: Do stakeholders alter any of their values or beliefs after interacting with other stakeholders in a collaborative setting?

Building on ideas alluded to within the previous sub-question, the ACF predicts that stakeholders will potentially change their "lower level" beliefs (particularly, their secondary beliefs) when working with other stakeholders in a policy process, but it is highly unlikely that they will alter their deep core beliefs[4]. Interviewees often echoed this sentiment—that their core goals and values have not changed as a result of their participation in the process, but that they have found activities and strategies that allow them to cooperate with other stakeholders on in order to achieve some mutually beneficial solutions. Text referring to these issues was coded separately to reflect value, belief, or goal change (VBGCHNG). When stakeholders were asked if any of the major goals or beliefs had changed as a result of the Roundtable process, they stated:

> Well, I think, everything's gotten better but I don't think much has changed about our goals. (AR-01)

> You know, people don't change their core values and it's not realistic to expect that out of a process like this. But I think there definitely is a better understanding. And probably part of why you hear so much from people about these multi-purpose projects is that one of the places where we've really been able to find a common interest… (MT-03)

> On the whole, I'd say the whole Roundtable understands the goals [of the collaborative process], but that being said, everybody has their own agenda…

[4] Here, an example of a core belief might be a general preference for more or less government regulation over resources.

> everybody protects their own interests as best they can. But yeah, as a group—that's one thing that's unique about this valley is… when there's a big problem, people kind of work together. (RG-03)

Of course, not all stakeholders are going be completely satisfied under these circumstances in which their goals, values, and beliefs are only partially realized in Roundtable decisions and outcomes; however, many interviewees in this case explained that they benefited from gaining a better understanding of the water issues in their basin and the water uses that were important to their fellow citizens, and that this understanding then enabled them to work together in new ways, such as through the creation of "multi-purpose projects," as mentioned above. In other words, these actors may have experienced some degree of policy-oriented learning that affected their intentions and behaviors, even though it did not induce a major policy change:

> We've got to the point where we understand people, each other. You know, I'm much more cognizant of agricultural water needs and the agricultural tradition and culture, and, and much more, you know careful how I deal with it, because these are important values… (CO-01)

> [W]hen this started, there was a lot of Upper Basin-Lower Basin tension… people were keeping score about how many [Roundtable seats] from the Upper Basin, how many from the Lower Basin… but that's all behind us now. It's a very much cohesive group, collaborative, as you can see from the results I'm pointing out that most everything is done unanimously… so the whole dynamic really has changed." (GN-01)

> [A]t some point they're not the other side; they're us…. we're us… they're not different sides… it's all of us trying to figure out our problems, you know, and find that lasting workable solutions. (RG-02)

Based on this trend, the creation and promotion of "multi-use" or "multi-benefit" projects may be an important strategy used by Roundtable members, especially those who emphasize learning and "whole-Roundtable" collaboration, as opposed to formal coalition building among groups, as a path forward for their Roundtable. Multi-purpose projects also provide a "middle ground" in

which stakeholders with different core values can work to collaborate on solutions that ideally end up benefitting all or most groups involved. This change in the type of policy tools utilized with in the process is quite indicative of May's (1991) "instrumental policy learning," and may also signify some degree of "social policy learning" because policy participants have broadened the scope of beneficiaries from a given project.

Discussion

Returning to the overarching research objective of this chapter—*determining if and how stakeholder values are effectively reconciled in a collaborative process*—it is obvious that through the Roundtable process, stakeholders do learn about one another's values and even work cooperatively with other groups to attempt to further outcomes that reflect these values. Consistent with ACF literature, stakeholders in this process do not change their core values but do seem to reconcile their secondary beliefs, and potentially their policy core beliefs, with other stakeholders, allowing them to work together on solutions that are mutually beneficial. However, because many stakeholders had a difficult time identifying their group's beliefs, much less prioritizing these beliefs, it is difficult to understand the level at which stakeholders begin to reconcile their beliefs. While strictly cataloguing coalitions and their respective belief systems was not the main focus of this study, carrying out this type of analysis in the future in order to better understand how far this belief reconciliation extends would be useful, especially after stakeholders more formally define their beliefs in future documents such as the BIPs and CWP. A few major points underlying the above findings are important to expand upon here.

The most formally defined coalitions in the Roundtable process were observed between environmental and recreational interests. These coalitions included official recreational and environmental representatives and sympathizers that held other positions within the Roundtable.

The strength and frequency of these nonconsumptive coalitions does not seem too surprising, considering that the nonconsumptive representatives are often vastly outnumbered due to the enacting legislation that defines Roundtable membership (discussed in Chapter 3 and detailed further in Chapter 7). Some nonconsumptive representatives even described themselves as "token stakeholders" (SP-01), which may have motivated them to join up with others that have some overlapping beliefs and interests in order to show a more united front when attempting to further their policy objectives. Additionally, because nonconsumptive interests have only recently been integrated into water planning processes in comparison to many of the consumptive interests,[5] building coalitions among themselves and then seeking the support of others could be an important coalition strategy. Emphasizing the economic benefits of the environmental and recreational attributes that they are trying to protect seems to be a particularly successful way to do just that in many Roundtables.

The other coalitions that were mentioned by interviewees were much less formal and often involved stakeholders simply recognizing shared beliefs and then supporting one another or perhaps even working together on a specific project. This observed pattern could potentially be attributed to the argument outlined in Chapter 4 that links consensus-based processes, especially those in which participants have some overlapping beliefs, resources, and strategies, to more loose coalition structures. One interviewee even made this connection directly, replying with the following statement when s/he was asked whether s/he cooperated with other stakeholders on the Roundtable: "we're not forming coalitions with other groups, and we haven't had to like… because we're… the way we work, we're consensus oriented…" (AR-01). Thus, the consensus-based structure of this collaborative process seems to push stakeholders toward whole-

[5] "Golly…when I first got into the water business, it was just what I call the old water buffalos that were in, in the water discussions. And environmental, ecological, water quality issues have become involved and that's good" (SW-03).

Roundtable collaborations that utilize shared resources and strategies (such as seeking out "multi-benefit" projects) and away from formally-structured, adversarial coalitions. While the contribution of consensus to Roundtables processes and outcomes will be discussed further in the next chapter, this idea could be more formally tested in future work by observing subsystem structures for policy processes dealing with similar management issues but working under different consensus norms.

One potential downside to this trend toward "whole-Roundtable" collaboration, however, is the possibility that consensus-based processes will typically lead to "lowest common denominator" solutions (Leach & Pelkey, 2001, p. 382); in other words, collaborative groups will avoid the most important, yet most controversial issues in favor of tacking those around which consensus may be easier to reach. The types of outcomes produced in a collaborative process, as well as the inherent limitations in producing certain outcomes under given biophysical, social, and political constraints, will be investigated in detail in the following chapter.

Chapter 7: Results
Understanding Outcomes in a Collaborative Process

In order to continue to address the overarching goal of this study (*understanding the conditions under which collaborative governance processes can produce successful policy outcomes*), a second research objective is posed:

RO2: To understand how outcomes are produced in collaborative policy processes.

Building on the ideas about value reconciliation and coordination among stakeholder groups that underlie collaborative processes as discussed in Chapter 6, this chapter will work to answer the second research objective through a series of four sub-questions, each stated and analyzed separately below. Broadly, this information helps to address the overarching research question of this study because it unpacks what outcomes actually look like in a collaborative process and how these outcomes are achieved by participants, as well as what inherent limitations arise when collaborative groups attempt to promulgate certain outcomes. Understanding these factors can help researchers and practitioners alike determine and implement the conditions necessary for collaborative groups to produce successful outcomes.

Results:

RO2.1: What do outcomes look like in a collaborative policy process?

In order to understand if a collaborative process can produce successful policy outcomes, one must first understand what the outcomes of such processes actually look like and how they may contribute to policy formation and change, as many of the outcomes associated with collaborative processes are often not formal policy documents. Gaining a better understanding of what outcomes may arise from collaborative processes can also help shape a more realistic definition of a successful collaborative process—something that is often ill-defined and poorly

understood, as discussed in Chapter 2. In order to understand what outcomes look like in the Roundtable process, interviewees were asked a number of questions on the following topics: major activities that the Roundtable has completed, is working on, or plans to work on (with a particular nod towards the Basin Implementation Plans and Colorado's Water Plan); rapport-building among Roundtable participants; types of recommendations or alternatives suggested by the Roundtable; and places where Roundtable members have seen their decisions, recommendations, or ideas integrated into policy. However, interviewees also mentioned outcomes, successes, or results that have arisen from Roundtable work in a number of other areas of the interview, including those that discussed goals, outreach, and working with other stakeholder groups. Any text relating to these topics was coded as an outcome (OUTCOME) and further sorted into specific subcategories. Table 6 provides a list of the most common outcomes mentioned by interviewees, as well as the Roundtables that mentioned these outcomes and examples of how they were described.

The outcomes most commonly identified across Roundtables include 1) funding projects through Water Supply Reserve Account Grants (WSRAGs), or the budget provided to the Roundtables by the State through the CWCB; and 2) learning or teamwork among stakeholder groups. The importance of learning—and the effects it can have on the collaborative process, such as encouraging basin-wide collaboration—was discussed in the previous chapter. The role of the WSRAG funding will be discussed here briefly.

Aside from being widely cited among interviewees as an outcome, the importance of the WSRAG program (and the projects funded through it) to the Roundtable process as a whole was reasserted frequently by participants across the state. In addition to providing money that the Roundtables can distribute with few restrictions, the WSRAGs were also cited as a crucial

Table 6. Major Outcomes Identified by Roundtable Participants

Outcome	Roundtables that Identified Outcome	Relevant Quotations
Policy Documents or Tools	AR, CO, GN, MT, SP, YWG	"So, the Metro has written white papers are on conservation, reuse, and new supply, and then that was the framework for the Front Range Roundtables' white paper" (MT-01). "…certainly studies and projects that [the Roundtable has] funded are starting to turn into policy... Whether we'll see some sweeping changes in policy on some of these things, who knows, but small steps for sure" (SP-01).
Funded Projects	All Roundtables	"And so that's an example of where we took the Water Supply Reserve Account funding, initiated a process…that lead ultimately to legislation to try to solve a problem. So that goes directly to meeting our need" (AR-02). "We're good at spending money… and having a lot of projects in the pipeline" (RG-03).
Learning/Teamwork among Stakeholder Groups	All Roundtables	"I think [the Roundtable]'s really been successful on…understanding the perspectives of other individuals, whether it's M&I, or ag, or nonconsumptive uses and how we have to coexist and how we have to work together, and how can we best utilize the resource" (AR-03). "And so there's been this huge communication-education process… I can actually learn something if I'll listen to the other guy for a few minutes" (RG-01).
Increased Diversity in and/or New Forums for Water Conversations	CO, SW, YWG	"I think that one success…of the whole Roundtable process has been to bring more people into the water conversation, and it has introduced environmental and recreational communities to the conversation. And, it also brought in agriculture and municipal and industrial interests as well, and it's put everybody in the same room" (CO-01).
Community Building & Increased Rapport among Participants	CO, GN, MT, NP	"That was one of the biggest things with the Roundtables, was rather than special interest groups, we became people. Yeah, it literally, very much more, became a community" (CO-02). "If this process has achieved anything, it has achieved tremendous rapport among different stakeholders" (GN-01). "I think that you spend this much time together, you get to know each other… when you develop trust between people even if they have different agendas and different goals, they tend to be able to have a civil discussion, a worthwhile civil discussion on how we meet those different agendas and goals" (MT-02).
Public Education (of those outside the Roundtable)	GN, NP, RG, SP	"I think the Basin Roundtable process around the state is invaluable for keeping people informed and educated about water…I think the people of the state of Colorado have become better aware and educated about water because of the Roundtable process" (NP-01).

incentive to keep people committed to the Roundtable process. One Roundtable member stated that "the money is the honey that attracts people" (RG-01) to the process in the first place. Others argued that the continued existence of the Roundtables is mostly due to the money available through the WSRAG program:

> Well one thing that has kept this process alive not just in the Gunnison basin but throughout the state is this Water Supply Reserve Account. That gives the Roundtables an actual function… I'm sure it saved the process statewide because it at least gave the Roundtables a specific purpose where they could take action and see things happen. (GN-01)

> Well, and I think part of what Russ George [the man who first proposed the idea of the Roundtable process] did was when they created the Roundtables was to make sure that there was something to keep everybody at the table—and that something was potential money for solutions. (AR-02)

Moreover, the process of deciding which entities will receive grants, and on an even more basic level what the criteria are that the Roundtable bases their decisions on, has also created a forum for having focused discussions on topics important to Roundtable members:

> Well, I think the grants…tend to drive some of what we do because we have to have discussion about the grants so it gives us a way to focus on what our priorities and criteria [are]. (CO-03)

However, this is not to say that the WSRAG-aspect of the Roundtables has been free of contention. One of the most frequently cited concerns was that nonconsumptive projects were not given as much attention, and consequently less funding, in this process. One interviewee elaborated on the reasons for this, pondering that it might be more difficult to convince people to fund nonconsumptive projects because they can be "all about planning and not about shovels in the ground" (GN-02):

> [O]ften agricultural needs can be met by like spending money on projects on the ground through like putting in new infrastructure…but environmental needs are often about letting things be the way they are or getting water back into the stream… so our needs are a little bit different than traditional water users and so I think that's one of the main challenges is to translate that. (GN-02)

This sentiment was also echoed from consumptive users who preferred to see WSRAGs fund tangible projects that provided immediate benefit to water users:

> I like to see the money out doing stuff not studying stuff. (RG-03)

> If you're going to throw money away, at least a headgate is something physical… people grew tired of funding studies and spending money on studies. (NP-01)

Thus, although funding projects was widely cited as an important outcome of the Roundtable process, it also drives much of the contention within the Roundtables. However, the fact that stakeholders at least have a productive and manageable forum for discussing these issues that may not have come to the surface if funding was not available is an essential impact of the WSRAGs program.

Additionally, a number of other important outcomes were identified by interviewees from at least two Roundtables, including the creation of policy documents or tools, increased diversity of participants and forums for water conversations, community building and increased rapport among participants, and public education. The first of these—the creation of policy documents or tools—is perhaps what many would consider a "formal" policy outcome of a collaborative process. For the purposes of this research, documents that were created in response to a CWCB mandate were not considered in this category, as all Roundtables were required to complete these. Instead, this category includes reports and other documents initiated by the Roundtables themselves such as "white papers," which provide official statements on specific policy issues such as municipal conservation or the development of new water supplies from the Colorado River. Other Roundtables created tools that could become helpful in the development of formal policy. One example is the Watershed Flow Evaluation Tool, a tool used to "assess the flow-related status of nonconsumptive attributes at multiple locations across a watershed," whose development was initiated by Colorado Basin Roundtable (Sanderson et al., 2012, p. 1.2).

Education of the public may also be considered a somewhat predictable outcome of collaborative policy processes, as many "bottom-up" processes attempt to get the community involved in some way. Specific to the Roundtable process, the enacting legislation requires that the IBCC create a workgroup to address and actualize public outreach and education (CWCB, 2014c), which in turn helps each Roundtable create ways to educate the citizens of their basin. Four of the basins specifically cited outreach activities, ranging from specific outreach documents to generally spiking public interest in water management, as important outcomes from their Roundtables. However, according to a report prepared by the Colorado Foundation for Water Education (2010), as well as interview commentary from stakeholders across interests groups and basins, the majority of Roundtable members see their Roundtable as "less than sufficiently effective at promoting public participation in the Roundtable process" (p. 18).

The final two outcomes mentioned by interviewees—increased diversity of participants and forums for water conversations (mentioned by three Roundtables) and community building and increased rapport among participants (mentioned by four Roundtables)—are a bit more vague and informal. However, as one Roundtable participant put it, "there are a lot of profoundly positive outcomes that aren't apparent on the surface from the Roundtable process" (YWG-03). Further investigating the effects that these types of organizational outcomes may have on policymaking is an important area for further study; Sabatier et al. (2005a) suggest that they can facilitate the additional outcomes of "creative, win-win solutions" that are less "plagued by endless litigation" and represent "greater legitimacy" (pg. 5-6).

RO2.2: How are proposed outcomes limited by stable parameters, such as distribution of the good in question?

Although interviewees were not directly asked about factors that limited their ability to create successful outcomes, the vast majority of interviewees identified at least one "limit" that was related to inherent constraints on the resource in question or to managing this resource through a collaborative process. Commonly identified limits to successful collaborative outcomes, along with a brief explanation of the limit and a list basins that specifically identified the limit, are described in Table 7.

As mentioned in Chapter 2 and 4 of this paper, the ACF includes a set of variables termed "Relatively Stable Parameters," which contains the following variables: basic attributes of the problem area (good), basic distribution of natural resources, fundamental sociocultural values and social structure, and basic constitutional structure (rules) (see Figure 2). Although these parameters do not *inherently* limit potential outcomes, many of the Roundtable members mentioned these variables as constraints. Text concerning these issues was coded as an outcome limit (OUTLIMIT) with a number of sub-codes that further grouped similar limits.

For example, dealing with a system in which most water is over-appropriated and governed by a complex water rights regime (as outlined in Chapter 3) prevented some stakeholders from easily testing potentially innovative solutions to water shortage issues, such as short-term water transfers from agricultural to municipal use during dry years. Other users saw a lack of information as a fundamental limit because they could not promulgate successful outcomes without the appropriate and accurate information. Still others saw underrepresentation of certain groups—especially nonconsumptive users who are often new to the water conversation—and limited participation from others as a main constraint on producing successful outcomes. Finally, some interviewees saw political/bureaucratic issues, whether this concerned

Table 7. Limits to Outcomes Identified by Roundtable Participants

Limit	Roundtables that Identified Limit	Relevant Quotations
Limited Water Supplies	AR, CO, GN, MT, RG, SP, SW	"Well, the whole basin is over-appropriated, so we're water poor basically as a rule… you know we're in a dry cycle and the climate… so that's it basically" (RG-03). "I mean, there's only so much water and the geography of the state isn't likely to change" (MT-02).
Water Law, Water Rights, and Compact Obligations	AR, CO, GN, NP, RG, SW, YWG	"Because [the Arkansas River is] already so over-appropriated and because of requirements of the Supreme Court decision with the state of Kansas, we have to be very careful…" (AR-01). "So we here in Western Colorado, we don't want to be in position of causing compact administration on the [Colorado] river, which would further target the demise of agriculture and would also cause chaos under water administration" (CO-01).
Lack of Information or Data	AR, RG, SP, SW, YWG	"Well, if you don't have information about what your nonconsumptive needs are, how much water you need to have in the river… If you don't know how much water you need, how can you say where you have a gap?" (SW-02).
Underrepresentation of Certain Stakeholder Groups	AR, CO, GN, MT, NP, SW, SP, YWG	"I think the recreation and environmental stuff is an important need, but it's probably underrepresented… in other words, you have these two representatives from every jurisdiction and then you have the ten sort of 'at-large' reps, and there's one for the environment and one for recreation" (AR-02).
Low Participation (by Members or Important Stakeholder Groups)	CO, GN, MT, NP, RG, SP, YWG	"I mean, frustratingly, there are only a relatively small number in any community… there's only a handful of folks that participate and do the work" (YWG-02). "I'm a true believer in the transparency but I'm also a true believer that people have to get involved, you know? And they're pretty nonchalant about it … including you know, state senators and you know, elected officials, etc." (SP-03).
"Red Tape" or Permitting for Projects	AR, SP, SW, YWG	"Just enlarging two dams is going to take a lot of work just to get it approved and then you're probably looking twenty years down the road till that can actually happen" (AR-01). "The particular point that I was making there is that actually accomplishing that will only occur when the parties involved are willing to change NEPA and the permitting process to where it is actually less burdensome" (YWG-02).
Bureaucratic Issues, Political Climate or "Politics"	CO, GN, MT, SP, SW, YWG	"Denver Water is trying to push legislation to require only that the higher efficiency fixtures be sold. It seems to us like a no brainer tiny baby step in a much more difficult progression of things we're going to have to do to meet the gap, and we can't even do that, right? So why would we want to count on going down this path of huge amounts of progression on conservation without even taking the first steps" (MT-01). "So, you know, people are looking to field the gap on the Front Range and of course everybody in the Yampa and the Gunnison is worried that we all have a target on our backs" (GN-02).

permitting constraints for new projects or the potential for politically powerful entities to take control of the process, as major limitations to the outcomes that they would like to see produced. Interestingly, many of these limits would not exist in a top-down governance system where decisions are made and put into action by the one entity that, for the most part, has enough power to overstep things such as informational limitations. This provides one example of how variables within the "Long-Term Coalition Opportunity Structure" box of the ACF, specifically those concerning consensus, can moderate between relatively stable system parameters and how groups interact within a policy subsystem.

Another limit mentioned my many interviewees was related more directly to the Roundtable process as opposed to an external factor: the length of the process. While it is obvious from the literature, as well as the reasons interviewees gave for "whole-Roundtable" cooperation outlined in Chapter 6, that long-term, face-to-face contact is important for promoting trust, understanding, and collaboration, such a lengthy process can potentially be taxing on participants, especially those that do not recognize or benefit from some of the more intermediate, informal outcomes of the Roundtable. In addition, some participants feel as if the Roundtable process is trying to take on too many issues instead of focusing on "the problem," as defined by most Eastern Slope basins, of filling the municipal supply gap on the Front Range. A number of interviewees reflected on this issue of speed specifically:

> Something that I think is powerful about the Roundtable structure is the inclusion of all these different interests and kind of creating a network of…and enhancing the existing networks of people working on these issues from various angles, giving them a forum to come together and work is just, you know… I think over time creates good outcomes, but how do you enhance those and speed those up? Good questions. (RG-02)

> I can honestly say that we've always wanted to see more happen quicker… much to the frustration to a lot of folks... (SP-03)

> I've been quite frustrated with the slowness of the groups in trying to resolve that issue and felt like, well, really maybe the Metro and the South Platte ought to just work together on what they can do. We've got the problem. So, in a sense we're being dragged down by a lot of different interests around the state, I think detracting from the majority of the problems right here, right now. (MT-01)

The length of the process may also drive some stakeholders away from the conversation completely, an issue with major procedural consequences that will be discussed in more depth under the following sub-question.

An additional factor that was only raised by a few interviewees directly, but was often alluded to more broadly, was the idea that even if governance of water resources was actually modified as a result of this collaborative process, the way water is used is affected by other sectors outside of the water users themselves. One interviewee put it this way:

> If we're really going to solve some of these issues, we really need to get some of the other local governments that are involved in land-use planning much more attuned to water and understanding the importance of how their decision-making process and things like the density of the development they do and the types of landscaping they allow in new commercial or pro-residence developments, how that all feeds into our ability to meet—or not—our future water needs. (MT-03)

In other words, Roundtable members may feel that even if they are able to promulgate outcomes that work to meet their basin's water needs, these strategies will ultimately prove ineffective unless all of the appropriate entities are involved in and committed to the solutions.

A final, and crucial, constraint that many interviewees addressed quite separately from the other limits mentioned in Table 7 is the power that the Roundtables have to fundamentally create outcomes, especially considering the multi-level governance structure in which the process is embedded. Interestingly, some interviewees saw the Roundtables as having a large amount of power in a number of different venues, while others saw the Roundtables as essentially powerless due to their lack of formal legislative power. Text concerning these issues was coded for both power (POWER), which consisted of "yes" and "no" sub-codes, and multi-

level governance (MULTILVL), which contained categories for specific CWCB-IBCC-Roundtable issues, as well mentions of more broad-based local-state-federal concerns.

Importantly, a number of interviewees saw the Roundtables as having an important and powerful role in the process of governing Colorado's water resources, despite the fact that they legally do not have any decision-making power. One interview conceptualized this by likening the Roundtables to a Chamber of Commerce, a governing body who "has no power in itself but it has a voice because its members come from various constituencies" (CO-01). In other words, even though the Roundtables have no formal power, they do preserve the ability to exert important influence—or "moral authority" (AR-02)—on planning and decision-making processes within the water supply community.

A number of other interviewees mentioned that the Roundtables' power and influence stems directly from their authority to decide which entities to grant funding to within the basin:

> [T]he Roundtables themselves have money and authority—to a pretty good degree—to spend their own basin funds. (RG-02)

> I do think the Roundtables have a lot of power because they have complete decision-making [authority]… They really have a lot of control as to how they spend their money… In some ways I think they do have a lot of power and, and never before have we had this big bucket of money in our basin for water projects, so that's a pretty big deal I think. (SW-01)

However, many other participants saw the Roundtables as fairly powerless, leaning on the fact that they have no legislative authority to actually build projects or pass laws:

> What more [the Roundtable process] will accomplish is questionable I think because the Roundtable has no legal authority to do anything except present nice plans, so that's been the disconnect from the very outset. It was one of the objections to the bill in the very first place. You know, this is just an exercise in futility because even if you come up with the best plan, you still can't implement it—you have no authority. (GN-01)

Some interviewees put this more grimly, citing concerns that the outcomes produced by the Roundtables may exert very little influence on future water planning in Colorado due to the Roundtables' inherent "powerlessness":

> Colorado likes to do things from the bottom up, and here you have a governor trying to do something from the top down, so it's already an idea with a lot of opposition, which is why, that being said, I'm really curious to see what the outline of the draft of that [state] water plan is going to look like…who's going to be the leaders, what's going to happen, and how do we get to that point of the implementation? The fact that the turn-arounds [for basin input] are so quick leads me to believe that the plan itself will be rather shallow. (SP-03)

As alluded to in the above quote, recognizing where Roundtables stand in relation to the other governing entities involved in the process is also critical for determining what limits are placed on the Roundtables.

Concerning these power relationships, some Roundtable members outright questioned where they stood in relation to the IBCC, the organization that was created alongside the Roundtables to facilitate statewide discussions of water policy and management, and initially to help the Roundtables negotiate voluntary water-sharing agreements between basins.[6] A number of stakeholders explained that they feel the IBCC has "struggled for its identity" (AR-02) throughout the process: "To use a military context, do they out rank us? Are they the super-board? Nobody really knows." (AR-02) This sentiment was echoed by other interviewees who seemed unsure of what the true role and authoritative status of the IBCC actually is compared with the Roundtables and even the CWCB:

> When you separate decision-making authority… and the CWCB has authority and funds and they have to make decisions and do stuff, and IBCC isn't as clear, so that makes it challenging in a new way. (RG-02)

[6] None of these agreements have been officially created to date.

Others spoke more broadly about related concerns with the "top-down influence" on what was supposedly developed as a grassroots process centered on basin-scale analysis and decision-making:

> I think there's a little bit of the problem there in that the Roundtables get pushed, distracted, whatever you want to call it, because a state, a state who provides the grant funds and all that, is kind of driving the agenda a little bit. And, I think we'd probably be doing something a little bit different [if the state was less involved], but I can't tell you exactly what that would be. (CO-03)

Therefore, while perceptions of being powerless might serve as a limit to some Roundtables as they attempt to produce outcomes, it may simultaneously empower other Roundtables (those who see their ability to grant funds and influence conversations as important) to devise innovative solutions to Colorado's water issues. Investigating the relationship between Roundtable members' perceptions of power and the outcomes their Roundtable produces could be an additional area for fruitful further study.

RO2.3: What role does consensus play in producing outcomes in a collaborative process?

In order to understand not only what outcomes look like in a collaborative process, but also how Roundtables actually produce said outcomes under the norm of consensus, interviewees were asked if the Roundtable that they participate in usually comes to consensus, as well as what issues were the easiest or most difficult to reach consensus on. The responses that interviewees provided were coded for processes described to reach consensus (CONSEN) and well as for the various definitions of consensus provided (CONDEF), again each with a number of sub-codes. Table 8 displays Roundtable participants' varying definitions of what consensus means in their own Roundtables.

Interestingly, there was much overlap between these categories, and thus they should not be considered hard-and-fast, especially because all Roundtables "vote" on proposed projects to

Table 8. Definitions of Consensus as Identified by Roundtable Participants

Definition	Roundtables that Mentioned Definition	Relevant Quotations
Unanimous Agreement • requires *all* members to vote in favor	SW	"And we have had those moments when someone said, 'I will not provide consensus on this,' and so it has gone back for further discussion or something like that. So we've seen that work" (SW-01).
Majority Agreement • specific mention of a "majority rules" case in which the side with the most votes "wins"	CO, NP, SP	"So, we do operate under consensus and that consensus can look like a 19 to 3 vote, or you know, a 17 to 5 vote depending on who's there" (CO-01).
General Agreement • no specific mention of numbers or "majority rules;" instead, the focus is on a feeling of general agreement or at least the absence of stakeholders who clearly disagree	AR, GN, MT, RG, YWG	"The way we work, we're consensus oriented, and our definition of consensus is, you know, 'if you can hold your nose and not, even if you don't like it, if you can hold your nose and okay, then the project passes'" (AR-01). "So, consensus for us… it's a nice word, but we try to get to general agreement, understanding that you can not—it's not perfect" (RG-01).

some degree. In fact, even though some Roundtable members made it very clear that their Roundtable does not define consensus as being unanimous[7], members from all Roundtables mentioned that decisions were made by unanimous vote more often than not. Additionally, while the majority of Roundtable members expressed that their Roundtables have deep discussions and negotiations that, once complete, typically satisfy the majority of members, a number of interviewees also cited different reasons for why their Roundtables come to consensus that are important to discuss here.

All of the interviewees from the Southwest Basin emphasized that because their basin is actually composed of nine fairly separate "sub-basins," decisions on most projects that came up for a vote relied heavily on the representative of the basin to which that project applied to influence the rest of the group's vote:

> It seems like many of our decisions are… "shall we do this?" Somebody says "yes," and everybody says "okay," and that's consensus. And it's probably because we have the nine separate basins, and so somebody from X isn't in tune to the needs in Y, and if Y says they need it, I'll go with it (SW-03).

> I think it's different in our Roundtable because we are nine sub-basins and it makes it very difficult…I live in the X sub-basin, and it's so far removed from the Y sub-basin and from the Z area, and so it's very hard for me to tell them "this isn't a good project"… we kind of rely on the representative from each of the nine [sub]basins [for a recommendation] and there's very little questioning of that. (SW-01)

Interestingly, the Southwest Basin was also the only basin that defined consensus as having all members agree[8]. Somewhat similarly, members in the Gunnison Basin occasionally come to consensus in a more passive manner that leans on the advice of "experts" on the Roundtable:

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[7] When asked about consensus, one participant replied, "No, we vote… I don't agree with the term 'consensus.' I think in this country, we vote… We don't operate by consensus. We have general agreement, but we vote" (NP-01).

[8] One member of the Southwest Roundtable expressed concern that the Roundtable never clearly defined what "consensus" meant, but also said that it never became an issue because everyone always agreed: "I guess I was in favor originally of a vote rather than consensus cause no body could … okay, we got twenty-nine or thirty members

> Amongst thirty people, there are definitely probably five or six really respected leaders who do most of the talking and people kind of trust their opinions. (GN-02)

Additionally, members in the South Platte and Metro basins may reach consensus due to yet another issue alluded to previously: that many of the most controversial players have been "worn out" by such a lengthy process, leaving only those who generally agree—or are at least very willing to compromise—to do most of the negotiating:

> I think the process to this point may have worn some of the participants out. So the people who are still at the table are going to probably agree anyway, you know. Like the people at the table are people that we have worked with in the past, we know we can work with; some of those people that we can't or haven't—I wouldn't say we can't, but they just aren't showing up anyone—just aren't there to really promote maybe some of those contentious issues that we should be debating. So I think that's a process issue more than anything else. (SP-01)

> I think our Roundtable and how it's proceeding generally, to borrow a phase, is a little bit of a "coalition of the willing"… it's ultimately been a long enough, slow enough, painful enough kind of process for folks who have frustrations… [so willing members are] self-selected to participate. (MT-03)

In other worlds, basins may experience "consensus by attrition" as groups that are more controversial or generally receive less support at the Roundtable fail to participate over time, leaving only those members who generally agree to make decisions.

As discussed in Chapter 2, because most collaborative governance processes including the Roundtable process rely primarily on "consensus-based" decision-making models (Kenney, 2000), the achievement of "consensus" by a group is often be equated with successful collaboration. Ideally, consensus-driven models foster the development of organizational attributes such as improved trust and social capital among stakeholders, which many assume to have a "cause-and-effect relationship" with "on-the-ground success" (p. 39-40). However, as seen above, Roundtable members define consensus—and the appropriate processes through

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and so what if you have a consensus except for two people, is that a consensus? And I don't know if we've ever defined that. Luckily I guess we have never really had to face it" (SW-03).

which to reach that consensus—in a variety of ways. Moreover, expressing that the group generally agrees appears to be important for each Roundtable. These overarching claims about consensus may be due in part to a belief held by the interviewees that consensus is appropriate, acceptable, and even what *should* result from a collaborative process. In other words, "[c]onsensus, we are told, is not merely a logical and inevitable product of the search for truth, but is something with a strong social value" (Kenney, 2000, p. 41).

This begs the question of whether some stakeholders may "consent" to projects or ideas in a collaborative process for reasons other than legitimately agreeing with the project or idea. For example, one stakeholder, whose basin identification is removed in order to further protect anonymity, explained the following:

> I'm often in a position where I would be the only dissenting vote, and in order to maintain some commonality, I've been in a position to vote for things that, should it be in a different political environment, I wouldn't vote for.

In this case, the stakeholder may be attempting to use some form of reciprocity in order to foster whole-group collaboration, which Ostrom (1998) identifies as "a core norm used by many individuals in social dilemma situations" (p. 4). For these reasons, along with the fact that "consensus" is organically defined in many different ways, researchers must be particularly careful when equating a group that reaches consensus with a successful group.

RO2.4: Do outcomes reflect recommendations that reinforce the status quo or recommendations that vary greatly from the status quo?

As mentioned in the Chapter 6, the "loose" coalition structure seen in this collaborative process, which may also reflect the norm of consensus detailed above, could potentially lead to "lowest common denominator" solutions (Leach & Pelkey, 2001, p. 382). In other words, because participants know that the collaborative process requires them to reach a high degree of

consensus to produce policy outcomes, and because reaching consensus is socially valuable, groups may produce outcomes that reflect only the most basic points upon which they can agree instead of working to make major changes to relevant policy. To better understand this phenomenon, interviewees were asked whether they thought the outcomes that their Roundtable produced stuck closer to the status quo or varied greatly from the status quo. Their responses were coded under a spectrum of outcome types (OUTTYPE), including status quo, mixed, or innovative, and are listed in Table 9.

Some participants had particular difficulty answering this question because they did not recognize any "formal" outcomes that they could then classify as status quo or innovative. Others argued that the issue was not so black-and-white:

> I probably think some of the most novel ideas are status quo. And most other people would be shocked by some of them, but for me they're just the way I see the world. So… the idea of status quo has very little relevance to me. (YWG-03)

This statement was reinforced by the fact that some basins deemed certain strategies such as conservation as "innovative," while others felt that conservation was an important but fairly status quo strategy, as shown in Table 9.

Although most interviewees expressed the desire to develop innovative solutions, others saw maintaining some version of the "status quo" as necessary in certain cases. For example, a number of interviewees that reasserted the need for innovation also agued that traditional water projects that have already been approved but have been held up for some reason need to be brought to fruition, especially because "there's…. very little objection to those projects that were already on the books to be completed" (AR-01). Others felt that because their basin's main goal is to protect existing water uses, they must go about doing so in a fairly status quo manner as they have in the past. Related to this, because many interviewees recognized that many of the water

Table 9. Types of Innovative and Status Quo Outcomes Identified by Interviewees

Basin	Innovative Strategies/Projects/Attitudes	Status Quo Strategies/Projects/Attitudes
Arkansas	Groundwater and alluvial aquifer studies; re-assessing the value of agriculture; new supply work	Traditional projects that have already been deemed acceptable need to be brought to fruition
Colorado	Increased conservation; land use/water supply planning connections; sharing of agricultural water	People do not want to "rock the boat;" while people recognize they need a change, no one wants to be the person who changes
Gunnison	Risk management approaches	Fundamental water issues haven't changed in 100 years; nonconsumptive interests still have to be "tempered" depending on who they're talking to; desire to protect existing uses
Metro	Land use/water supply planning connections; alternative transfer methods for agricultural water; integrated supply projects, "no regrets" planning	Because the water supply is not likely to increase, people can't become too innovative; some innovative solutions like agricultural water transfers are not permanent and are thus difficult for municipal providers to rely on; conservation.
North Platte	Wetland studies; potential connections between increased storage and environmental uses	Projects aren't truly multi-purpose and some may not even be helping the state's overall water situation; the basin is limited because of legal structure that sends their excess water to Wyoming; headgate restoration projects
Rio Grande	People are generally more open to diverse solutions and projects; new ways to manage aquifer depletion; hydrologic studies that link things like fire and energy development to water; conservation easements	Protecting water from exportation by outside developers or municipalities continues to be an issue and remains so today
South Platte	More "multi-use" projects that provide benefits to all (e.g. restoring wetlands)	Dealing with water issues that have existed for decades with solutions that are still not agreed upon; projects are small and not tackling the major issues; fear of losing their water permanently (or losing money) in agriculture-to-municipal water transfers
Southwest	Various "out of the box" projects that make non-traditional connections with water (e.g. local food projects); conservation easements	Some restoration of diversion structures and other traditional water development projects; sometimes real change can only happen through costly legal processes
Yampa-White-Green	Wide range of projects funded, from consumptive to nonconsumptive and agriculture to energy	Continued lack of recognition of the importance of nonconsumptive attributes in the basin; political barriers limit innovation (e.g. legislation has not passed for efficient toilets); conservation

issues that they are dealing with today have been the same for decades, they felt that there was not much room to be innovative:

> This is an evolving process, but the fundamental issue has not changed in 100 years or more. I mean we're a lot more sophisticated now… but fundamentally the issue's been the same all over and that likely won't change. (GN-01)

Still others mentioned that while everyone seems to like the idea of doing innovative projects, no one is quite ready to be the innovator himself, and thus the issue is more political than anything:

> It's one of the things that's frustrating to a degree that, when this whole process started 8 years ago… one of the big things was "the status quo doesn't work anymore!" But everybody's reaction was, "yes, we need to make changes, but don't touch my status quo!" (CO-02)

Finally, one interviewee even made the direct connection between the limits imposed by consensus norms and the possibility of creating status quo solutions, adding that innovative solutions often require costly legal processes to implement:

> You know by consensus, things have to be win-win or at least nobody complains too much. So there isn't a drastic change, but to me the alternative to that if you're going to drastically change something, you go to court and you litigate and boy, that's costly. (SW-03)

Chapter 6 demonstrated that some interviewees argued that their Roundtables did not truly feel a need to prioritize their goals before the impetus of the BIPs and CWP. Here, interviewees from both sides of the divide similarly cite that before these processes began to "push" the Roundtables forward, there was little incentive to tackle larger, more controversial issues, such as the development of new supply, and more prerogative to continue discussing issues that were perhaps simpler, easier to debate, or more "status quo":

> [T]here really was just no pressure to really do something…there are a few of our members, including those that are representatives on the IBCC, who just said "we go to the IBCC, we talked about this stuff," but nobody says, "hey, let's talk about trans-basin diversions." (SP-01)

> So, the big question, the elephant in the room really, is moving a lot of water to the Front Range possibly. We have not talked about that. There's been, you know… I guess the IBCC has been talking about, but we haven't had someone directly come to us and say, "hey, would you be willing to give up a ton of water?" (YWG-01)

In conclusion, the outcomes and potential policy recommendations created through this process present a mix of innovative and status quo strategies; while a collaborative process may allow for fresh ideas to come to the table, or for existing ideas to be seen in new ways, it is also possible that participants will aim to achieve consensus over smaller and more predictable "status quo" outcomes instead of working through innovative, but often controversial solutions.

Discussion

Taken together, the answers to these questions better elucidate how outcomes are produced in a collaborative process (RO2). Yet, this information simultaneously broadens the initial scope of the question by defining a number of important, yet non-traditional and informal outcomes of collaborative processes, such as increasing the diversity of participants in water discussions. It also emphasizes the importance of providing the resources necessary for successful outcomes, such as funding, which can incentivize active participation in the process over time. In addition, collaborative processes face unique limitations to the types of outcomes they can produce—and often, the speed with which they can produce them—that may not be present in traditional, top-down management processes. Finally, consensus arose as an important driver in producing outcomes but also served as somewhat of a constraint on outcomes by potentially steering collaborative groups towards outcomes that they can easily agree upon and away from controversial matters with innovative solutions. A number of important themes arise here; a few will be discussed in more detail below.

Two related limits to successful outcomes that were widely mentioned by Roundtable members are underrepresentation of certain groups—specifically the nonconsumptive sector—and low participation by a number of other groups, despite the process being open and public. As shown in Table 7, some Roundtable members saw elected officials and state senators as "nonchalant" about becoming involved in the Roundtable process (SP-03). Another interviewee mentioned that although the membership of the Roundtables is defined in the enacting legislation,

> Anyone who wants to come and talk and offer ideas is welcome. Always. It's a public meeting and we get a few of those—mostly the people who want money…or a person who's running for office who wants to be able to claim credibility, knowing about water issues or attending the Roundtable meetings or something like that. (GN-01)

A third interviewee also mentioned the potential for unspecified groups to complain that they were wrongfully excluded from the process:

> What I'm waiting for is…to see whether you get a new group of stakeholders that come to the table who will claim that they've been disenfranchised in this process… there are a lot of folks who probably need to be involved with the Roundtable process who I don't think have really paid very much attention. (YWG-03)

Interestingly, as the due dates for the Basin Implementation Plans and a draft of Colorado's Water Plan neared (but after the above interviews were conducted), a group of Colorado senators lead by Democrat Gail Schwartz begun to claim the Colorado Legislature was indeed left out of the CWP planning process; consequently, the group attempted to pass SB 14-155, which "requires the Colorado legislature to approve a statewide water plan now under development by the Colorado Water Conservation Board and nine regional water groups" (Gardner-Smith, 2014), essentially undermining the "bottom up" Roundtable process. James Eklund, head of the CWCB, and Mike King, head of Colorado's Department of Natural Resources, both defended the Roundtables' work (Bartels, 2014), and by mid-February the senators sponsoring the bill had

backed down, requesting only "public hearings and reports to the Legislature" rather than legislative approval of the plan (Hanel, 2014).

This echoes the comments of Bidwell and Ryan (2006) and Leach (2006) cited in Chapter 2 in the discussion of diversity and representation in collaborative processes. These authors argue that a collaborative process must include all necessary stakeholders in order to be successful, which often requires going beyond "voluntary" or "inclusive" participation to active recruitment of all potentially interested parties. Although Roundtable participants acknowledged time and time again that the process was open and public, the participation of certain groups such as legislators was not actively sought, and thus they ended up feeling marginalized. Consequently, in order for a collaborative process to promulgate successful outcomes, it must be willing to go beyond simply "open" or "inclusive" participation to ensure, or at least attempt to ensure, the inclusion of all interested parties. However, acknowledging all interested parties and then providing incentives for them to participate can obviously be prohibitively difficult. Investigating how existing collaborative processes have accomplished this successfully is an important area for further research.

Many interviewees also highlighted institutional limits to producing successful outcomes, including what role the Roundtables played in the larger governance process and how they were able to exercise power in this role. Some stakeholders see the Roundtables' role as that of providing basin-scale information to the IBCC, who will then work with the CWCB to create legislation; other stakeholders expressed uncertainty about exactly what the IBCC's role is and how the "bottom-up" Roundtable process can mesh with that of a more "top-down" decision-making body. In their institutional analysis of collaborative processes, Ananda and Proctor (2013) argue that the "success of collaborative approaches largely depends on the institutional

configurations that support them" and that, specifically, "institutional reforms in water governance must focus on the type of power and authority and tasks assigned to each level of the nested decision hierarchy" (p. 105). In other words, better defining the role that each entity plays in a multi-level governance structure that contains at least one collaborative level can help to avoid future conflict between entities at differing levels. This, of course, depends upon whether "operational level" institutions have the appropriate capacity to handle new responsibilities, which the Ananda and Proctor (2013) argue "must already be in place in a given community" in order for collaborative processes to succeed (p. 105). Moreover, as mentioned in the literature review by various scholars, building relationships—not only among stakeholders in collaborative processes but among participants at varying levels of the multi-level process—often requires developing trust through long-term interactions, which in itself can serve as a limit to whether stakeholders who represent controversial viewpoints continue to participate in the process over time.

Finally, while consensus was recognized as an important driver in the Roundtable process that helped to foster policy-oriented learning and rapport building among stakeholders, it was also seen as a limiting factor to the types of outcomes that may arise from a collaborative policy process. As theorized in Chapter 4, processes that require a high level of consensus to move the policy process forward can potentially result in loose coalitions. While these coalitions may be able to capitalize on overlapping beliefs by using common strategies such as multi-purpose projects and reduce costs by sharing resources, they also may feel pressure to achieve consensus because of its social value rather than creating divergence over truly complex, controversial, and potentially crucial issues. Thus, relying completely on consensus-based decision-making may lead collaborative groups to avoid bigger issues in favor of the less important items that they can

agree on (Leach & Pelkey, 2001), or worse, suppress potential disagreement with the dominant view because those holding minority opinions are not empowered to share their opinions (Kenney, 2000).

In conclusion, while a variety of important formal and informal outcomes are produced in consensus-based collaborative processes, scholars must be careful to recognize potential constraints on the outcomes of these processes when evaluating their success. Practicing active recruitment of potentially interested parties, clearly defining roles of the entities at all levels of the process, and finding ways to encourage civil disagreement under consensus-norms are just a few of the conditions that can improve the potential for collaborative policy processes to produce successful outcomes.

Chapter 8: Conclusions

Well, you're talking to Colorado.
Water's our history, it's our current event, and it's our future. It's our economy.
And a lot of people get that and they appreciate it, you know. (CO-01)

This study sought to broadly investigate *the conditions under which collaborative governance processes can produce successful policy outcomes* by investigating a case of collaborative governance currently on-going in the State of Colorado: the IBCC/Roundtable process. Despite the fact that the topic of this process—water—is highly controversial and salient, as illustrated by the quote above, the process itself was designed to be conducive to collaboration among a diversity of stakeholders, making it a useful case to examine here. Specifically, two research objectives, each with a number of sub-questions, were investigated with respect to this process in order to provide insight into the broad theme mentioned above in an organized manner. The most important findings concerning these two objectives will be recounted here, particularly regarding how these findings relate to the theoretical developments proposed in Chapter 4 and the overarching research question of this study. The chapter will then conclude with a discussion of study limitations, as well as a number of hypotheses generated from this exploratory study that can be systematically tested in further research on the Roundtable process and similar collaborative governance processes.

RO1: To understand if and how stakeholder values are effectively reconciled in a collaborative process.

This objective was tackled by investigating coalition formation among stakeholders, as well as belief prioritization and alteration after participating in a collaborative process. Coalition formation of varying degrees was observed across Roundtables. Somewhat formal coalitions were observed among non-consumptive stakeholders, while more informal coalitions formed

between agriculture and one of the following groups: recreational stakeholders, environmental stakeholders, or local governments (Table 4). These informal coalitions were fairly loose and resulted mainly from groups recognizing their mutual gain or risk from a certain coordinated action (or lack of coordinated action) and potentially working together on a single project for a short period of time. More often, interviewees described collaborative activity—specifically the creation of projects that had multiple benefits or uses—that occurred among most or all participants within a Roundtable. Interviewees elaborated on the reasons behind this "whole-Roundtable" collaboration, which include learning, shared values, initial suspicion of one another, funding constraints, and external threats (Table 5). Finally, while interviewees had a particularly difficult time defining their exact beliefs, much less prioritizing them, it is important to acknowledge that up until this point in the process, any type of formal prioritization has not been required of most Roundtable members.

The fairly loose coalition structure observed in the study is consistent with predictions made in Chapter 4 about how subsystem structure may vary within a collaborative as opposed to an adversarial policy process (Figure 3). Roundtables members are faced with overlapping and often constrained resources, and many members use the strategy of supporting multi-benefit projects to make those resources go further. Importantly, some interest groups also have overlapping beliefs (e.g., high quality water supplies being of importance to both agriculturalists and environmentalists), which may encourage them to coalesce on certain policy objectives, or at least support one another's attainment of policy goals that underlie common objectives. This coordinated behavior, characterized simply by "some degree of working together to achieve similar policy objectives" (Sabatier & Weible, 2007, p. 196) is indicative of weak coalition formation. While Sabatier & Weible suggest that weak coalition formation may be a particularly

important tactic in situations where "organizational membership faces legal impediments that limit formalized alliances" (p. 197), which holds true to some extent with the Roundtables, weak coalition formation also appears to be an important path for diverse stakeholders working together in a situation that requires a high degree of consensus to produce outcomes.

RO2: To understand how outcomes are produced in collaborative policy processes.

This objective was broken down by first examining what outcomes actually look like in a collaborative process, and then investigating what factors limit these outcomes, how consensus shapes their production, and whether they reflect status quo or innovative ideas. As stated in the discussion section of Chapter 7, examining the wide variety of outcomes produced by the Roundtables inherently broadened the scope of this research objective to include an investigation of both formal and informal outcomes. Some of the most frequently described outcomes of the Roundtable process include producing policy tools or documents, funding projects, learning or increased teamwork among stakeholder groups, increased diversity in and/or new forums for water conversations, increased rapport among participants, and public education (Table 6).

Perhaps just as important as these outcomes are the reasons why the production of other types of outcomes is limited. Commonly stated constraints on outcome production include a number of biophysical, social, and political conditions such as inherently limited water supplies, restrictive laws or compacts, lack of appropriate information, underrepresentation of certain groups and low participation by others, permitting issues to actualize projects, and issues related to bureaucracy and political climate (Table 7). Importantly, limits directly related to the process, such as the length of time required to bring outcomes to fruition, are also salient for participants. Of specific importance are institutional concerns that may limit the production of successful

outcomes, including determining what role the Roundtables play in the larger governance process and their ability to exercise power in this role.

Consensus appeared as both an important driver and limit of outcomes. The vast majority of interviewees expressed that the Roundtable in which they participate typically comes to consensus on issues; however, consensus was defined in three main ways: as unanimous, majority rules, or simply general agreement on issues (Table 8). Working under the consensus norm seemed to encourage stakeholders to cooperate, learn from one another, and devise solutions that generally satisfied the membership of the Roundtable. However, because stakeholders know that consensus is necessary to produce outcomes, they may refrain from suggesting more innovative, yet controversial ideas, leading to a proliferation of solutions that cater more to the status quo than to new ideas that truly tackle Colorado's biggest water issues (Table 9). Even worse, Roundtable members may consent to things that they fundamentally disagreed with because it is socially valuable to create consensus in the Roundtable. These results further provoke the ideas presented in Chapter 4, namely that processes that are highly depending on reaching consensus may result in the formation of looser coalitions; perhaps the idea that processes highly dependent on consensus may also produce fewer innovative solutions, especially in the face of a large number of constraints, could be added to the potential theoretical developments proposed by this study.

Under what conditions do collaborative governance processes produce successful policy outcomes?

Although this study focused specifically on coalition formation and outcome production in one collaborative process in Colorado, the results speak broadly to the overarching research question of this study, recounted above. In Chapter 2, Table 1 described a number of factors

perceived as important for success in collaborative governance processes that were drawn from the existing literature on this topic. Below, a revised version of Table 1 (here, Table 10) is presented with the first three factors from the original table—funding/resources, leadership, and trust—removed in order to allow for a focus on the remainder of the variables that arose as particularly important for success in Colorado's Roundtable process: commitment, goals/institutional design, and diverse composition and participation of stakeholders. Each of these factors is presented with a description from the original version of Table 1 along with a brief summary of the role that this factor played in the success of the Roundtable process. Understanding the specific importance of these factors in the Roundtable process can provide insight into why they may also be key drivers of success in other collaborative processes.

Importantly, the focus on the three key factors in the table is not to say that the other variables that were removed from the original table lack importance in this process or in collaborative processes in general. However, they simply were not highlighted as crucial motivators success in this particular process for a variety of reasons. For example, issues of *funding*, particularly through Water Supply Reserve Account Grant program, were major incentive for stakeholder participation; however, restricted funding seemed to actually foster more collaboration among stakeholders in certain basins because they saw an additional gain from working together through the creation of multi-use projects compared to that which they could have done on their own. Moreover, some participants recognized *leadership* within a Roundtable as a very important factor in the Roundtable's ability to produce successful outcomes, but other basins did not mention the role of any specific leaders or their influence on the process. Additionally, leadership at the inter-basin level was described with mixed feelings

Table 10. Factors Perceived as Important for Success in Colorado's Roundtable Process

Factor	Description of Factor	Role in Colorado's Roundtable process
Commitment	• Participants must be committed to the collaborative process rather than to their own individual interests • Commitment can be built through a sense of shared ownership in the process and a recognition of interdependence	• Stakeholders who generally received less support may have failed to commit to the Roundtable process • Because of the process's length, stakeholders may have become "worn out" over time and thus became less committed • Thus, committed parties more directly influenced outcomes
Goals/Institutional Design	• Successful partnerships focus on a number of attainable, clearly defined goals • Achieving goals creates an incentive to participate, especially when this achievement is dependent on many members • Understanding how the process is nested within current institutional structures is essential for realizing goals	• Many Roundtable members saw the ability to achieve their own "goals," mostly through the funding of projects, as a sign of a successful process • However, most Roundtable participants explained that a lack of clear rules governing their role and authority within the larger process served as a limit to producing successful outcomes
Diverse Composition and Participation	• Through the process of dealing with their own internal differences, diverse groups create collective goals that serve a broader number of interests • Diverse participation requires active recruiting of relevant interests—it does not happen naturally or by having membership simply be "open" to anyone	• Roundtable members from all stakeholder groups recognized that in most basins, some stakeholders were clearly underrepresented • This served as a limit to producing truly collaborative outcomes that satisfied all participants • Roundtable members recognized that although the process is public, some groups may need more direct encouragement to participate

and even confusion by many interviewees. Third, gauging the importance of *trust* in creating a successful Roundtable was particularly difficult, especially because many Roundtable participants had not participated since the initiation of the process and had drastically different degrees of interpersonal relationships and trust with their fellow Roundtable members. Overall, participants lauded the development of a common understanding and language among stakeholders as a more important factor in Roundtable success rather than trust. Thus, a deeper investigation into the key variables in the table is crucial, but other important potential drivers of success must be kept in mind in order to better address the nuances of specific collaborative processes.

Study Limitations

While the results from this study can be useful in describing how stakeholders interact, reconcile their values, and product outcomes in a collaborative process, it is important to recognize that the data analyzed here are inherently based on participants' perceptions of the process instead of on a quantifiable variable that could be measured to capture some of these ideas, such as "number of projects funded by the Roundtable," or "number of joint policy statements produced by stakeholders." While a measure such as this would have allowed for the creation of an index of collaboration by which each Roundtable could have been ranked, or a data set that could have been analyzed statistically for correlations among variables, it also would have missed much of the depth and nuance captured in this study through conversations with individual Roundtable participants that explored the processes underlying many of these important outcomes.

Related to this limitation is the important fact that not all participants in the Roundtable process were interviewed in this study, as there are over 300 people who participate in the

process fairly regularly. Despite trying to interview a variety of stakeholders from different geographical regions and interests groups, one stakeholder's view is of course not representative of the entire group or region that he or she represents (though interview questions were designed to ask the interviewee more broadly about his or her stakeholder group's goals and beliefs, for example, rather than those that he or she held personally). Thus, it would be helpful to produce a survey instrument that could quantitatively test some of the most relevant findings from this study on a larger and more representative sample of Roundtable participants. Additionally, other people who were not directly involved in the Roundtable process but who work on issues that may overlap with the Roundtables' work, such as land use planners, legislators, and even vocal opponents of the process, could also be surveyed to gain additional perspectives on the process's success and importance in overall statewide water planning. It would also be interesting to survey participants in other collaborative processes within the state of Colorado in order to better understand if ideas about coalition formation and outcome production in a collaborative watershed governance process are transferrable to other collaborative processes within a similar geographic and political context. Similarly, it would be interesting to see if these findings are confirmed by participants in collaborative watershed governance processes in other states with different geographical and political contexts.

Finally, it is important to recognize the potential biases that come along with using interview methods. Aside from the obvious issues of the interviewer potentially influencing the interviewee's responses through leading questions or even simply by being present, interviewees in this case may have spoken more positively about their participation in the Roundtable process than they would have in an anonymous survey because they were being interviewed on exactly that topic. They may have emphasized, and perhaps exaggerated, the importance of their role in

the process or the significance of the process to Colorado's broader water management regime simply because they assumed the interviewer was interested in these factors due to the selected research topic. However, many interviewees were quick to recognize the faults of the Roundtable process, so this issue may have been more limited than one might expect. Using a survey instrument to complement the interviews conducted for this research would help to reduce these potential sources of bias in the future.

Hypotheses for Future Testing

In order to address some of the above limitations and expand this study in other fruitful directions in order to more thoroughly address the major research question, a number of testable hypotheses generated from this research are posed below. These hypotheses are written with the specific case of the Roundtables in mind but could easily be adapted for testing in similar collaborative governance processes. Beneath each hypothesis is a brief explanation of the drivers underlying the generation of the hypothesis, as well as any existing evidence to support or disprove the hypothesis. In addition, Figure 4 from Chapter 4 is reproduced below for reference, as it provides another way to visualize how the suggested hypotheses interact with one another within the system.

H1: If a low degree of collaboration is required between Roundtables in the process of making statewide decisions during the formation of Colorado's Water Plan, then a more traditional policy subsystem structure will develop during this stage of the policy process.

Directly related to the ideas proposed in Chapter 4 about subsystem structure, nested governance processes, and inter-Roundtable collaboration, this hypothesis alludes to a potential future situation in which decisions about statewide water planning are not made based on the norms of collaboration or consensus developed among stakeholders who participated in the Roundtable process. If these norms are not adopted, a more traditional subsystem structure with

adversarial coalitions may arise (as depicted in the Level 2 circle of in Figure 4) compared to a more collaborative subsystem structure (as depicted in Level 1).

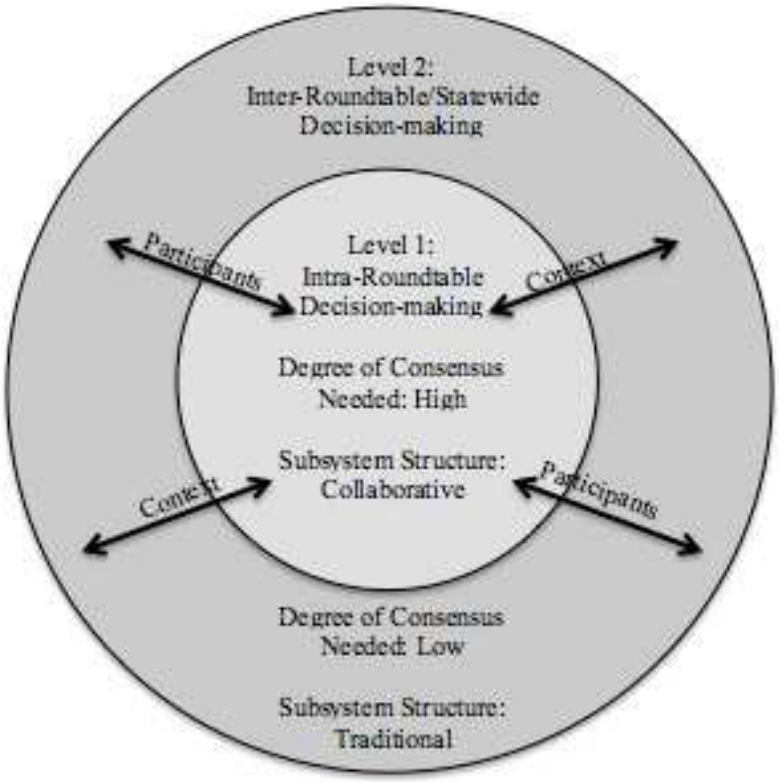

Figure 4 (reproduced): An example of how the Roundtable process could potentially be nested within a more traditional, top-down policy process that requires a low degree of consensus and consequently produces a different subsystem structure, despite sharing context and some participants.

H1a. If policy subsystem structures vary greatly among levels of governance, decision-making processes will involve more conflict and will create outcomes that are less satisfying to a wider variety of stakeholders.

H1b. If policy subsystem structures are fairly similar among levels of governance, decision-making processes will create outcomes that satisfy a wider variety of stakeholders.

Related to H1, H1a and H1b predict that stakeholders' satisfaction with the outcomes of a decision-making process may be related, in part, to the way various subsystems are structured and relate to one another within a larger governance process. In other words, the correspondence

(or lack thereof) in institutional structures and norms between Level 1 and Level 2 in Figure 4 can influence the success of the broader collaborative process once it is embedded in a larger institutional structure. For example, in a situation where different norms are adopted at Levels 1 and 2 (as depicted in Figure 4), it is likely that Roundtable participants, who developed much of the data and analysis for Colorado's Water Plan and other potentially influential water management documents through a collaborative process, could be dissatisfied with the cooptation of this information by policymakers that use it to implement "top-down" governance regimes at the state level. The fear of this situation was alluded to by a number of interviewees who expressed hesitation with the existing "top-down" influence of the state on the supposedly "bottom-up" Roundtable process (see RO2.2). Conversely, stakeholders will likely be more satisfied with a process that adopts similar norms at all levels (i.e. adopting those norms associated with collaboration at Level 2 to make higher-level management decisions).

H2: If Roundtables have more external connections to available resources, then they will be less likely to fund truly multi-purpose projects that require a high degree of collaboration.

Many scholars echo the idea that adequate funding and resources are necessary for success in a collaborative process (see Leach & Pelkey, 2001; Bidwell & Ryan, 2006; Sabatier & Weible, 2007). Based on this premise, it may be logical to assume that the more participants in a collaborative process who have connections to external groups from which they can obtain resources, the more smoothly collaboration will function because the pressure of disbursing limited resources is essentially reduced. However, initial findings from this study suggest that when actors are required to share a specific amount of resources among themselves, they may devise more creative ways to work together and make the resource go further, essentially improving true collaboration among stakeholders. For example, in Table 5, which concerns limits to producing outcomes, a number of stakeholders mention that some groups were so

constrained by resources that they would not have achieved their goals if they had not worked collaboratively with other stakeholder groups. Further investigating the dynamic interaction between resource availability and successful collaboration is thus an important area for further study.

H3: Collaborative subsystems that are initiated with collaborative norms, rather than those that arise from "hurting stalemate" situations in adversarial processes, may be particularly prone to very loose coalition structures and the "traps" of creating outcomes that appear more "status quo."

This hypothesis is posed for investigation in a situation in which the Roundtable process could be compared to another similar collaborative governance process that arose from a previously adversarial subsystem (e.g. those typically discussed within the context of the ACF). While adversarial groups may begin to collaborate after a "hurting stalemate," it is possible that they will maintain more formal coalition structures because they have experienced and acted within these structures for a number of years, or perhaps even decades. Moreover, because actors in a previously adversarial subsystem began to collaborate as a result of a specific "hurting stalemate" in which no other viable options were perceived, they make be likely to produce outcomes that vary more drastically from the status quo than groups such as the Roundtables who have not faced one particular "hurting stalemate" during their tenure.

Summary

Investigating these hypotheses, in conjunction with a number of other areas important for further study mentioned throughout this paper, can help to further define the vast and nuanced conditions under which collaborative governance processes can produce successful policy outcomes. This study examined one collaborative governance process in the state of Colorado in order to provide insight into two areas of this broad theme: if and how stakeholders form

coalitions within collaborative governance processes (RO1), and how outcomes are produced in collaborative governance processes (RO2). It also helped to provide an initial understanding of the factors that allow collaborative governance processes to produce successful outcomes, such as commitment from stakeholders, clear goals and institutional design, and diversity of participants. By using a number of important ACF variables to guide this study, the results also provide an analysis of where collaborative policy subsystems and the negotiated agreements they produce fit into the ACF at large, a framework that had been traditionally employed in the analysis of more adversarial subsystems.

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Appendix A. Coding Structure

Coding Group	Corresponding Objective	Super Codes	Corresponding Sub-Codes
1. Coalition Formation	1	COALIT	NC, AGREC, AGENV, MUNI,
		RESOURCES	OTHER CO
		STRATEGY	
		CNTENTION	
2. Goals and Beliefs	1	BELIEF	SELF, OTHER, WHOLE
		GOAL	AGGOAL, NCGOAL,
		INTGRTN	MUNIGOAL
		VBGCHNG	EASY, PARTL, DIFFCLT
3. Consensus	2	CONSEN	DISCUSS, EXPERT, VOTE, PASS
		CONDEF	UNAN, MAJOR, GENAGG, ILLDEF
4. Outcomes	2	OUTCOME	WSRAG, POLICY, LEARN, TEAMWK
5. Outcome Limits	2	OUTLIMIT	WATER, POLITICS, RIGHTS, INFO, UEREP, REDTAPE, LOWPARTIC
6. Outcome Types	2	OUTTYPE	STATQUO, INNOVTV, MIXED
7. Power with a Multilevel Governance Process	2	POWER	POWYES, POWNO
		MULTILVL	LSF, IBCC
8. Other	1 & 2	PROGRAMSACTIVITIES	
		CLMCHNG	
		PROCESS	COMMITT,
		QUOTES	REASON