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Animas-La Plata Project Stakeholder Narratives: A Case Study Using Kingdon's Three Streams Theory

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Abstract

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by

Denise Rue-Pastin

MS, University of Denver, 1994

BS, University of Wisconsin-Stout, 1983

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Population growth, coupled with changing weather patterns, is straining water supplies, especially in the American Southwest. A multitude of tools, including additional storage, will be needed to meet water demand and supply gaps. The Animas-La Plata Project, a reservoir in southwest Colorado, provides a case study of how groups worked for nearly 70 years to solve a water problem: insufficient irrigation for agriculture. This qualitative case study addressed a lack of first-person narratives from those most involved. Its purpose was to gather stakeholder narratives and analyze them using Kingdon's three streams theory to address the extent to which the problem, policy, and political streams converged to open policy windows that resulted in a built facility. Purposeful sampling identified 11 organizational stakeholders with the highest seniority and longest association with the project. Transcribed data from structured interview questions were inductively coded and thematically analyzed. Key findings include identification of a major federal policy change in the late 1970s to 1980s that excluded escalated benefits of water projects. Within this same timeframe, necessary elements were present to open a policy window, the Colorado Ute Indian Water Rights Settlement, which resulted in project construction. If strategists can learn to predict the opening of policy windows—when the problem, policy, and political streams join—water resource planning and policy can be improved. Retrospective narrative analysis is a promising ex post audit and evaluation tool that policy analysts can use to assess program performance and lessons learned. Social change implications of the study are that its findings on the need for positive collaboration may prove valuable to those in management who seek to address water scarcity issues.

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Dedication

Without sounding trite, I dedicate this dissertation to water and those dealing with this extremely difficult conundrum. At this juncture, I continue to ponder why all are not rallying around this and so many other environmental challenges. With a 180° turn, I also dedicate this dissertation, with acknowledgements, to colleagues, friends, and family who rode this PhD wave with me. Without your continued support, I might not have made it.

Gratitude goes to colleagues and friends for not dumping me (as one did) for not having enough availability or time to play. Avalon, I apologize for our lost Scrabble™ time. Carol, I am sorry for missing Friday afternoon happy hours. Susan, your words over lunch in March 2012—"but you're not a beginning researcher"—really helped to build my confidence. Thank you to my little sustainability group—SOS—for hanging in there with me! Doug, your reminder that "nobody likes a quitter" was a motivator to continue after so many times of being knocked down and not wanting to get back up.

Heartfelt thanks to my supportive family. Thank you, Mom (the one who cried when my proposal was finally accepted), for being my most dedicated cheerleader. Gratitude to Dad, Em, and Sherry for giving me the space I needed, even if it meant reduced phone calls. To my three daughters—Desiree, Demitrea, and Delila—thank you for your support. I know it was difficult not having your mom as available as you might have liked but someday, when you are pursuing your dreams, I hope you will understand. Finally, eternal gratitude goes to my husband, Don. We went through some of the most difficult periods in our relationship during this process but through good times and bad we stuck to our promises (and handshake). Words cannot convey how thankful I am that we endured. I love you all very much and am very fortunate to have you in my life!

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Thank you to all of my interviewees. I appreciate your valuable input and time. While this has been a long process for me, it pales against the time you have all dedicated to the A-LP Project. Whether you were Project opponents or supporters, for many of you this was not a job but a civic undertaking, and for that my hat is off to you. It was a pleasure to meet and get to know you, and I sincerely hope that this research provides you with as much information and insight as it did me. I am honored to have been involved as but a small keeper of the history and stories of such an enduring, exemplary, and long Project.

Thank you to my A-LP Project content expert reviewers, Rick Ehat, Steve Harris, and Bruce Whitehead. In addition to my dissertation committee, reviewers of the entire document to whom I am indebted include Lynn Herkenhoff, Laura Spann, and Jeff Zuckerman, as well as the editors at Walden's Form and Style and Writing Center.

I also owe eternal gratitude to my dissertation committee for their valuable guidance, knowledge, *patience*, and time. Special thanks go to Dr. Bethe Hagens, my committee chair, for not giving up on me over the years. Also, thank you Dr. Frances Goldman for patiently waiting in the wings but interjecting at just the right times while I worked my way through the process. In addition, thank you Dr. Tanya Settles and Dr. Kristie Roberts, my University Research Reviewers, as well as Dr. Leilani Endicott, Director of Research Ethics and Compliance and also my Research Participant Advocate.

This dissertation has come a long way since it was first submitted. Similar to me, it has evolved and matured into a document I can truly say I am proud of. This would not have been possible without all of you, and for that I am humbled and grateful.

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Chapter 1: Introduction to the Study

Introduction

Societies are facing serious public policy issues related to what the United Nations (UN) has termed "the human right to water" (UN, 2010, para. 1). Worldwide, an increased population is exceeding available water supplies, thereby causing water scarcity and conflicts (Cech, 2010; Christian-Smith et al., 2012; UN, 2012b; Vaux, 2011). The global population is over 7 billion people (U.S. Census Bureau, 2013b) and is expected to increase by 3 billion by 2050 (Vaux, 2011). Already, 11% of the global population, or 783 million people, are without access to an improved source of drinking water (UN, 2012a), and 1.3 billion people live in water-scarce regions (Gerten et al., 2013). Moreover, climate change is projected to expose 668 million more people worldwide to new or aggravated water scarcity over the coming decades (Gerten et al., 2013).

In the United States, where clean water supplies have been considered more abundant (Christian-Smith et al., 2012) and sanitized than in other parts of the world, population growth is straining the resource. The U.S. Environmental Protection Agency (EPA) projected a 42% increase in population between 2010 and 2050, from 310 million to 439 million people (U.S. EPA, 2013). This growth, coupled with changing weather patterns such as drought, has led to increased water crises, scarcities, and shortages (Alsace, 2003; Barlow, 2007; Christian-Smith, et al., 2012; Chronicles Group, 2013; Dosi & Easter, 2000; Gerlak, 2005; Gleick, 1993; Glennon, 2002, 2009; Ingram & Malamud-Roam, 2013; Jorns, 2007; Maxwell, 2011; McDonald & Jehl, 2003; Midkiff, 2007;

Pearce, 2006; Reisner, 1986; Reisner & Bates, 1990; Rogers, 1996; Simon, 1998; Solomon, 2010; U.S. Department of the Interior, 2003; Waterman, 2010). Several states, particularly California, reportedly have been running out of water (Hess & Frohlich, 2014). Rippey, as cited in Hess and Frohlich (2014), argued, "At [the current] usage rate, California has less than two years of water remaining" (para. 7). These are understatedly serious predictions.

Despite these forecasts, the United States has no formal national water policy, nor is there an indication that the country will adopt one (Galloway, 2011; Gleick, 2005, p. 95). Schad (1998) pointed out the irony that the United States promotes national water policies for other countries "yet fails to heed its own advice in this important area . . . federal water policy lurches from crisis to crisis" (p. 53). With reduced federal funds, there is a national resurgence of interest at the local and state levels in developing water policies and plans. The primary reason for the planning spree is fear of inadequate water supplies and scarcity (Walton, 2014b).

Against this national backdrop, the American Southwest is one region that will experience some of the most significant water scarcities (Dziegielewski & Kiefer, 2006; Gerten et al., 2013; Gleick, 1993; National Climate Assessment, 2014) and the resulting difficult policy decisions. The California example discussed above is a case in point. Researchers have indicated that Southwest megadroughts, defined as those lasting a decade or longer, pose serious threats to water resources (Ault, Cole, Overpeck, Pederson, & Meko, 2014; Schiermeier, 2011) and that in the coming century, the risk of a megadrought is at least 80% or higher (Ault et al., 2014, para. 1). Ault (2014) referred to

megadroughts as “a threat to civilization" (personal communication, September 4, 2014). These severe droughts also contribute to “shocking” groundwater losses (“‘Shocking,’” 2014) because subsurface waters that are not recharged are, combined with groundwater overpumping, adding to the strain on water supplies. California, the only western state that did not monitor or regulate groundwater use until 2015, provides another example. Researchers have found that excessive subsurface pumping in the state not only is causing land subsidence or sinking (Sneed, Brandt, & Solt, 2013) but also may be linked to increased earthquake activity (Amos et al., 2014). Additional adverse effects from groundwater pumping include environmental degradation, increased energy costs, less groundwater in storage, saltwater intrusion, stream flow depletions, and water quality degradation (California Water Foundation, 2014).

Further indicators of water shortages in the Southwest can be seen on the Colorado River. The river is legally administered under the 1922 Colorado River Compact. The compact allocates the river’s water among the seven states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming (U.S. Bureau of Reclamation [U.S. BOR], 1922). At the time the compact was signed, the Colorado River and its tributaries delivered an average of 16.4 million acre feet (AF; U.S. BOR, 2012b) of water annually to 5.5 million people (U.S. Census Bureau, 1996). That average is down to 13 million AF (U.S. BOR, 2012d) for a population of approximately 40 million people (U.S. BOR, 2012b). Restated, the Colorado River is now delivering less water than was available in 1922 to 35 million more people. Compounding the water demand and exceeded supply issue is the projection that population in the Colorado River Basin

will increase to between 50 and 77 million by 2060 (U.S. BOR, 2012b, 2012c). This population growth is projected to increase demands for water on the river by between 18 and 20 million AF (U.S. BOR, 2012b, 2012d).

In response to increased population and the reduced flows resulting from drought and decreased snowpack (National Climate Assessment, 2014), water managers in the Colorado River Basin have spent years and more than $7 million dollars (Connor, 2013) to forecast water demand and supply scenarios. As part of this effort, the U.S. BOR and the seven Colorado River Basin states funded a 1,500 page *Colorado River Basin Water Supply and Demand Study* (Connor, 2013; U.S. BOR, 2012b, 2012c, 2012d). Study researchers found that annual water use has exceeded supply for the past 10 years and that the gap is expected to continue. This overuse is made possible due to large water storage projects, such as Lake Mead and Lake Powell, as well as overpumping groundwater sources. Satellite data from 2004 to 2013 indicated that the Colorado River Basin region had lost 53 million AF of groundwater. This decrease in groundwater reserves is nearly double the volume of water in Lake Mead (“‘Shocking,’” 2014, para. 4-5) and further adds to the gap between supply and demand. By 2060, this gap is expected to be between 3.2 and 8 million AF per year (U.S. BOR, 2012b).

In addition, under the study’s climate change scenario, Colorado River flows are forecasted to fall by 8-9% (U.S. BOR, 2012b, 2012d). Declines in flows could be less but could also be substantially more. Various scientific studies from 2008 to 2013 have estimated declines of future Colorado River flows ranging from 6-45% by 2050 (Vano et al., 2014). Conclusions in the BOR study indicated that while Colorado River flows will

remain uncertain, especially in light of climate change, overall simulations suggest substantial reductions by the end of the century, due to a combination of less runoff and precipitation (p. 29). Taken together, these simulations indicate increased drought conditions; in fact, researchers have indicated drought to be the new norm in the West (Dai, 2012; Heinberg & Lerch, 2010; National Center for Atmospheric Research, 2007). In addition to impacts on water users, drought and reduced stream flows are predicted to reduce Western hydropower output by approximately 12% (Connor, 2013).

In the headwaters state of the Colorado River, Governor Hickenlooper (2013) indicated that Colorado is facing a water crisis. The state's population is expected to nearly double by 2050 from a 2012 level of 5.2 million people (U.S. Census Bureau, 2013a) to between 8.6 and 10 million (Colorado Water Conservation Board [CWCB], 2011). In an effort to meet projected water demand and supply gaps of between 600,000 and 1 million AF (CWCB, 2004b, 2007) associated with this growth, the State of Colorado has been aggressively working on planning strategies since 2004 (CWCB, 2004b), and in 2013 Governor Hickenlooper issued an executive order to develop a first-ever *State Water Plan* (State of Colorado, 2013). A portfolio of management approaches and tools was considered in the plan to meet the water demand and supply gap, including agriculture dry up and transfers, conservation, new supply storage, and reuse (CWCB, 2004b, 2007, 2011).

Related to supply storage, the Animas-La Plata (A-LP) Project (hereafter often referred to as *the Project*) provides a useful case study for water planning and policy purposes. *The A-LP Project* refers to the entire 50-year (approximately 1956 to 2011)

process involved in planning and constructing a U.S. BOR reservoir (Lake Nighthorse) just outside of Durango, in the southwest corner of Colorado. The current A-LP Project case study research used narratives from interviews with representative stakeholders to identify key factors involved to open policy windows to mobilize individuals and organizations around the common pool resource of water. For this study, I looked across the individual narratives for streams that formed into policy windows. This information has positive social change implications, as the study findings may contribute to future water planning efforts and policy formation.

To these ends, background information is provided in this chapter in the form of a summary of A-LP Project-related literature. This chapter also includes the problem statement, purpose of the study, and research questions. Information on the study's theoretical framework is provided, as is a discussion of the nature of the study, definitions, assumptions, scope and delimitations, and limitations. The conclusion of Chapter 1 includes a discussion of the significance of the study and a summary.

Background

Building Lake Nighthorse was a U.S. BOR project that officially began in 1956 when Congress authorized a feasibility study. Originally, it was designed as a large, 198,200 AF (U.S. BOR, 1979) water storage project that would deliver agricultural irrigation water to the dry-side of La Plata County in southwest Colorado. In the earlier BOR years, irrigation projects were referred to as *reclamation projects* because the idea was that irrigation would "reclaim" arid lands (U.S. BOR, 2000, p. 3). Over the years, however, large irrigation projects such as the A-LP Project became increasingly

scrutinized for conservation and environmental reasons (pp. 7-8). It was due to these issues and associated controversies and debates that in the ensuing decades Lake Nighthorse was dramatically downsized to 111,500 AF, the irrigation component was entirely removed, and the Project ultimately became a tribal water rights settlement. The A-LP Project involved more than a half century of work among a host of federal, local, state, and tribal groups, as well as Project opponents. Major stakeholder organizations included the Animas-La Plata Water Conservancy District, Colorado Water Conservation Board, Colorado Water Resources and Power Development Authority, Navajo Nation, San Juan Water Commission, Southern Ute Indian Tribe, Southwestern Water Conservation District, U.S. Bureau of Reclamation, Ute Mountain Indian Tribe, and numerous Project opponents. Additional information on the history and complexities of the A-LP Project will be covered in Chapter 2.

Over the course of this decades-long Project, non-peer-reviewed information abounded in the form of newspaper articles, internal organizational documents, and press releases. For purposes of this study, many of these were reviewed but not all were incorporated. In addition, a multitude of database hits surfaced with keywords including the *A-LP Project* and *Lake Nighthorse* but few provided the stakeholder narratives that I was looking for. As mentioned previously, the narratives from these interviews were intended to help identify what key factors or policy windows are involved to mobilize individuals and organizations around the common pool resource of water. In general, the database and Internet search results fell into the categories of archaeology/artifacts, aquatic-related, historical, legal, tribal, and political. The first is not surprising, given the

huge archeological protection dimensions of the A-LP Project. Given the emphasis on aquatic-related topics such as endangered fish species and wetlands mitigation and restoration, this emerged as a major theme. In addition, given the 50-year length of the Project, much historical information surfaced, as did legal and tribal topic coverage.

In the more refined peer-reviewed database searches, many journal articles surfaced, and some yielded useful background information for this research (Ellison, 1998, 2009; Ellison & Newmark, 2010; Pollack & McElroy, 2001) but again, few stakeholder narratives. In the dissertation and theses database searches, four such documents provided useful background information (Allen, 1997; Eidem, 2012; Gosnell, 2000; Mann, 1988), and two yielded some stakeholder narratives. These narratives, however, were not examined from a public or water policy development perspective. These gaps in the A-LP Project literature related to stakeholder narratives and policy windows provide evidence of the need for this study.

Problem Statement

Globally, and in the United States, particularly the arid Southwest, water supplies are inadequately meeting growing population demands for the resource. A multitude of methods will be required to meet this gap between supply and demand, including new storage projects. The problem that this study addressed is that although extensive qualitative data have been accumulating related to the A-LP Project, to date, there has been no first-person narratives from the most influential players involved in this storage project. This research collected A-LP Project narratives from living stakeholders to see if and how they apply to the validity of Kingdon's (1995) three streams policy development

and enactment theory. The stakeholder narratives from this A-LP Project case study were expected to provide insight for future planning and policy efforts by identifying what key factors were involved to open policy windows in mobilizing individuals and organizations around the common pool resource of water. In this regard, there was a need for narrative data to understand how policy windows open that allow action to meet water supply needs.

As discussed in the introduction, there is consensus among researchers and policy makers that research related to water issues is current, relevant, and significant. The UN (2012b) *World Water Development Report* concluded,

> It [freshwater] faces rising challenges across the world—from urbanization and overconsumption, from underinvestment and lack of capacity, from poor management and waste, from the demands of agriculture, energy and food production. Freshwater is not being used sustainably according to needs and demands. Accurate information remains disparate, and management is fragmented. In this context, the future is increasingly uncertain, and risks are set to deepen. If we fail today to make water an instrument of peace, it might become tomorrow a major source of conflict. (p. vi)

Conflicts over water, including terrorism and war, are already occurring across the globe (National Intelligence Council, 2012; Pacific Institute, 2013). Even in North America, tension is brewing between Canada and the United States. The ambassador from Canada to the United States has stated, "Canada must prepare for diplomatic water wars with the US, as demand on both sides of the border grows for this vital but

ultimately limited resource" (Coer, as quoted in Marsden, 2014, para. 1). In addition to conflicts, water quality and quantity problems from climate change pose serious threats to human health. Among others, these include infectious and waterborne diseases such as West Nile virus and gastrointestinal problems. Additional adverse consequences include food insecurity, heat-related health problems, mental health troubles, and respiratory issues (Patz, Frumkin, Holloway, Vimont, & Haines, 2014).

Moreover, the 2007 Intergovernmental Panel on Climate Change (IPCC) report concluded that changes in the hydrologic cycle associated with precipitation and increased temperatures will be among the most significant as a result of human-caused increases in carbon dioxide (CO_2) emissions (IPCC, 2007). More recently the IPCC released an updated summary report for policymakers that indicated that the concentration of CO_2 and other greenhouse gases had increased to unprecedented levels "in at least the last 800,000 years" and that these levels had increased by 40% since preindustrial times (Alexander et al., 2013, p. 7). These researchers wrote,

> Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and oceans have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased. (p. 3)

These international findings are consistent with research in the United States (Christian-Smith et al., 2012; Hanson, 2009; Heinberg & Lerch, 2010). Saunders (2013) indicated that under low CO_2 emission level projections, average temperatures in the interior West would be 1 to 3 degrees Fahrenheit higher. With high emission levels,

temperatures could be 7 to 9 degrees hotter. Traynham, Palmer, and Polebitski (2011) reported that changes in temperatures and precipitation will affect the timing of spring snowmelt and resulting peak stream flow, as well as the portion of precipitation falling as rain and snow. Additionally, the U.S. Global Change Research Act of 1990 requires that a National Climate Assessment be presented to the president and Congress every 4 years. The purpose of the assessment is to provide a comprehensive update of climate science and climate change impacts (U.S. Global Change Research Information Office, 2004). An updated assessment was released in 2014, which indicated that "longer-term droughts are expected to intensify in large areas of the Southwest" (National Climate Assessment, 2014, p. 42). In addition, in many regions, including the Southwest, groundwater and surface water supplies are already being affected, and it is projected that both will be further reduced due to drought as well as less snowpack, spring runoff, and groundwater recharge. This will increase the likelihood of water shortages (p. 42).

Adding to the problems of increased drought and reduced water availability are previously discussed increases in demand due to population growth. The U.S. BOR's Western Water Information Network compiled data from a 2002 region and area office survey to determine prime indicators of Western water conflict as perceived by their water managers. Those managers listed population growth as the number one predictor of water conflict, followed by Endangered Species Act (ESA) issues and tribal water rights (U.S. BOR, 2008b). Though the survey may be somewhat dated, conversations with the lead author indicated that the prime indicators not only are the same but also have likely intensified (D. Clark, personal communication, November 1, 2012).

Based on the preceding, as well as information provided in the introduction, there is evidence that research related to water resource management and related issues are current, relevant, and significant. The narratives I collected fill a gap in the literature related to whether and how policy streams intermingled over a more than 50-year period to mobilize multiagency deliberations around the common pool resource of water, in this case the A-LP Project.

Purpose of the Study

Although scholars and critics (Ellison, 1998, 2009; Ellison & Newmark, 2010; Gosnell, 2000) have explored the A-LP Project in the literature, the examination has been narrowly focused and single dimensional related to administrative, archaeological, aquatic, economic, historic, legal, procedural, and tribal processes. The purpose of this research was to gather stakeholder narratives and analyze them using Kingdon's (1995) policy streams theory to determine whether the opening and closing of policy windows contributed to making the A-LP Project a reality. Interviewed stakeholders consisted of representatives from the major organizations involved with the Project. Those organizations are the Animas-La Plata Water Conservancy District, Colorado Water Conservation Board, Colorado Water Resources and Power Development Authority, Navajo Nation, San Juan Water Commission, Southern Ute Indian Tribe, Southwestern Water Conservation District, U.S. Bureau of Reclamation, Ute Mountain Indian Tribe, as well as Project opponents. The narratives, derived from interviews with representatives from these organizations, identified key factors involved in opening policy windows that mobilized individuals and organizations around water issues. The goal of this qualitative

research was to examine the potential for the A-LP Project to help meet future water policy and planning needs by describing, exploring, and understanding whether policy windows opened to mobilize action around the common pool resource of water.

Research Question

The central research question was the following: Did policy streams (Kingdon, 1995) diverge, emerge, and join over the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water? To answer this, I used narratives from interviews with stakeholders representing the major organizations involved in the Project. Appendix A provides a complete list of the interview questions.

Theoretical Framework

In the simplest terms, public policy decisions are made by government as a response to a political issue (Shafritz, Russell, & Borick, 2007, pp. 42, 557). Public policy analysis is an exercise to critically assess these government decisions in an effort to understand and improve policies (Dunn, 2004, pp. 1-2). To these ends, this research was designed to critically assess information and decisions at the federal, local, state, and tribal levels related to the Animas-La Plata Project in an effort to better understand and improve water strategists' planning and policy procedures. The framework for this assessment was Kingdon's (1995) three streams theory. This theory is based on the premise that policies are developed when three streams—problem, policy, and political—come together at a point called the *policy window*. The policy window is defined as "opportunities for action on given initiatives" (p. 166). Kingdon's theory relates to the

study approach and research subquestions by examining the problem (lack of water for irrigation on the La Plata River drainage and unmet tribal water rights), policy (the continuing debate over whether water storage in the form of the Animas-La Plata Project could address these problems), and political (if the A-LP Project succeeded in solving the problems). A more detailed discussion of Kingdon's theory as it relates to this research is presented in Chapter 2.

As mentioned previously, the constituencies used to populate the streams with the narratives in this research included representatives from the Animas-La Plata Water Conservancy District, Colorado Water Conservation Board, Colorado Water Resources and Power Development Authority, Navajo Nation, Southern Ute Indian Tribe, Southwestern Water Conservation District, U.S. Bureau of Reclamation, Ute Mountain Indian Tribe, and Project opponents. Voluminous records and publications beyond those reviewed in Chapter 2 included organizational documents from the Center of Southwest Studies, Colorado Water Conservation Board, and U.S. BOR.

Nature of the Study

The design tradition selected for this research was the case study method. Yin (2014) defined *case study research* as "a study that investigates a contemporary phenomenon in depth and in its real-world context" (p. 237). Creswell (2007) indicated that qualitative case study research examines a bounded system using a variety of sources of information in an effort to describe the case and associated themes (p. 73). Stake (2005) classified case study research as being collective, instrumental, or intrinsic. Collective case studies examine more than one case, while one objective of the

instrumental case study is to provide insight into a particular issue, such as water policy. Intrinsic case studies are exploratory. I used the instrumental approach. Benefits of the case study approach are its ability to build and construct theory based on a real-life phenomenon (Riege, 2003, p. 80). Having lived and worked in the nine-county Dolores/San Juan River Basin of southwestern Colorado since 1994, I am familiar with the real-life phenomenon known as the A-LP Project. I was interested in obtaining information through Project stakeholder narratives to better understand the validity of policy streams and window theory as they relate to water policy issues and formation.

The conceptual approach for this case study was narrative inquiry. As Reissman (1993) indicated, however, there is no single definition of narratives (p. 6). For purposes of this research effort, *narratives* were defined as A-LP Project stakeholders' interview responses. Czarniawska (1998) contended that narratives "are the main carriers of knowledge in modern societies" (p. vii). In this case study, the knowledge I was trying to tap came from A-LP Project primary stakeholder interview narratives.

As opposed to Roe's (1994) narrative policy analysis, this research was based on Riessman's (1993) narrative analysis. Roe's analysis focused on how conflicting narratives or stories often reveal more policy-relevant metanarratives. As this was my first research effort using narratives, I thought that this level of complexity and detail would best be saved for another time. Riessman's approach is broader in scope. Riessman identified four analytic approaches to interpreting narratives: performance, structural, thematic, and visual. In the performance approach, the ways that *who*, *when*, and *why* utterances are directed and used are examined. The focus of structural analysis is *how*

narratives are told, while thematics focuses on *what* is spoken. With the visual approach, other forms of communication besides words, such as art, gestures, and body movement (pp. 105, 141), are examined. For purposes of this research, I used the thematic tradition. Restated, I collected A-LP Project-related interview data in the Reismann thematic tradition to determine whether policy windows arose as streams of the Kingdon (1995) theory.

Data were collected through document review and interviews with stakeholders from the major organizations involved in the A-LP Project. In this case, *stakeholders* refers to those with the longest organizational involvement and highest seniority related to the Project, thereby representing a deep understanding of the A-LP Project itself. These individuals were identified with purposeful sampling using Project expert opinions and recommendations. Interviews were conducted with stakeholders from the primary organizations identified previously. I transcribed, categorized, and tabulated data with an eye to narrative themes leading to streams and policy windows. Specific techniques included arrays, color coding, and tabulations (Garger, 2010).

Definitions

In addition to some of the terms already defined, the following is a list of specialized key concepts used in this research.

638 Authority: Public Law 93-638, also known as the Indian Self Determination Act, allows tribal governments to assume administration of existing federal government programs. Under this process, otherwise federal programs are transferred to the tribal government via a 638 contract. “The tribe agrees to administer a particular program and

the associated federal funds are transferred to the tribal government" (Harvard Project on American Indian Economic Development, 2007, p. 33). In the case of the Animas-La Plata Project, the construction contract was awarded to the Ute Mountain Ute's Weeminuche Construction Authority.

Acre-foot (AF): A unit of volume commonly used to measure quantities of water used or stored. It is the volume of water required to cover one acre to a depth of 1 foot and equivalent to 325,851 gallons, 43,560 cubic feet, or 1,233 cubic meters (U.S. Geological Survey, 2005).

Adaptive management: Methods that seek to analyze ecological and social systems for their ability to adapt to disturbance (Foxon, Reed, & Stringer, 2009, p. 4).

Adjudicate (or adjudication): To determine water rights by an application to water court; a judicial decree dating and defining a water right (Colorado Water Conservation Board, 2004a).

Appropriate (or appropriation): To take the legal actions, confirmed by a water court decree, necessary to create a right to take water from a natural stream or aquifer and put it to beneficial use at a specified rate of flow, either for immediate use or to store for later use (Water Information Program, n.d.).

Beneficial use: Lawful and prudent use of water that has been diverted from a stream or aquifer for human or natural benefit (Water Information Program, n.d.).

Consumptive use: The total amount of water used by evaporation of surface water, human activities, and vegetation that deplete water supplies. It is a use that reduces

the amount of water available for other purposes because there is no direct return to a water resource system (U.S. BOR, 2012e).

Depletion: Permanent removal of water from an aquifer, basin, creek, reservoir, river, or stream as a result of consumptive use (U.S. BOR, 2012e).

Due diligence: A water developer is required to appear before a judge "to prove diligence on a water project by demonstrating continued efforts toward completion of the project" (Cech, 2010, p. 274).

Endangered Species Act (ESA): Approved in 1973 and administered by the U.S. Fish and Wildlife Service, the ESA serves to protect invertebrates, plants, and vertebrates believed to be in jeopardy of extinction (Cech, 2010, p. 413).

Improved source of drinking water: Piped water into a dwelling, plot, or yard, as well as a public tap, protected spring, or rainwater collection system. It does not include surface water taken directly from dams, irrigation channels, lakes, ponds, or streams; unprotected springs or wells; or water provided by carts or tanker trucks (UN, n.d., para. 1).

Interbasin Compact Committee (IBCC): The IBCC was established in 2006 by the Colorado Water for the 21st Century Act to enhance conversations among the Colorado river basins and to address statewide water issues. It is composed of a 27-member committee that "encourages dialogue on water, broadens the range of stakeholders actively participating in the state's water decisions, and creates a locally driven process where the decision-making power rests with those living in the state's river basins" (Colorado Water Conservation Board, n.d., para. 1).

Junior water rights: Water rights obtained more recently than older or more senior water rights and therefore junior in priority (Water Information Program, n.d.).

National Environmental Policy Act (NEPA): Signed into law in 1970, this statute applies to all federal agencies and their major actions taken that could significantly affect the environment (Fogleman, 1990, p. 1).

Prior appropriation: A water law that confers priority of water use from natural streams based upon when the water rights were acquired. Water rights in Colorado and other western states are confirmed by court decree, and holders of senior rights have first claim to withdraw water over holders who filed later claims (ALPWCD, n.d.).

Senior water rights: In Colorado, these are water rights that are staked the earliest with the water court (Water Information Program, n.d.).

Sovereignty or sovereign nations: The inherent right of Native American Indians to self-govern (U.S. Bureau of Indian Affairs, 2012).

Systems thinking: In general, the process of understanding how things influence one another within a whole. Although there is no one definition of systems thinking, key characteristics include an understanding that human systems are purposeful, that system members rely on each other to achieve their goals, that people exist in relationship, that the way a system is organized arises from interactions among its members, and that systems are full of tensions (Buckle-Henning & Chen, 2012).

Ten Tribes Partnership: In 1992, 10 Native American Indian tribes formed the Colorado River Basin Tribes Partnership to strengthen their representation and protection of Colorado River water. The 10 tribes are the Chemehuevi, Cocopah, Colorado River

tribes, Fort Mojave, Jicarilla Apache, Navajo Nation, Northern Ute, Quechan (Fort Yuma Reservation), Southern Ute, and the Ute Mountain Ute (Colorado River Water Users Association, n.d., para. 14).

Tribe: "An Indian or Alaska Native Tribe . . . that the Secretary of the Interior acknowledges to exist as an Indian Tribe pursuant to the federally recognized Indian Tribe List Act of 1944. There are approximately 565 federally-recognized tribes" (U.S. EPA, 2012a, p. 25). According to the U.S. Bureau of Indian Affairs (2012), a recognized tribe has a government-to-government relationship with the U.S. government (para. 5).

Water right: A property right to make beneficial use of a particular amount of water with a specified, historical priority date (Water Information Program, n.d.).

Welfare economics: A branch of economics that involves attempting to define and measure the welfare of society by identifying economic policies that lead to optimal outcomes (Feldman, 2008, para. 1).

Assumptions

This research was based on the assumption that interview participants were knowledgeable and possessed relevant experience related to the Animas-La Plata Project. In addition, it was assumed that those participants answered interview questions honestly and truthfully. These assumptions were necessary to move this research study forward.

Scope and Delimitations

Specific aspects of the research problem addressed in this study were the gathering of A-LP Project stakeholder narratives to understand whether streams form to open policy windows that allow action to meet water supply needs. These narratives

provided useful information related to public policy formation by identifying key factors involved to mobilize individuals and organizations around the common pool resource of water. The boundaries of the study were the A-LP Project itself and the major organizations and individuals who were involved with it. Populations excluded were those with no firsthand knowledge of or background information related to the Project. Because they were adequately covered in previous research, I did not include other theoretical frameworks most related to the area of study including those associated with endangered species (Gosnell, 2000), the advocacy coalition framework (Ellison, 1998), the distributive coalition theory (Ellison & Newmark, 2010), and the social-ecological resilience framework (Eidem, 2012).

Limitations

Purposeful sampling was used to select participants for interviews. This method can be both a positive and a limiter. On the positive side, participants were selected who had knowledge about the phenomenon being studied. In addition, as a Colorado environmental professional, I was knowledgeable about the population and the phenomenon under investigation, and I had the ability to make informed decisions in interviewee selection. Limitations include a confined sample size and unintended interview interpretations. To help compensate for this, I used triangulation, that is, several different methods for data collection (Patton, 2002). The types of data that I used in this case study research to demonstrate triangulation or convergence of data included archival records, A-LP Project-related documents identified with a thorough literature review, and stakeholder interviews. In addition, because I was dealing with people's feelings and

thoughts and asked questions about things that took place at some previous point in time, I was cognizant of potential shortcomings related to limitations of transferability for future studies.

Because this was a qualitative case study, I as the researcher was the data collection, analysis, and interpretation instrument. Related to these, and to the extent possible, I acknowledged and recognized my biases. In this regard, I fully disclosed that I work with, in a contract capacity, a number of organizations involved with the A-LP Project, such as the Animas-La Plata Water Conservancy District and the Southwestern Water Conservation District. Throughout the research effort, however, I maintained a heightened awareness about the propensity for subjectivity and strove for empathetic neutrality. As Patton (2002) noted, "An empathically neutral inquirer will be perceived as caring about and interested in the people being studied but neutral about the content of what they reveal" (p. 569). In this regard, I was interested in the rich variation in human experience and cared deeply about the A-LP Project interviewees' input and stories through narratives.

Significance

Qualitative researchers do not use statistical tests to inform them when an observation or pattern is significant; instead, they must rely on their own experience, intelligence, and judgment (Patton, 2002). In addition, when the researcher, interviewees, and reviewers agree, then "consensual validation of the substantive significance of the findings" (p. 467) is achieved. I determined the significance of this research through interviewees' review of their transcripts and triangulation, as mentioned previously.

In addition, the significance of this research is multifaceted. In that it used stakeholder narratives to determine the validity of policy streams and window theory, this A-LP Project is a case study for future planning efforts. From a positive social change perspective, the A-LP Project narratives provide useful insight into long-term public policy formation and planning by identifying key factors involved in open policy windows that mobilized individuals and organizations around the common pool resource of water.

Summary

An introduction to the study and background information on the global and U.S. national water situation, as well as A-LP Project-related research, was provided in this chapter. The problem, purpose of the study, and research question were presented. Evidence suggests that there are serious and impending public policy issues related to the intersection of water demand and supply. The purpose of this instrumental case study research is to gather A-LP Project stakeholder narratives to identify whether the opening and closing of policy windows contributed to making the Project a reality. The research was designed to answer the central research question: Did policy streams (Kingdon, 1995) diverge, emerge, and join over the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water? In addition, I justified Kingdon's (1995) three streams (problem, policy, and political) theory as the theoretical framework for this study. The nature of the study was presented, and I discussed Reismann's thematic narrative analysis as the conceptual framework. Definitions were provided, and assumptions, scope and delimitations, and limitations

were discussed. The chapter concluded with an overview of the significance of this research. A review of the literature related to the A-LP Project is presented in Chapter 2. The major categories of the literature review that align with the problem, purpose, research question, and theoretical framework include the Animas-La Plata Project, Kingdon's three streams theory, and water policy.

Chapter 2: Literature Review

Introduction

As presented in Chapter 1, there are serious and impending public policy issues related to the intersection of water demand and supply. The purpose of this case study research was to gather A-LP Project stakeholder narratives in an effort to answer the central research question: Did policy streams (Kingdon, 1995) diverge, emerge, and join over the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water? In reference to the research problem, this chapter provides a thorough review of related research and literature. Over the course of the half-century A-LP Project, little of the literature has been presented from the perspective of those actually involved in the Project. I identified no studies that examined the A-LP Project using Kingdon's (1995) three streams theory.

Chapter 2 begins with the strategy used for searching the literature. Next, a review of the literature related to Kingdon's (1995) theoretical framework is provided. A contextual review includes the most relevant and current published knowledge on the Animas-La Plata Project, organized around key policy variables. A review of relevant water policy literature is provided in the conclusion of the chapter.

Literature Search Strategy

The literature search strategy used to compare and contrast available data and information related to the A-LP Project included book reviews, official organizational websites, scholarly database searches of peer-reviewed documents, and various local data repository sources. Book searches were conducted at libraries in Durango and Pagosa

Springs, CO, as well as personal and professional collections and Walden University's eBooks. I was able to find a wide range of A-LP Project information from the Southwestern Water Conservation District and U.S. Bureau of Reclamation (BOR) libraries. Of particular usefulness were the Center of Southwest Studies (CSS) A-LP Project archives. The CSS is based in Durango at Fort Lewis College and houses an extensive collection of historically significant records related to the A-LP Project. Major organizational websites were also reviewed, including the Colorado Water Conservation Board, U.S. BOR, and U.S. Environmental Protection Agency. The primary databases and search engines used for peer-reviewed literature were Walden University's library databases—EBSCO, Google Scholar, ProQuest, and Sage, as well as Dissertations-Theses. Given that the A-LP Project spans more than 5 decades, other non-peer-reviewed information abounds in the form of conference presentations and proceedings, current industry news, internal organizational documents, Internet sources, news sources, press releases, and trade journals. For purposes of this study, many of these were reviewed but not all were incorporated.

The ongoing, iterative search process for this study began in approximately 2010, with more than 300 database searches conducted and hundreds of articles and papers reviewed. The Walden University librarians and research center were contacted numerous times over the course of the years, and staff provided helpful advice and recommendations for keywords, search strategies, and word term combinations. While my searches focused on peer-reviewed literature, non-peer-reviewed searches were also conducted.

The peer-reviewed iterative search process began with the *Animas-La Plata Project* (with and without the hyphen) and *A-LP Project*. This yielded a number of useful sources, including dissertations and theses. I also combined the *A-LP Project* term with a multitude of additional keywords, including the names of stakeholder organizations involved with the project—*Animas-La Plata Water Conservancy District, Colorado Water Conservation Board, Colorado Water Resources and Power Development Authority, Navajo Nation, Southern Ute Indian Tribe, Southwestern Water Conservation District, U.S. Bureau of Reclamation, Ute Mountain Indian Tribe*—and various Project opponents, as well as *case study*; *narratives*; *Native Americans*; and *water*, that is, development, reservoirs, and policy. In addition, I conducted multiple searches for *Lake Nighthorse*, along with some of the previously mentioned keyword combinations.

It should be noted that I specifically did not include searches of similar reservoir construction projects not only because so few have been constructed since Lake Nighthorse—it is often called "the last big water project in the West" (Thompson, 2012, para. 3)—but also because this study did not examine dam-building processes per se. For purposes of this research, I was specifically interested in a very narrow scope—A-LP Project narratives—in an effort to identify whether policy streams diverge, emerge, and join to mobilize individuals and organizations around the common pool resource of water.

I also searched Kingdon's (1995) three streams theory, which yielded more than 1,000 results. *Kingdon* and the *A-LP Project* (also fully spelled out with and without the hyphen) provided no hits. Moreover, I combined *Kingdon* with additional keywords

including *reservoirs*, *water*, *water development*, and *water policy*, which yielded a number of useful sources discussed in this chapter. Finally, a review of the literature related to U.S. water policy was undertaken and resulted in decades of material to be presented below. The non-peer-reviewed search process was similar to the iterative process described above and yielded thousands of results, some of which were useful for this project.

These approaches were successful in leading to some key documents, research, and scholarship as described above. In all, however, I found but a few A-LP Project stakeholder narratives and no Kingdon theory studies related to the Project. Several studies related to other water projects had some transferability to this effort. These gaps in the literature highlighted areas where I am hopeful this research will contribute to water planning and policy.

Theoretical Framework

Case study research has no limitations on applicable theoretical frameworks. DeVirgilio (2010), however, stated that public policy and administration dissertations with case studies often use an organizational behavior or rational actor theory. For purposes of this study, these theoretical frameworks were not a good fit. In general, organizational theories focus on decision making within organizations, whereas this study explored emergent thematic cultural narratives. Rational actor theory is used to examine individual behavior but I was interested in collective behavior. Other theories that were examined included game (von Neumann & Morgenstern, 1944) and garbage can (Cohen, March, & Olsen, 1972) models. I explored game theory as a method to explain

stakeholder behavior but ultimately decided to save it for future research efforts. While garbage can theory disconnects decision makers, problems, and solutions from each other, it does not re-mediate them as a political intersection. In the end, I decided that three streams theory was the best choice for use with Reissman's (2008) narrative thematic analysis framework.

The foundation for this study was Kingdon's (1995) three streams theory, which I applied to determine whether policy streams diverged, emerged, and joined through the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water. Kingdon's theory is based on the premise that policies are developed when three streams—problem, policy, and political—come together at a point called the *policy window*. The problem stream is composed of the issues that need to be solved—in this case, the lack of irrigation water for the dry side of La Plata County and unmet tribal water rights. The policy stream consists of perspectives on potential answers or solutions to address the problem. This case study explored whether the Animas-La Plata Project was considered by stakeholders to be the solution to these problems. According to Simanjuntak, Frantzeskaki, Enserink, and Ravesteijn (2012), "The political stream is a combination of national mood, pressure groups, and turnover in office" (p. 563). Related to this stream, how did the political stream coalesce over time to make the construction of Lake Nighthorse a reality? Again, when these three streams intersect, a policy window, which is open only for a short time, emerges.

Kingdon (1995) defined policy windows as opportunities for action on initiatives (p. 166). Roe (1994) indicated that one method to study these policy windows is through

narratives that emerge through interviews with stakeholders. According to Kingdon, however, open policy windows by themselves do not lead to change. In this regard, Kingdon used the term *policy entrepreneurs* to define those people who play a critical role by seizing opportunities to get issues on the agenda. Policy entrepreneurs link solutions to problems and "work to get the resulting policy packages accepted by decision makers" (Meijerink & Huitema, 2010, para. 19).

The rationale for choosing Kingdon's (1995) theory for this research was that it takes into account not only problems but also policies and politics associated with a given situation. Kingdon's three steams theory was perfectly suited for this A-LP Project case study research because it focuses on institutional arrangements and the politics of the policy process, aligns with complex and long policy and decision-making processes, and proposes a model for how external events create windows of opportunity (Simanjuntak et al., 2010, p. 563).

While Kingdon is widely quoted in scholarly policy literature, searches combining his theory with *water*, *water infrastructure*, *water policy*, and *water reservoirs* yielded few results. Only two were useful for this research effort. Meijerink and Huitema (2010) used Kingdon's theory to identify characteristics of policy entrepreneurs in 16 case studies of global water transitions. Simanjuntak et al. (2012) used Kingdon's three streams theory to determine why so little progress has been made in building flood defense systems in Indonesia, despite the critical need. The authors determined that there was a lack of policy entrepreneurs and that "it was events in the political stream that were crucial for the implementation of the Jakarta flood infrastructure, and not the lack of

infrastructure solutions and policy" (p. 577). These were the only peer-reviewed studies I was able to find that applied Kingdon's theory to water policy issues. Based on so few results, it appears that Kingdon's three streams theory has been applied only in a limited way to the development of water policy, which clearly indicates a gap in the academic literature and great potential for using the theory to explore mobilization to action.

The following sections provide a comprehensive review of the A-LP Project. Information on the background of the Project is provided first to set the context for this case study. As Ellison (2009) noted, though, "Sorting through the administrative morass that surrounds the project is deliberately daunting" (p. 368). Therefore, my goal was to provide enough historical information on the Project to establish the presence, in the literature, of elements of the three-streams model that have not previously been combined in the way of Kingdon's theory. Again, as reference and recap, the problem stream is defined for purposes of this literature review as issues that need to be solved, the policy stream as potential solutions to address the problem, and the political stream as politics directed at the problem.

Animas-La Plata (A-LP) Project

The A-LP Project refers to the entire 50-year process involved in planning and constructing a reservoir, Lake Nighthorse, just outside of Durango, CO. The Project is located in the nine-county Dolores/San Juan River Basin in the southwest corner of the state. Major rivers in the basin include the Animas, Dolores, Florida, La Plata, Mancos, Navajo, Piedra, Pine, San Juan, and San Miguel. While the basin is fortunate to have a

multitude of water sources, many are intermittent, and supplemental supplies are needed in summer and dry years.

According to the Colorado Climate Center (2010), Colorado receives an average of 17 inches of precipitation per year, with portions of the state, including the southwestern part, receiving even less. This amount is not enough moisture for agricultural purposes, so irrigation is common in the West (U.S. EPA, 2012b), which requires supplemental or stored water. This lack of precipitation is why the Dolores/San Juan River Basin is also home to a number of U.S. BOR water storage reservoirs, including Jackson Gulch (Mancos Project), Lemon (Florida Project), McPhee (Dolores Project), and Vallecito (Pine River Project). In La Plata County, now home to the U.S. BOR's A-LP Project, additional storage had been needed since the turn of the century because the Animas River was one of the few remaining rivers in the region with enough stream flows to support a new project for agricultural development. However, because most of the area's inadequately irrigated acreage is found west of the Animas River along the much drier La Plata River watershed, area farmers and other interests searched for years for methods to divert water from the Animas to the La Plata River basin (Animas-La Plata Water Conservancy District [ALPWCD], n.d.). This need was the basis for the original name of the project (*Animas-La Plata*) and one of its primary initial intents—to deliver Animas River water to irrigate lands in the La Plata River drainage (known locally as "the dry side"). This was also the basis for the problem stream of the Project.

The Early Years—Up to the 1940s

In response to the aforementioned problem, the U.S. Reclamation Service (predecessor to the U.S. BOR) initiated a solution or policy stream in 1904 by undertaking a study to store Animas River water and divert it to the dry side (Allen, 1997; Ellison, 2009). The project was deemed unfeasible at that time but proponents—the political stream—did not give up. Whether it was as a result of the political stream's influences or not, the U.S. BOR did devise an engineering plan for the A-LP Project in 1938, which was pursued by the ALPWCD in 1944 (Center of Southwest Studies, 2012). According to B. Whitehead (personal communication, November 8, 2012), executive director for the Southwestern Water Conservation District (SWCD), the SWCD filed for water rights associated with the project in 1965, with the date of appropriation going back to planning efforts in 1938.

Feasibility Study—1950s

In 1956, another policy stream was authorized when Congress approved a feasibility study through the Colorado River Storage Act to move water from the Animas River to the La Plata River drainage. Originally, the project was envisioned as a gravity flow system to include the construction of three reservoirs—Hay Gulch (about 23 miles west of Durango), Howardsville (50 miles north of Durango above Silverton), and Meadows (southwest of Durango approximately 35 miles from the state line of New Mexico), plus 48 miles of tunnels and canals, including a diversion of the Animas River (ALPWCD, n.d). Over the years, however, additional sites (policy streams) were studied to avoid the long miles of tunnels and canals and expensive infrastructure, plus the

associated environmental impacts. An additional advantage of moving the reservoir downstream was that water from the tributaries of Hermosa, Junction, and Lightner Creeks would improve the flows available to divert into a downstream reservoir while also meeting environmental commitments (ALPWCD, n.d.; B. Whitehead, personal communication, November 8, 2012).

Colorado River Basin Project Act—1960s

In 1968, Congress furthered the policy stream by authorizing the construction of the A-LP Project in the Colorado River Basin Project Act (U.S. BOR, 1979, 2008a, 2012a). Four other Colorado water projects, including McPhee Reservoir in the Dolores/San Juan River Basin, were also approved in this Act. Allen (1997) provided history on what he termed the *crux year* of 1968, which clearly involved the political stream of Kingdon's (1995) theory. Allen claimed that Colorado received funding for the water projects in the Colorado River Basin Project Act due to political posturing of the state's then-Congressman Aspinall. S. Harris (personal communication, December 27, 2012), a respected water engineer in the basin involved with the A-LP Project since the 1980s, contended that Aspinall was attempting to assure that Colorado was able to develop its water allocation in the Colorado River Basin simultaneously with Arizona. Therefore, in the early years, it appears that the A-LP Project was in part a political bargaining chip and not strictly an irrigation project.

The states of Colorado and New Mexico endorsed the Colorado River Basin Project Act in 1969 by ratifying the Animas-La Plata Compact (Colorado Revised Statutes 37-64-101, 1969; New Mexico Revised Statutes 72-15-1, 1969). The compact

was entered into to implement the operation of this federal project. It allows the right to store and divert water in Colorado and New Mexico for use in both states (B. Whitehead, personal communication, November 8, 2012).

Tribal Lawsuits and Scaled Down Project—1970s

In 1972 a policy window opened for the tribes. The Southern Ute and Ute Mountain Ute Indian Tribes identified a major problem stream associated with the recognition of reserved water rights on their reservations. As a result the tribes sued the federal government (Ellison & Newmark, 2010; U.S.BOR, 1979, 2008a, 2012a). Reserved water rights are based on the landmark 1908 Winters doctrine, which stipulated that Native Americans with reservations "have reserved water rights in sufficient quantities to fulfill the purposes for which the reservation was established, and the date of the reserved right is the date of the treaty or Executive Order setting aside the land" (Storey, 2002, p. 10). In Colorado, the Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservations were established in 1868 (Binkly, 2012; U.S. BOR, n.d.) and would therefore have an 1868 priority date compared to other water users in southwest Colorado. The tribes clearly had high priority or senior water rights in the prior appropriation system, which is the legal basis for water law in the West. Prior appropriation, or "first in time, first in right," is based upon the premise that the first to put water to beneficial use takes priority over later or junior users (Hansen, 2011). Native American water rights, whether or not the water has been put to beneficial use, are retained indefinitely into the future.

As the tribal legal issues waged on, the Carter administration (1977-1981), amidst budget cuts, required tests of project economic feasibility (Bromley, 2000; Ellison, 1998, 2009; Ellison & Newmark, 2010; U.S. BOR, n.d.). These realities furthered Kingdon's (1995) policy and political streams premise by suspending the start of any new public works water projects (U.S. BOR, n.d.; U.S. BOR, 2012a). In the meantime, the U.S. BOR issued a Definite Plan Report in 1979 for the A-LP Project (U.S. BOR, 1979). This new plan or policy stream now involved two reservoirs—Ridges Basin (later renamed Lake Nighthorse) and Southern Ute. This was a network of irrigation canals and pipelines to serve approximately 60,000 acres in the La Plata River basin (S. Harris, personal communication, December 27, 2012). The plan was to pump water from the Animas River into the Ridges Basin Reservoir then to pressurized canals and pipelines to serve irrigation fields (ALPWCD, n.d.; Harris, 2012).

Cost Sharing and Continued Tribal Lawsuits—1980s

In 1980, the U.S. BOR issued its Final Environmental Impact Statement for the Project (U.S. BOR, 1980), and construction was set to begin. During this period the Reagan administration (1981-1989) also furthered Kingdon's (1995) political stream principle by calling for cost share agreements (Ellison, 1998, 2009; Ellison & Newmark, 2010; Gerlak, 2005). In an effort to comply with cost reductions, the Southern Ute Reservoir was eliminated. According to S. Harris (personal communication, August 29, 2014), "The project could function without the reservoir but not as efficiently because the significant return flow from Colorado irrigation would not be caught and stored but would flow to the San Juan River." Harris pointed out that the reservoir would have

served the New Mexico irrigators and Southern Ute coal reserves on a portion of their reservation. Eventually, the tribal lawsuit was finally worked out in the policy stream of the 1988 Colorado Ute Indian Water Rights Settlement Act (Ellison & Newmark, 2010; U.S. BOR, n.d.). Ultimately, based on the Winters doctrine described above, the Ute Tribes were the major recipients of the A-LP Project water. Table 1 lists the water allocations in acre feet for all the project participants.

Table 1

A-LP Project Water Recipients and Allocation (AF)

A-LP Project Participant	Acre-Feet Supply	Acre-Feet Depletion
Southern Ute Indian Tribe	33,050	16,525
Ute Mountain Ute Indian Tribe	33,050	16,525
San Juan Water Commission	20,800	10,400
State of Colorado	10,460	5,230
Animas-La Plata Water Conservancy District	5,200	2,600
Navajo Nation	4,680	2,340
La Plata Conservancy District of New Mexico	1,560	780
Evaporation	2,700	2,700
TOTAL	111,500	57,100

Environmental Concerns and "A-LP Lite"—1990s

Just as the U.S. BOR was about to commence construction in 1990, the U.S. Fish and Wildlife Service (U.S. FWS) concluded that the A-LP Project would jeopardize the existence of one of Colorado's endangered fish species (Upper Colorado River Endangered Fish Recovery Program, 2012), the pikeminnow (Gosnell, 2000; U.S. BOR, n.d., 2012a). After complicated negotiations and work, the U.S. FWS issued a Final Biological Opinion in 1991 that called for the reduction of the original supply size of the project from 198,200 AF per year (U.S. BOR, 1979) to 111,500 AF (57,100 AF of

depletions) and included an endangered fish recovery program (U.S. BOR, 2008a). In 1992, however, environmental groups such as Earth Justice (formerly Sierra Club Legal Defense Fund) and Taxpayers for the Animas River brought legal actions to stop construction of the Project based on environmental problems. In response, the U.S. BOR released a Final Supplement to the A-LP Project Final Environmental Statement in 1996 that "addressed updated environmental information" (U.S. BOR, 1996, p. 1), thereby once again moving the Project forward.

In the 1996-1997 timeframe, too, a political stream emerged when Colorado Governor Romer and Lieutenant Governor Schoettler conducted meetings with a variety of parties to help resolve Project concerns and problems (Ellison, 2009; Ellison & Newmark, 2010; Pollack & McElroy, 2001; U.S. BOR, n.d.). This came to be known as the Romer/Schoettler process but as Ellison (2009) indicated, Secretary of the Interior Babbitt "rejected the Romer/Schoettler proposal and instead entered into a series of secret negotiations with the Ute Tribes and project proponents" (p. 372). I was unable to find additional information on Ellison's contention or to substantiate it, although R. Ehat (personal communication, December 27, 2012), a retired A-LP construction project manager for the U.S. BOR, did inform me that the U.S. government does conduct closed-door negotiations when it comes to water rights with sovereign nations due to their federal trust responsibilities. C. Brown (personal communication, September 27, 2013), an attorney for the U.S. BOR, commented that "we look at these settlements as the settlement of litigation, and we can and do hold confidential settlement discussions with parties as appropriate and within legal guidelines." S. Harris (personal communication,

December 27, 2012) indicated that the Romer/Schoettler process resulted in a project or policy stream that only included the Durango pumping plant and a 240,000 AF Ridges Basin Reservoir, which was large enough to serve irrigation in the future if funding could be obtained. Babbitt then further reduced the Project to a reservoir size of 120,000 AF and designated Project water for municipal and industrial purposes, with no irrigation component.

In 1998, the U.S. BOR formally recommended a scaled-down version of the project. This A-LP Ultra Lite (as it would come to be known) eliminated the irrigation components as a means to limit river depletions and to address Endangered Species and Clean Water Act requirements (U.S. BOR, 2008a). Ellison and Newmark (2010) contended that none of the traditional supporters "bemoaned the loss of agriculture in A-LP" (p. 671). Contrary to this statement, it is a commonly held proponent view in the area that the loss of irrigation was an understatedly major disappointment.

Tribal Lawsuits Settled and Construction Approved—2000s

In 2000, the U.S. BOR released a Final Supplemental Environmental Impact Statement and Record of Decision that identified the A-LP Ultra Lite as the preferred alternative (U.S. BOR, 2008a). In addition, Congress authorized the scaled-down Project in the Colorado Ute Settlement Act Amendments of 2000 (U.S. BOR, n.d.). The Amendments established a $40 million municipal and rural water development resource fund for both tribes and included the Navajo Nation municipal pipeline (U.S. BOR, 2008a). Both of these measures constituted policy streams. The following year, U.S. BOR Commissioner Keys approved the start of Project construction, which officially

began November 9, 2001 (U.S. BOR, n.d.). In 2002, four major tasks started: (a) the inlet conduit pipeline sleeve, (b) outlet work and portal excavation, (c) the selection of final routes for the Navajo Nation municipal pipeline, and (d) the cultural resource mitigation program (U.S. BOR, n.d., 2008a).

According to R. Ehat (personnel communication, September 4, 2014) the inlet conduit pipeline sleeve needed to be installed before three existing high pressure gas lines were relocated at the future dam site, thereby allowing them to be installed unimpeded over the sleeve. The inlet conduit eventually would be threaded through the sleeve and under the active gas lines at a later date. The dam's outlet work would be through a tunnel excavated into rock, while the inlet portal required a long intake channel to be excavated into the future reservoir. The Navajo Nation municipal pipeline location included cultural, environmental, land ownership, and topographical surveys, as well as preliminary hydraulic design work. The cultural resource mitigation had to precede any field construction and ground disturbing activities in order to avoid construction delays. Because the location of Lake Nighthorse, Ridges Basin, contained hundreds of prehistoric sites and several historic ranches, an A-LP Cultural Resources Oversight Committee was established. More than 20 tribes were involved and consulted, and from 2002 to 2005, four 6-month long archeological field excavations were conducted (U.S. BOR, n.d.). The artifacts and information recovered from the Ridges Basin field excavations are now housed in the Anasazi Heritage Center near Dolores, CO. This center also holds the artifacts from the Dolores Project when McPhee Reservoir was built.

In 2003, the estimated project costs were updated and revealed an increase from $338 to $500 million, and the completion dates moved from 2009 to 2011 (U.S. BOR, n.d., 2008a). The completion dates changed because, while construction could be finished in 2009, the reservoir would take more than a year to fill (R. Ehat, personal communication, December 27, 2012). In 2004 the reservoir was officially named Lake Nighthorse after former U.S. Senator Nighthorse Campbell (R-CO), a huge supporter of the Project (U.S. BOR, n.d.). Ridges Basin Dam was finished in November 2007, and the pumping plant was completed in 2009 (U.S. BOR, n.d.). This plant pumps Animas River water 525 feet in elevation to Ridges Basin (Center of Southwest Studies, 2012). The reservoir officially filled June 29, 2011 (U.S. BOR, 2011).

As of this writing, because of a variety of legal and tribal-related issues, the reservoir still is not open to the public. Litigation is actively occurring over the due diligence filing on the Project water rights held by the Southwestern Water Conservation District. The entities that have filed statements of opposition include all three tribes involved with the Project, Colorado Water Conservation Board, La Plata Conservancy District (NM), and San Juan Water Commission (NM). In addition, while a recreation plan was developed for the lake and surrounding area, tribal cultural resource concerns have emerged, as well as problems associated with the management of Lake Nighthorse recreation.

Additional A-LP Project Research

In addition to the information provided above, the earliest scholarly research I was able to find on the A-LP Project was Mann's (1988) dissertation, which used three

empirical models to assess the economic impacts of the irrigation or agricultural components of the project. The primary sectors Mann identified were federal, state, and local but all in relation to repayment options associated with the Project. At the federal level Mann identified the U.S. Bureau of Reclamation as a key player in the A-LP Project. From a state perspective Mann referenced the Colorado Water Conservation Board and the Colorado Water Resources and Power Development Authority as major organizations involved with the Project. At the local level, in addition to both the Ute Tribes, Mann identified the Animas-La Plata Water Conservancy District as a key A-LP Project stakeholder. All of these identified organizations were in support of the A-LP Project. The key issue or conclusion Mann reached was that the A-LP Project would give the state little in economic gains and some sectors may see economic losses (p. v). The research was strictly quantitative, with no stakeholder interviews or narratives.

Almost a decade later, Leeper (1997) provided comprehensive background information on the A-LP Project. The primary organizations Leeper identified were both of the Ute Tribes, as well as the Navajo Nation and the states of Colorado and New Mexico—all of which were A-LP Project supporters. Ultimately, Leeper characterized the A-LP Project as a "train wreck" due to the amount of conflict involved and contended that resolving San Juan River Basin disputes would require litigation, negotiation, and regional planning (p. 36).

Allen's (1997) thesis provided a case study account of the Project. Allen specifically identified "the players" (p. 33) as the states of Colorado and New Mexico; Environmental Protection Agency; Department of the Interior; project proponents—

Animas-La Plata Water Conservancy District, both Ute Tribes, San Juan and La Plata Conservancy Districts, and the San Juan Water Commission; and Project opponents—the Sierra Club, Southern Ute Grassroots Organization, and whitewater associations. Allen identified these organizations as players because they had an interest in the outcome of the Project (p. 33). The research included Project participant commentaries. Some of those provided useful insight related to this research effort. In particular, Project-related comments and quotes from some of the stakeholders involved in the A-LP Project, such as Project proponent and uncontested A-LP Project *policy entrepreneur*, Frank (Sam) Maynes. Kingdon (1995) defined policy entrepreneurs as advocates willing "to invest their resources—time, energy, reputation, and sometimes money—in the hope of a future return" (p. 122). Maynes was a prominent southwest Colorado lawyer who provided legal counsel to the Ute Tribes and the Southwestern Water Conservation District. Having passed away in 2004, Maynes did not participate in this research effort.

Additional short narratives in Allen's (1997) research in the form of quotes were provided by another Project proponent, U.S. Senator Nighthorse Campbell. Campbell may have identified some political stream issues when he stated that "we've studied everything before but every time you turn around a new face pops up in Colorado or Washington, and we start again" (p. 41). A policy entrepreneur, Leonard Burch, was also quoted in Allen's work. In 1966, at age 32, Burch became the youngest tribal member to be elected chairman of the Southern Ute Indian Tribe. He passed away in 2003. Ultimately, however, Allen looked at 200 years of attitudes toward nature (p. iv) by comparing and contrasting 18th-century Spanish views of nature in the modern-day Four

Corners region with contemporary environmental views of those involved with the A-LP Project. The issues that Allen identified were not only that water projects help to contribute to a sense of community identity (p. 15) but that water in the West is fundamentally a political power struggle (p. 15). The latter contributes to the political stream component of this research effort as it relates to organized interests (Kingdon, 1995, p. 163).

In 1998, Ellison provided a peer- reviewed analysis of the policy changes that occurred during the planning for construction of the A-LP Project through the advocacy coalition framework. Ellison referred to the major organizations involved in the A-LP Project as the "the water resources development coalition" (p. 18). Specifically, the author identified Project supporters as the Animas-La Plata Water Conservation District (this was actually the A-LP Water *Conservancy* District), Colorado Water Conservation Board, U.S. Bureau of Reclamation, and both the Ute Tribes. In addition to the Ute Tribes, additional Project supporters were identified as the Native American water development coalition to also include the Navajo Nation. Ellison further identified an A-LP Project environmental protection coalition—those who provided opposition to the Project, as the U.S. Fish and Wildlife Service (FWS), university researchers, and interest groups such as the Environmental Defense Fund and the Four Corners Action Coalition (p. 19). While a major focus of the research revolved around the A-LP Project's threat to the Colorado pikeminnow, Ellison ultimately concluded that in technical disputes coalitions protect their core policy beliefs by adopting secondary belief systems. While Ellison did make reference to a number of personal interviews to support his work, he

combined and summarized them, and individuals were not quoted directly to provide verifiable and trustworthy Project narratives. In an indirect manner, however, Ellison's work supported key policy window eras identified previously in the background section. Those were the 1970s, when the Project was stalled for adjudication of tribal water rights (p. 14); the 1980s, when various administrations "questioned the economic feasibility of many Western water development projects" (p. 15); and the ongoing environmental concerns, which became most active and culminated in the 1990s.

A few years after Ellison's research, Gosnell (2000) examined the lessons learned from the A-LP Project in relation to decision making in the formulation of a Biological Opinion under the U.S. FWS Endangered Species Act (ESA). The FWS was the primary focus of her research because it is the federal agency responsible for the ESA. In addition to the FWS and Project opponents such as the Sierra Club Legal Defense Fund and Taxpayers for the Animas River, Gosnell identified most of the other major organizations involved with and supportive of the A-LP Project to include the Animas-La Plata Water Conservancy District, both Ute Tribes and the Navajo Nation, Colorado Water Conservation Board, New Mexico, Southwestern Water Conservation District, and the U.S. BOR. While she conducted interviews and provided some of the associated narratives in the form of quotes, most were presented as they related to the ESA.

Gosnell (2000), however, may have identified a problem, policy, and political stream in a statement that "the prevailing sentiment amongst many politicians has been that A-LP must be built to do justice to the Colorado Ute Tribes" (p. 151). In addition, the author identified policy entrepreneurs Ben Nighthorse Campbell, Sam Maynes, Fred

Kroeger, and John Murphy. Ultimately, Gosnell concluded that the reasonable and prudent alternative (RPA) associated with the Biological Opinion of the ESA and the A-LP Project "was neither reasonable nor prudent" (p. 212) and other structural and non-structural options were not adequately considered. Gosnell referred to a RPA as one that is administratively, economically, and technically feasible, and would avoid harm to a critical habitat or endangered species. The author concluded that "the ESA and other laws are not adequately equipped, or even authorized, to engage in thoughtful alternatives analysis" (p. 240). Gosnell contended that there is a need to mandate comprehensive alternatives analysis throughout our current system of environmental laws. It should be noted that alternatives analysis was not the focus of that research effort.

In 2001, Pollack and McElroy strongly disagreed with Gosnell's (2000) criticism of the RPA of a smaller project (i.e., A-LP Ultra Lite) than was originally planned. The authors contended that the RPA was consistent with the federal responsibility to endangered species, Native Americans, and other environmental laws (p. 639) and was, therefore, the correct course of action. Pollack and McElroy identified a number of the major organizations involved with the A-LP Project to include all three tribes, the U.S. BOR and FWS, and the state of Colorado. As mentioned previously, these are all Project supporters.

In 2009, Ellison provided additional A-LP Project research, which included a comprehensive and informative case study of the Project history. The author identified the same major organizations involved with the A-LP Project as his 1998 research discussed previously. Ellison used documentary and archival data from a number of

sources to determine how and when the Project beneficiaries will use the A-LP water and the reasons for constructing the Project when it was demonstrated that nonstructural solutions to Native American water rights claims were effective and acceptable. I was able to find only one sentence in Ellison's research related to the latter. It alluded to tribal water marketing, providing water from the Navajo reservoir located on the Colorado and New Mexico border, and providing investment funds.

Another purpose of the Ellison (2009) study was to examine how administrators get what they want from the policy process. In doing so, he made reference to pork-barrel politicking and "secret negotiations with the Ute Tribes and project proponents" (p. 372). As presented earlier, tribal water rights settlements are considered settlements of litigation, which is often conducted through legal and confidential discussions. In general, Ellison referred to Project proponents as elites and concluded that the A-LP Project is actually a political project and that it takes only a few elite stakeholders to make projects such as this a reality. Ellison further concluded that it is difficult for the general public to maneuver through the detailed administrative processes involved in natural resource development policy. This leaves important public decisions to those that are most familiar with bureaucracy and politics and eliminates the possibility of public debate (p. 378). Ellison's study did not include narratives from those actually involved with the A-LP Project.

A year later, Ellison and Newmark (2010) published a paper that identified the same major organizations involved with the A-LP Project as Ellison's 1998 and 2009 research. Here the authors stated that the A-LP Project was authorized as a tribal water

rights claim "for which there is no water right, no demand, and no capacity to deliver the water" (p. 664). In this and other regards (i.e., administrative processes), the authors pointed out that while there was extensive criticism of the Project, critiques have gone unheeded. They contended that this was possible because the distributive coalition (U.S. BOR) used the administrative process, through the management of information, to control policy. B. Whitehead (personal communication, December 27, 2012) noted that these claims and conclusions were obtained from paid consultants and expert witnesses opposing the Project. In either case, this research did not contain A-LP Project participant narratives to help identify if and how streams merged to make the Project a reality.

Most recently, Eidem (2012) looked at the A-LP Project from a social-ecological resilience perspective and identified some of the major organizations involved with the Project as the BOR, San Juan Water Commission, and Sierra Club Legal Defense Fund. In general terms Eidem further listed the predominant stakeholder groups as those related to endangered species, Native Americans, and non-Indian water users (p. 105). Eidem began his research with an event database analysis. By merging this analysis with resilience theory, the author focused on understanding how stakeholder group interactions can enhance resilience. In this regard Eidem referred to the A-LP Project as a milestone in resilience building (p. 104), and concluded that the Project "represents the culmination of intense debate, deliberation, and ultimately compromise between stakeholder groups" (p. 108). Eidem concluded, too, that policy-makers and researchers should focus on adaptive management and systems thinking and suggested that policy-makers learn the history of a region and open multiple stakeholder group lines of

communication to determine what is important to them. This was a major intent of the current research.

In addition to the studies referenced above, I found little else in the peer-reviewed literature related to the A-LP Project. Non-peer-reviewed information abounded, however, in the form of, among other things, internal organizational documents, Internet searches and websites, newspaper articles, and press releases. For purposes of this study, many of these were reviewed to help establish the popular context of the Project.

Summary of A-LP Project Stakeholders

To reiterate, and as demonstrated above, researchers have identified the major federal, local, state, tribal, and Project opponents involved in the A-LP Project. These organizations provided the rationale for the individuals from whom I drew my research interviews. The U.S. Bureau of Reclamation (Allen, 1997; Eidem, 2012; Ellison, 1998, 2009; Ellison & Newmark, 2010; Gosnell, 2000; Mann, 1988; Pollack & McElroy, 2001) and the Environmental Protection Agency (Allen, 1997) through the U.S. Fish and Wildlife Service (Allen, 1997; Eidem, 2012; Ellison, 1998, 2009; Ellison & Newmark, 2010; Gosnell, 2000; Mann, 1988; Pollack & McElroy, 2001) ESA process were the major federal players involved in the A-LP Project. Because researchers have thoroughly examined the U.S. FWS's determination of endangered species associated with the Project, this organization as well as the EPA were omitted from this study. From a state perspective, the literature indicated both the states of Colorado and New Mexico (Allen, 1997; Gosnell, 2000; Leeper, 1997; Pollack & McElroy, 2001) as major A-LP Project stakeholders, as well as the Colorado Water Conservation Board (Ellison, 1998, 2009;

Ellison & Newmark, 2010; Gosnell, 2000; Mann, 1988), Colorado Water Resources and Power Development Authority (Mann, 1988), and the San Juan Water Commission (Allen, 1997; Eidem, 2012). At the local level, in addition to the Ute Tribes and Navajo Nation (Allen, 1997; Eidem, 2012; Ellison, 1998, 2009; Ellison & Newmark, 2010; Gosnell, 2000; Leeper, 1997; Mann, 1988; Pollack & McElroy, 2001), the Animas-La Plata Water Conservancy District (Allen, 1997; Ellison, 1998, 2009; Ellison & Newmark, 2010; Gosnell, 2000; Mann, 1988;) and the Southwestern Water Conservation District (Gosnell, 2000) were identified. Key A-LP Project stakeholder opponents included the Environmental Defense Fund (Ellison, 1998, 2009; Ellison & Newmark, 2010), Four Corners Action Coalition (Ellison, 1998, 2009; Ellison & Newmark, 2010), [Sierra Club] Legal Defense Fund (Allen, 1997; Eidem, 2012; Gosnell, 2000), Southern Ute Grassroots Organization (Allen, 1997), and Taxpayers for the Animas River (Gosnell, 2000).

U.S. Water Management and Policy

A review of the literature related to U.S. water policy yielded material spanning decades. Much of this research focused on the history of water development. A synthesis of United States water management and policy history is presented below to provide a background and time-based context for the A-LP Project and this associated research effort. Similar to the background section of the Project presented earlier, my goal is to provide enough historical information on U.S. water policy development to establish the presence, in the literature, of elements of the three streams model, which have not previously been combined together in the way of Kingdon's (1995) theory.

The Early Years—Up to the 19th Century

In the earliest days of United States nationhood, there was no formal water management or policy beyond that of nation building and settling the West (Apple, 2003; Gerlak, 2005). Early water policy was merely a part of the general thinking that the country was a great frontier to be conquered for economic development purposes (Hurst, 1982). From the birth of the United States in 1776, local governments and states determined their water priorities (Gerlak, 2005; Holms, 1972), while the federal government focused on territorial development and expansion (Gerlak, 2005; Reimer, n.d.).

It was not until the 19th century that U.S. water management and policy began to develop in a more orderly fashion (Apple, 2003). The specific focus of federal policy was on expanding irrigation in the West, improving navigation, and reducing flood damage (Cody & Carter, 2009). With the establishment of the U.S. Army Corps of Engineers in 1802 (McCool, 2005) and their subsequent Navigation Improvements Act of the same year, the first formal federal water planning effort began (Holms, 1972).

Large Water Projects—Early to Mid-20th Century

Prior to the 1950s, water resources development policy was historically explained as subsystem government where local water interests, federal water construction agencies, and public works committees combined to dominate water project decision-making processes (Cortner & Auburg, 1988; Schad, 1998). Before the 1950s, too, the initial emphasis was on water law and organization structure, whereas after this time "the politics of water development and use began to receive an increasing amount of

attention" (Fox, 1976, p. 743). It was in this time period, 1956, that Congress approved a feasibility study or policy stream through the Colorado River Storage Act to move water from the Animas River to the La Plata River drainage.

Budget Constraints and Environmental Concerns—1960s to the 21st Century

In the mid-20th century there were continued accusations that water policy involved pork barrel politics (Bromley, 2000; Ellison, 2009; Gerlak, 2005). Therefore, beginning in the 1960s, with the advent of more constrained federal budgets and increased environmental concerns (Holms, 1972; Reisner & Bates, 1990), views began to change about the big dam era, and projects came under increased scrutiny through more rigorous cost benefit analysis (Bromley, 2000; Ellison, 1998, 2009; Ellison & Newmark, 2010; U.S. BOR, n.d.). In 1968 Congress furthered the policy stream by authorizing the construction of the A-LP Project in the Colorado River Basin Project Act (U.S. BOR, 1979, 2008a, 2012a). In the late 1970s President Carter (1977-1981) was the first president to thoroughly examine all federal water projects with his 1977 National Water Policy Review (Bromley, 2000), and in 1978 he developed his Water Policy Initiatives (Viessman, 1998a). These initiatives were intended to stress conservation, economic viability of projects, environmental protection, and federal-state cooperation. The A-LP Project was halted during this time period (U.S. BOR, n.d.; U.S. BOR, 2012a) and subject to all of these political stream initiatives.

At the beginning of his presidency, Ronald Reagan (1981-1989) established a Cabinet Council on Natural Resources and Environment with the charge of addressing water-related issues (Viessman, 1998a). Later, in 1986, he signed the Water Resources

Development Act, which required a 50% cost-sharing with both Corps and Reclamation projects (Ellison & Newmark, 2010; Gerlak, 2005). As mentioned previously, the A-LP Project was subject to these political stream cost-sharing agreements. It was in the 1980s, too, that a growing national concern about groundwater depletion began to emerge, and beginning in the 1990s there was increased attention to water quality issues (Gerlak, 2005). Primarily due to funding priorities, the first Bush (1989-1993) administration and ultimately the Bush, Jr. (200-2008) administration both exhibited a "lack of initiative and creativity" (p. 242) when it came to water management and policy leadership. President Clinton's (1993-2001) administration emphasized a partnership approach. With his presidency came a significant federal shift in water policy to one of conservation, efficiency, ecological issues, management, and restoration as opposed to strictly structural solutions (Gerlak, 2005). It was also in the 1990s period that water scarcity issues begin to emerge more frequently in the literature (Gleick, 1993; Reisner & Bates, 1990; Rogers, 1996; Simon, 1998).

Water Scarcity and the 21st Century

At the beginning of the 21st century, *Water 2025* was initiated at the federal level to address water-scarcity issues and prevent crisis and conflict in the West (U.S. Department of the Interior, 2003). The report identified aging infrastructure, growth, and water shortages as realties that are creating these water crises and conflicts (p. 4). The report laid out six principles to address these problems:

1. Existing water rights must be recognized and respected.
2. Infrastructure needs to be maintained and upgraded.

3. Water conservation and efficiency should be enhanced.

4. Collaborative and market-based approaches need to be used.

5. More water treatment technology and research should be pursued.

6. Institutional barriers to storage and delivery of water should be removed (p. 3).

Since publication of this report, the 21st century has experienced an upsurge in water policy-related literature—most of which pointed to water crisis and scarcity issues (Alsace, 2003; Barlow, 2007; Christian-Smith, et al., 2012; Chronicles Group, 2013; Dosi & Easter, 2000; Gerlak, 2005; Glennon, 2002, 2009; Ingram & Malamud-Roam, 2013; Jorns, 2007; Maxwell, 2011; McDonald & Jehl, 2003; Midkiff, 2007; Pearce, 2006; Solomon, 2010; Waterman, 2010).

Additional U.S. Water Management and Policy Research

At present, the literature yields more than two centuries of water resource development and management and a plethora of historical information, some of which was just discussed. The literature also highlights major problem streams such as serious water quantity and scarcity issues, which were discussed in Chapter 1. Another major theme or problem stream that emerged was the fragmented nature of U.S. water policy (Cody & Carter, 2009; Dosi & Easter, 2000; Feldman, 2007; Gerlak, 2006; Harrison, 1986; Ingram & McCain, 1977; Schad, 1998; Viessman, 1998a, 1998b). As Cody and Carter (2009) stated, more than two centuries of water resource development and management have "resulted in a complex web of federal and state laws and regulations, local ordinances, tribal treaties, and contractual obligations" (p. 2). As indicated in the literature, this complex web or fractured nature of U.S. water policy has been criticized

for decades. Ingram and McCain (1977) pointed out that water policy has been criticized by academia for quite some time (p. 454). According to these authors, economists believe project beneficiaries have not repaid the costs of water development but have transferred the costs to taxpayers. The engineering and hydrology disciplines claim that river basins have been overbuilt and that projects are situated by political rather than physical boundaries. Public policy and administration scholars believe there are huge duplications and overlaps of efforts among various agencies and have called for consolidation (p. 454). The same authors viewed the fragmented nature of water policy as being based on attitudes and perceptions about water in general and that "prolonged water shortages and droughts may be a catalyst to change attitudes" (p. 454). As they contended, when physical limits of water are reached the political arena or political stream will change. As Chapter 1 coverage of growth and water scarcity demonstrated, perhaps the catalyst to change attitudes has arrived, thereby potentially opening a policy window.

Another major theme or problem stream to emerge in the literature was the need to develop a national water policy (Apple, 2003; Christian-Smith, et el., 2012; Cody & Carter, 2009; Fairweather, 1980; Galloway, 2011; Gleick, 2005; Harrison, 1986; Schad, 1989; Viessman, 1998a, 1998b). Ahuja (2009) referred to current U.S. water policy as chaos (p. xiii), and Gerlak (2005) called it "schizophrenic" (p. 241). In an effort to establish a national water policy, the research consistently pointed to the need for a new policy stream—a water policy coordinating entity/institution (Fox, 1976; Gleick, 2005; Harrison, 1986; Schad, 1998) or "national water commission to assess future water demands, study current management programs, and develop recommendations for a

comprehensive strategy" (Cody & Carter, 2009, p. 4). Alsace (2003) believed that national leadership was necessary to overcome shortsighted policies lacking long-term strategic vision. One example of this could be the groundwater overpumping issue that was discussed in Chapter 1.

While the majority of research pointed to the fragmented nature of U.S. water policy and the need to develop something nationally, including establishing an overseeing commission, entity or institution, there was another body of literature that countered this. In other words, additional solutions or policy streams emerged. Feldman (2007), for example, pointed out that water policies are based on custom, precedent, and tradition. Others viewed water policy as inherently local (Dziegielewski & Kiefer, 2006; Thompson, 1999) or regional and should therefore be developed and managed at the level of government closest to the problem. Harrison (1986) believed that the bottom-up approach to water management would be most effective. This A-LP Project research is a case study in the bottom-up approach. Related to local management were calls for a new regionalism approach to water administration based on ecosystems and watersheds (Apple, 2003; Gerlak, 2006; Holms, 1972; Postel, 1996, 2005, 2007). Fox (1976) emphasized the need for case studies of regional situations "in order to assess institutions that apply nationwide" (p. 757). This A-LP Project case study research is an example of regional water management and planning, and could have nationwide applicability and implications. Dziegielewski and Kiefer (2006) contended that federal involvement in water issues could increase in the future "if the anticipated water resources challenges gradually overwhelm the capacity of most local regions and state governments to deal

with them" (p. xii). Again, based on serious water scarcity issues presented in Chapter 1, possibly that time or policy window has come.

In an effort to solve or at least address the fractured nature of U.S. water policy, Cody and Carter (2009) pointed out that "countless commissions, councils, and studies have called for new directions in water policy and better planning, evaluation, and coordination" (p. 3). Also, there is a need for more federal-state cooperation (Gerlak, 2005; Viessman, 1998a). Gerlak (2005) contended that this federal-state relationship or the conflict between local autonomy and federal supremacy is at the heart of water management conflicts and problems (p. 231). This A-LP Project case study demonstrates how federal, local, state, tribal, and Project opponents worked on a problem stream in an effort to solve water management issues in southwestern Colorado.

Additional themes to emerge in the literature related to topics such as conservation, economics, ecosystem management, subsidies, water law, and water quality. The literature revealed the need for increased water conservation measures (Fairweather, 1980; Gleick, in McDonald & Jehl, 2003; National Water Commission [NWC], 1973; Postel, 1985, 1992; Thompson, 1999; Viessman, 1998a). Also, many experts believed that water and water services should be treated as an economic good (Dosi & Easter, 2000; Hall, 1998; Harrison, 1986; Schilling, 1998; NWC, 1973) and that economic principles should be used to better manage the resource (Dosi & Easter, 2000; Harrison, 1986; NWC, 1973; Thompson, 1999). Chief among these economic principles was the recommendation to use *water markets* (Dosi & Easter, 2000; Huffman, 2008; Reisner, 1986; Reisner & Bates, 1990; Viessman, 1998a). Cech (2010) defined water

markets as the lease or sale of water rights in a market-based system (p. 446). Another literature theme was that water management should more fully embrace an entire ecosystem or watershed approach (Apple, 2003; Postel, 1996, 2005, 2007). There were also recommendations to eliminate subsidies (Gleick, 2005; Reisner, 1986) and a number of researchers recommended changing or modernizing state's water laws to better meet modern problems and social needs (Aiken, 1980; Apple, 2003; Glennon, 2005; Reisner & Bates, 1990). A leading authority, Glennon (2005), contended that the fundamental problem with water policy is existing western U.S. water laws that encourage urban sprawl and wasteful irrigation.

In addition to the studies referenced above, I found little else in the relevant peer-reviewed literature related to the U.S. water policy. A review of the dissertation and thesis' databases literature on U.S. water policy provided few results and none that were useful for this research effort. The majority that did surface related to water quality issues such as chlorine and fluoride, and many focused on economics or water law. That so few dissertations and theses related to U.S .water policy have been published was surprising, considering that experts have called for a water policy reforms for decades. Similar to the A-LP Project literature review, non-peer-reviewed information on U.S. water policy abounds. For purposes of this study, many of these were reviewed to help establish the popular context of the topic.

On a final note related to scholarly research on water management and policy, Kingdon (1995) indicated that following interest groups, academia is one of the most important nongovernmental sectors (p. 53). Those in "the academy" who often point out

deficiencies and flaws in a given system and recommend policy stream solutions, he referred to as an "outside panel of learned wizards" (p. 54). Ideas from academia are discussed and used regularly in Washington, DC. Administrative agencies and congressional committees regularly rely on the expertise of analysts and researchers in a variety of venues to include advisory panels, hearings, and meetings (p. 54). Kingdon indicated, however, that it is a long, slow process to move from scholarly recommendations to actual bills, legislation, or solutions. He further contended that policy-makers tend to listen to scholars most when their research and proposals are directly related to social issues that are already occupying decision-makers' attention (p. 56).

Summary

A review of the literature related to Kingdon's (1995) three streams theory, the A-LP Project, and water policy was presented in this chapter. The chapter began with the strategy used for searching the literature, which was successful in leading to some key documents, research, and scholarship. This was followed by a review of the literature related to Kingdon's theoretical framework, and I was unable to locate any research that linked the policy streams theory to the A-LP Project or to water policy development over extended periods of time. A number of Kingdon's three streams, policy windows, and entrepreneurs were identified in the A-LP Project literature. Moreover, the major organizations involved in the Project were identified in the literature, and, thus, my choice of stakeholder institutions is trustworthy. All of these materials establish a framework within which narratives from stakeholders can be placed.

Based on the literature search, what is known about the A-LP Project is its extensive history, the economics associated with the irrigation component, and much detail on the cultural mitigation and ESA processes. Additional themes related to tribal water rights settlements, and while there were a few contrary views, there was fairly substantial criticism of the A-LP Project.

In addition, while a great deal of energy has been expended and much has been written on the topic of U.S. water policy, research does not address the actual adoption of a national water policy. The majority of researchers agreed that institutional reforms and improved coordination of efforts are key to overcoming the fragmented nature of U.S. water policy and management. Most also agreed that there should be a national coordinating entity to address this problem. Another body of literature countered the national water policy and overseeing institute recommendations. These scholars contended that it is a local or regional issue but that there should be more local, state, and federal coordination. This A-LP Project study fits within U.S. water policy research by filling a knowledge gap related to the bottom-up approach; regional water management and planning; and how federal, local, state, tribal, and Project opponents worked to solve a long-term, ever-changing water policy challenge in southwest Colorado. In addition, a review of the literature suggested the time may be approaching for some policy windows to open: when physical limits of water are reached the political arena will change; water resources challenges may be overwhelming the capacity of local and state governments to deal with them, thereby increasing the need for federal involvement; and policy makers may begin to take action on numerous decades of scholarly recommendations for changes

in water policy and management. The water policy literature review provided a solid basis for framing the research problem in terms of action, complexity, and need that can be studied at the local and regional level.

All of the aforementioned gaps in the literature provide the basis for this case study research. There is a need to gather and document A-LP Project narratives from interviews to determine if policy streams emerged to open policy windows that mobilized individuals and organizations around the common pool resource of water. Based on all of this evidence, the problem is significant, it is grounded in the literature, it is original, and it is amendable to scientific study. The details on the methodology used to conduct this research are provided in Chapter 3.

Chapter 3: Research Method

Introduction

As presented in Chapters 1 and 2, the purpose of this case study research is to gather A-LP Project stakeholder narratives from interviews to determine if and how they apply to the validity of Kingdon's (1995) three streams theory. The stakeholder narratives from this A-LP Project case study could provide insight for future planning and policy efforts by identifying key factors involved in opening policy windows to mobilize individuals and organizations around the common pool resource of water. In this regard, there is a need for narrative data to understand how policy windows open that allow action to meet water supply needs.

This chapter begins with the research design and rationale, followed by the role of the researcher and then methodology. The method section includes a number of subsections: procedures for recruitment, participation, and data collection; historical documents and interview data gathering protocols; and a data analysis plan. Issues of trustworthiness and a summary of the research method are presented at the end of the chapter.

Research Design and Rationale

Based on interview data, the central research question was the following: Did policy streams (Kingdon, 1995) diverge, emerge, and join over the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water? To answer this question, this research design and rationale were based on the premise that there is no single best method to acquire information and that knowledge

comes in many forms through a variety of methods. According to McNabb (2008), a number of different theoretical models or methodologies guide the research design and rationale choices researchers make in their studies. Among others, the most common are positivism and postpositivism.

Positivism is based on the premise that only experience can inform one about reality (Stahl, 2003, p. 2879). Positivism is empirically designed research based on math, statistics, and the scientific method. The scientific method involves establishing a hypothesis, experimentation, observation, and quantification. The scientific method is based on what can be observed or tested (McNabb, 2008). McNabb (2008) defined positivism or quantitative research to include causal designs (single and multifactor experiments), descriptive designs (field surveys and mathematical models), and exploratory designs (in-depth and focus group interviews). A detailed explanation of each of these is not provided here because, as will be discussed next, I did not use the positivist approach in this study.

As opposed to positivism, postpositivism is based on the premise "that reality can never be precisely known because of the intervention of the researcher's prior experiences and knowledge limitations" (McNabb, 2008, p. 50). McNabb (2008) defined postpositivism or qualitative research to include critical design (action research and participatory studies), explanatory designs (case and ethnographic studies), and interpretive designs (hermeneutic and semiotic studies). Critical design research is used for social critique using action research or participatory studies. Action research examines social systems to change them, while "a primary goal of participatory research

is to effect a fundamental, emancipating change in a society" (p. 338). Explanatory designs focus on a phenomenon using case studies or ethnographic research. As Creswell (2007) indicated, case study research "explores a bounded system . . . over time, through detailed, in-depth data collection involving multiple sources of information and reports a case description and case-based themes" (p. 73). Ethnography is a method used to study different cultures. Finally, interpretive design methods are employed to develop meaning of social events or actions using hermeneutic or semiotic studies. Hermeneutic research focuses on social phenomena interpretation, while semiotic research is generally associated with the interpretation of signs and symbols.

Because the current research focused on the more than 50 years of planning and construction of Lake Nighthorse, the most appropriate research method for this dissertation was postpositivism (qualitative) using an explanatory design through a case study approach in an effort to identify whether policy windows opened to mobilize individuals and organizations around the common pool resource of water. According to Yin (2014), case study research is used to better understand individual, group, organizational, social, political, and related phenomena (p. 4). These were all goals of this A-LP Project case study.

For purposes of this research, *case study* is defined as a strategy of inquiry to explore, in depth, multiple written and interview narratives from stakeholders involved in the A-LP Project to determine whether stakeholders identify policy windows as essential to the mobilization of individuals and organizations around the common pool resource of water. This case was bound by the A-LP Project itself and its associated timeframe.

Benefits of the case study approach are its ability to build and construct theory "based on the need to understand a real-life phenomenon" (Riege, 2003, p. 80). In addition to theory, advantages of the case study method are its applicability to real-life situations and public access through written reports (Soy, 1997). Disadvantages of the case study approach include the possibility that no theory emerges and lack of control over variables and events.

Role of the Researcher

I had multiple roles in this research project. First, I came to the study with some direct and expert knowledge of the A-LP Project. I have lived and worked in the nine-county Dolores/San Juan River Basin for over two decades. I have toured (including aerially) the basin extensively, and I am familiar with all of the area U.S. BOR reservoirs and most of the rivers. In addition, I have knowledge of the water agencies and providers in the basin and maintain extensive professional contacts. None of these professional relationships, however, were instructor or supervisory. Also, to provide a comprehensive and objective case study explanation of the A-LP Project narratives, I acted as an analyst and investigator of archival records.

I reviewed a multitude of sources to provide a synthesized compilation of the A-LP Project, including stakeholder narratives. Examples included archival records and document reviews, which were described in detail in Chapter 2, as well as interviews. As an interviewer, I talked to stakeholders involved in the A-LP Project using both guided and open-ended questions. I conducted a content analysis of the interview results by first word processing the narratives. I then coded the data to identify themes that emerged in

order to address the central research question. The ultimate goal was to produce a useful, unbiased document that would contribute to positive social change. Finally, I acknowledged and recognized my biases and fully disclosed that I worked as a contractor with a number of major organizations that had been involved with the A-LP Project (Animas-La Plata Water Conservancy District, Southwestern Water Conservation District). Throughout the study, however, I maintained a heightened awareness about the propensity for subjectivity and strove for empathetic neutrality. Additional methods to guard against bias included extensive checks of my work by unbiased reviewers, as well as the interviewees themselves.

Methods

This section provides an overview of the methods or procedures I used for this study. The methodology, or the logic and design using case study and narrative analysis, was discussed previously in the research design and rationale section. Participant selection is outlined in this section, as is instrumentation and the interview instrument. In addition, procedures for recruitment, participation, and data collection are discussed, as well as the analysis plan.

Procedures for Recruitment, Participation, and Data Collection

Interview participants were selected for this instrumental case study by identifying a stakeholder from each of the major organizations involved in the A-LP Project. These organizations were identified in Chapter 2 and provided the rationale for my selection of interviewees. One participant was selected from each of the major organizations involved with the Project based upon expert opinions and

recommendations. Selecting participants on the basis of expert opinions and recommendations is a method of sampling known as *purposeful sampling*. Creswell (2007) described purposeful sampling as a method where "the inquirer selects individuals and sites for study because they can purposefully inform an understanding of the research problem" (p. 125). Purposeful sampling was selected because to inform this case study, participants needed to be knowledgeable about the A-LP Project.

According to Yin (2014), purposeful sampling is common in case study research. It is used to select a case that will illuminate the theoretical propositions of the case study (p. 42). Per Yin, too, the most important thing to consider when selecting a research method is the type of question being asked (p. 11). "How" and "why" questions are likely to favor using a case study. For this research, I was interested in discovering whether policy windows opened in the Kingdon (1995) tradition to mobilize individuals and organizations around the common pool resource of water; and if they did, how and why they opened.

For this research effort, *stakeholders* referred to those with the longest organizational involvement and highest seniority related to the Project, thereby representing a deep understanding of the A-LP Project itself. As demonstrated in Chapter 2, researchers have identified the major federal, state, and local organizations involved in the A-LP Project. The U.S. Bureau of Reclamation through the Fish and Wildlife Service ESA process was the major federal player involved in the Project. From a state perspective, the states of both Colorado and New Mexico are major A-LP Project stakeholders, along with the Colorado Water Conservation Board, Colorado Water

Resources and Power Development Authority, and San Juan Water Commission. At the local level, in addition to the Ute Tribes and Navajo Nation, the Animas-La Plata Water Conservancy District, Southwestern Water Conservation District, and Project opponents were all were identified as A-LP Project stakeholders. Because researchers have thoroughly examined the FWS's determination of endangered species associated with the Project, this organization as well as the EPA were omitted from this study. Therefore, and based on the preceding, interviews were conducted with key individuals, or those with the longest involvement and highest seniority with the A-LP Project, from the following groups:

- Animas-La Plata Water Conservancy District.
- Colorado Water Conservation Board.
- Colorado Water Resources and Power Development Authority.
- Navajo Nation.
- San Juan Water Commission.
- Southern Ute Indian Tribe.
- Southwestern Water Conservation District.
- Taxpayers for the Animas River.
- U.S. Bureau of Reclamation.
- Ute Mountain Indian Tribe.

The criteria used to select an individual from each of the major organizations included willingness to participate in the study and knowledge of the A-LP Project based on the longest organizational involvement and highest seniority related to the Project.

Animas-La Plata Project experts were consulted to help identify individuals who had the longest involvement and seniority associated with the Project. In addition, organizations were contacted and asked who these stakeholders might be, and this question was also asked as part of the interviews. With the longest involvement and seniority criteria met, I anticipated that interviewees would have had a deep understanding of the A-LP Project itself. I verified that potential interviewees met these criteria based upon experts' first-hand knowledge, my own job experience, and input from the major organizations involved with the Project and the interviewees themselves.

One stakeholder from each of the major organizations involved in the A-LP Project was interviewed, with 11 stakeholders interviewed in all. Creswell (2007) found that in narrative research, sample size can range from a single individual to "a larger pool of participants" (p. 126) in an effort to develop a collective story. Because I was interested in the collective story of the A-LP Project based on representative stakeholder organizations, the rationale for this study's sample size was logical, and the size was manageable. To extend much further beyond these boundaries might have made the study unable to fit within a reasonable timeframe and data collection realm. Once all of the potential interview participants were selected, they were contacted through a combination of formal letters, emails, and phone calls. Ultimately, each of the interviews took approximately one hour.

The follow-up plan, which I intended to follow if recruitment resulted in too few participants, was not needed. There was no formal debriefing after the interviews; rather, participants were thanked for their time and given my contact information should they

have future questions. Follow-up procedures included contacting interviewees for clarification or if questions arose on my part when transcribing the data. In addition, interviewees were provided with the opportunity to review their respective interview transcripts.

Historical Documents and Interview Data-Gathering Protocols

As presented in Chapters 1 and 2, historical and legal documents were used as a source of data related to the history of the A-LP Project. Most were official government documents from the U.S. Bureau of Reclamation. Given that many of them were signed into law, their reputability is theoretically established. The U.S. BOR documents represent some of the best sources of data from an agency perspective because this was ultimately this agency's Project to build. In addition to document reviews, other data collection measures and instruments included interview protocols (see Appendix A), as well as the associated audio recordings and transcriptions of the interviews themselves. With nearly 20 interview questions, there were sufficient data to answer the central research question. As discussed in Chapter 2, Kingdon's (1995) three streams—problem, policy, and political—helped to identify the appropriate variables to be used for the A-LP Project interview questions. It was also demonstrated in Chapter 2 that there is a gap in the academic literature related to A-LP Project narratives and water policy. The interview protocols are my intellectual property and were reviewed multiple times prior to the start of this study by local policy and Project experts familiar with the A-LP Project. With their comments incorporated, the protocol was adequately comprehensive.

Data Collection and Analysis Plan

I collected data from a multitude of sources for this research effort. These included database searches (EBSCO, Google Scholar, ProQuest, and Sage), organizational materials, and websites. Stakeholder interview data were connected to the central research question: Did policy streams (Kingdon, 1995) diverge, emerge, and join over the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water? As part of the content analysis process, I transcribed and coded the interview data for emerging categories and themes.

I surveyed the AL-P Project documents and related scholarly and popular literature since approximately 2010 and continued that process until this project was complete. In addition, I collected data through interviews. As mentioned previously, each interview took approximately one hour. To make the interviews as convenient for the interviewees as possible, they were conducted in a meeting location of the interviewee's choice, including three that were conducted virtually via Skype. No issues of confidentiality arose. The questions were intended to gather narratives about the A-LP Project and were presented to the interviewees in that way. Finally, and as mentioned previously, interviews were digitally recorded and transcribed. I also took some handwritten notes but they were used for my purposes only and were not included in the transcriptions.

In a review of 3 decades' worth of the published data on transcription, Davidson (2009) described transcription as a process that is interpretive, representational, and selective (p. 37). Davidson contended that all transcripts are selected. In this regard, I

used Ochs's (1979) seminal work, which indicated that a useful transcript is one that is selective (p. 44). Therefore, when transcribing, I omitted extraneous information, as well as idiosyncratic elements of speech, such as pauses and stutters. To help address issues of transcription quality, I made sure that my digital recorder was in good working order. In addition, I provided all interviewees the opportunity to review their respective interview transcriptions for accuracy and clarification.

Issues of Trustworthiness

Issues of research trustworthiness include credibility, dependability, confirmability, and transferability of the study. Credibility relates to whether the study results accurately portray the participants meaning (Creswell, 2007, p. 206). Credibility for this research was established by having interviewees review their transcripts. Dependability refers to the reliability of the research and whether the study has been conducted with reasonable care (Miles & Huberman, 1994, p. 278). Methods to determine dependability include clear research and interview questions, collection of data across a full range of respondents, explicitly stated role of the researcher, and whether there was an established peer review process (p. 278). As discussed previously, the research question and interview protocol were reviewed multiple times prior to the start of this study by local policy and Project experts familiar with the A-LP Project. With their comments incorporated, I believe that the research question and protocol was adequately clear and comprehensive. As presented in Chapter 2, collection of interview data across a wide range of stakeholder respondents was established, and the role of the researcher was explicitly stated and discussed previously in this chapter. The peer review

process for this study included historical A-LP Project review, interview protocol review, and interviewee review of their transcription as mentioned previously. Both credibility and dependability are forms of internal validity study findings (Miles & Huberman, 1994). Many scholars contended that internal validity of research will be more accurate if it is based on multiple sources of information (Creswell, 2007; Miles & Huberman, 1994; Patton, 2002; Yin, 2014). This is known as triangulation and includes sources such as archival records, documents, interviews, and observations (Yin, 2014, pp. 120-121). I used all four of these methods in my research to establish internal validity. Confirmability and transferability are external validity tests and relate to whether study findings from one research effort can be generalized to other situations (Yin, 2014, p. 238). Methods such as thick description and variation in participant selection are common external validity tests (Miles & Huberman, 1994), and I used both for this A-LP Project research. On a final note related to internal and external validity testing, Patton (2002) referred to such terms as *balance*, *completeness*, and *fairness*. In this regard, my research aimed for all of these by presenting credible, honest, meaningful, and objective findings, free of bias.

Ethical Procedures

All policies and procedures related to ethical standards in research, including those required for gaining access to participants were strictly adhered to for this project. I followed the Walden University IRB guidelines and did not commence research until after receiving their approval (IRB approval number 12-19-14-0121511). The documents required by the IRB, including participant invitation letter and consent forms for adults,

are provided in Appendix B. The invitation letter and consent form were mailed or emailed to interviewees approximately two weeks before they were contacted to schedule an interview. In addition, I had copies of the consent forms with me at each of the interviews and participants were asked to sign it before we began. For the three interviews conducted virtually through Skype, the interviewees signed and scanned their consent forms to me. Each participant was offered a copy of the consent form, and it was provided to those who wanted it.

The invitation letter and consent forms addressed agreements to gain access to participants and resulting data through interviews, treatment of human participants, institutional permissions, ethical concerns related to recruitment materials and processes, and ethical concerns related to data collection. The treatment of interview data for this research is considered confidential. The interview data, both hard-copy and digital, was not disseminated or accessible to anyone but myself. The data will be kept under lock for a period of 5 years at an undisclosed location off-site of my home and office. After 5 years, the hard-copy interview data will be shredded and thumb-drive digital data destroyed. In relation to ethical issues of conducting research within one's own work environment, there were no conflicts of interest or power differentials involved. It should be noted, however, that there was a possibility that my time would be compensated while conducting the actual interviews. That was because some of the organizations that I work with were also interested in gathering the A-LP Project narratives for historic preservation purposes. In the end, however, discussions with Walden's IRB indicated that it would be best for the integrity of the study to conduct the interviews on my own time,

uncompensated. This was done, too, in an effort to obtain interviews with Project opponents, as well as those organizations that had concerns about current litigation. In this regard and as previously discussed, too, I acknowledged and recognized my biases and fully disclosed that I work in a contractor capacity with a number of the major organizations involved with the A-LP Project. This information was also provided in the consent form, which was signed by each interviewee. As mentioned previously, however, I maintained a heightened awareness about the propensity for subjectivity and strove for empathetic neutrality throughout the research. As mentioned previously as well, additional methods to guard against bias included extensive checks of my work by unbiased reviewers, as well as the interviewees themselves through their review of their respective interview transcriptions.

Summary

In this chapter I examined the research methods used for this study and was guided by the central research question, based on stakeholder interviews: Did policy streams (Kingdon, 1995) diverge, emerge, and join over the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water? The purpose of this case study research was to gather A-LP Project stakeholder narratives from interviews to see if and how they apply to the validity of Kingdon's three streams theory.

The chapter began with discussion of the research design and rationale. Because the research focused on the more than a half century of planning and construction of Lake Nighthorse (A-LP Project), the most appropriate research method for this study was

postpositivism, more specifically using an explanatory design through an instrumental case study approach to gather stakeholder narratives via interviews. The multifaceted role of the researcher was presented as analyst, expert knowledge, investigator, and writer. Here, too, I acknowledged potential biases.

Next, the study methods were discussed to include procedures for recruitment, participation, and data collection; historical documents and interview data gathering protocols; and the data analysis plan. Participant selection was based on purposeful sampling techniques. I conducted 11 interviews with stakeholders from the major organizations involved with the A-LP Project. In addition to document reviews, additional data collection measures and instruments included researcher produced and Project expert reviewed interview questions, plus digital recordings of the interviews. The analysis plan included document and literature reviews and those associated with the interviews themselves. The interviews were transcribed and coded for emerging categories and themes.

Issues of study trustworthiness were presented, to include the topics of credibility, dependability, confirmability, and transferability. Credibility was established by having interviewees review their transcripts. I used clear research and interview questions, collected data across a full range of respondents, explicitly stated my role as the researcher, and established a peer review process. I also used triangulation to establish credibility and dependability. The confirmability and transferability methods of thick description and variation in participant selection were used for this A-LP Project

research. My goal was to present credible, honest, meaningful, and objective findings, free of bias. The chapter ended with an overview of ethical procedures.

All policies and procedures related to ethical standards in research, including those required for gaining access to participants, were strictly adhered to. Interview data is considered confidential, and no conflicts of interest were found. The results of this study are provided in Chapter 4.

Chapter 4: Research Findings

Introduction

The purpose of this research was to gather stakeholder narratives and analyze them using Kingdon's (1995) policy streams theory to determine if the opening and closing of policy windows contributed to making the A-LP Project a reality. The central research question was the following: Did policy streams diverge, emerge, and join over the course of the A-LP Project to mobilize individuals and organizations around the common pool resource of water? In this chapter, I present the research findings. The research setting, demographic, and data collection information is provided first, followed by discussions of data analysis and issues of trustworthiness. Results are presented next, and the chapter concludes with a summary.

Setting

As indicated previously, this research incorporated narratives from interviews with stakeholders representing the major organizations involved in the A-LP Project. No known personal conditions influenced participants or their experience that might have affected interpretation of the study results. However, as the following email correspondence indicates, organizational conditions in the form of litigation might have initially influenced interviewee participation in the study:

> I have a question for you on the timing of your research. As you may know, there is currently some active litigation regarding the A-LP Project water rights. Has that litigation made your research more difficult, or have you already addressed concerns about how answers to the interview questions or the publication of your

> research might impact that litigation? If so, it would be helpful for me to know how you have resolved this issue with other entities. (Confidential, personal communication, January 26, 2015)

These types of concerns were addressed by assuring potential interviewees of their anonymity and that the research results would not be shared until the final study was published and publically available. Ultimately, interviews were conducted with representatives from all the originally identified organizations.

Demographics

From February 2015 through early June 2015, interviews were conducted with key individuals—those with some of the longest involvements and highest seniority with the A-LP Project, from the following organizations:

- Animas-La Plata Water Conservancy District.
- Colorado Water Conservation Board.
- Colorado Water Resources and Power Development Authority.
- Navajo Nation.
- San Juan Water Commission.
- Southern Ute Indian Tribe.
- Southwestern Water Conservation District.
- Taxpayers for the Animas River.
- U.S. Bureau of Reclamation.
- Ute Mountain Indian Tribe.

One interview was conducted with a representative from each of the above-listed organizations except Taxpayers for the Animas River, with which two interviewees participated. No noteworthy participant demographics or characteristics were relevant to this study. All interviewees were adults over the age of 18, and each provided verbal and written consent to participate in the research. In addition, tribal approvals were obtained to conduct interviews with those representatives. Although a handful of women played a significant role in the development of the A-LP Project, all of the interviewees were men, and each proved to have a great deal of familiarity with the Project. As responses to Question 6 will demonstrate, the lack of female representation among the interviewees is consistent with the historically male-dominated field of water supply planning and policy development. Responses to Questions 1 and 2 will establish familiarity with the Project.

Data Collection

Eleven interviews were conducted with key individuals from the primary organizations involved with the A-LP Project. The data collected were derived from responses to a series of 19 interview questions, which can be found in Appendix A. One interview was conducted with each of the participants at a location of his choosing, and the interviews averaged approximately one hour. Three of the interviews were conducted virtually via Skype with subjects located at distances further away. The interview was audio recorded, and data were collected with handwritten notes. The audio-recorded interviews were individually transcribed and provided either electronically or as hard copies to the interviewees for comment and review. All but one of the participants indicated that they were interested in reviewing their transcription. All comments and

changes provided were incorporated. There were no variations in data collection from the plan presented in Chapter 3, and no unusual circumstances were encountered related to data collection.

Data Analysis

Once the data collection steps were complete, I followed Saldana's (2013) first and second cycle coding process to qualitatively evaluate the interviews. The first cycle method comprises seven categories, each with a number of subcategories. After thorough reviews of each of these, two were identified as specifically useful for public policy studies—*evaluation* and *versus coding*. Evaluation coding assigns judgments in an effort to evaluate the merit, significance, or worth of programs or policies (Saldana, 2013, p. 119). Versus coding is appropriate for policy studies that "suggest strong conflicts or competing goals within, among, and between participants" (p. 115). Therefore, based on the preceding, I used an evaluation code of positive (+) or negative (-) to identify in which vein participant comments were made. This was done in conjunction with descriptive coding to note the topic being referenced. I also used versus (VS) coding to identify strong conflicts that were evident in the data. Moreover, I used recommendation (REC) coding with a specific memo or actions for follow-up should any emerge. I also bolded text that struck me as a strong statement or one that stood out, including noteworthy phrases or quotes that I might want to use. Finally, I used color coding for comments that related to Kingdon's (1995) problem, policy, and political streams.

The first cycle coding method was applied to each of the interviewee transcriptions, which were laid out in single-spaced format on the left two thirds of the

page, with a wide right margin for coding and notes, which were capitalized. Once complete for each individual participant transcription, the results were combined and merged into one document for second cycle *axial* coding analysis. The goal of axial coding is to determine which research codes are dominant (Saldana, 2013, p. 218).

As will be demonstrated, the first and second cycle coding process proved to be successful in moving inductively from coded units to larger representations including categories and themes. Results of responses to each of the interview questions are presented in this chapter, including coding and themes that emerged from the data. There were no major qualities of discrepant cases in this research effort and approach, although at times comments could be multicoded. As an example, many comments could be coded positive or negative but if they were ultimately viewed as a potential solution, I used recommendation coding, the results of which are presented in Chapter 5. Simply put, to conduct the multicoding, I applied analysis, deductive reasoning, and subjective judgment.

Evidence of Trustworthiness

Both credibility and dependability are forms of internal validity of the study findings (Miles & Huberman, 1994). Many scholars contend that internal validity of research will be more accurate if it is based on multiple sources of information (Creswell, 2007; Miles & Huberman, 1994; Patton, 2002; Yin, 2014). This is known as *triangulation* and includes sources such as archival records, documents, interviews, and observations (Yin, 2014, pp. 120-121). I used all four of these methods in my research to establish internal validity. As presented in Chapter 3, credibility relates to whether the

study results accurately portray the participants' meaning (Creswell, 2007, p. 206). Credibility for this study was established by having interviewees review their transcripts for accuracy. *Dependability* refers to the reliability of the research and whether the study has been conducted with reasonable care (Miles & Huberman, 1994, p. 278). I used extreme care throughout the study to include clear interview questions, to collect data across a full range of respondents, to explicitly state my role as the researcher, to transcribe each recorded interview carefully, to follow an interviewee transcription review process, and to perform multiple cross-checks of the coding results. In addition, I checked and reviewed question responses, tallying and summarizing multiple times. There were no implementation difficulties or adjustments to either the credibility or dependability strategies as presented in Chapter 3.

Confirmability and transferability are external validity tests and relate to whether study findings from one research effort can be generalized to other situations (Yin, 2014, p. 238). Methods such as thick description and variation in participant selection are common external validity tests (Miles & Huberman, 1994), and I used both for this research. There were no implementation difficulties or adjustments to either the confirmability or transferability strategies as presented in Chapter 3. On a final note related to internal and external validity testing, throughout this research effort I was continually diligent and worked hard to provide balanced, complete, and objective findings that were free of bias.

Results

Results of this research are presented in this section and reflect some of the challenges with narrative policy analysis. As an example, respondents might have made multiple comments related to an interview question, or few comments to no responses at all. In addition, interviewees might have provided comments not directly related to the referenced question, or responses might not have reflected categories or themes. Moreover, interviewee comments were frequently extensive. Responses often reflected strong emotions, opinions, and passion related to the question at hand and the A-LP Project. Frequently, this resulted in multiple pages of commentary associated with a single question. Appendix C provides general, short interviewee responses to each question. Based on the aforementioned, while 11 interviews were conducted, responses (provided in parentheses with corresponding federal [F], local [L], Project opposition [O], state [S], or tribal identifiers [T]) may vary from 11. Results are broken down below by interview question and include tabular, thematic, and coding analysis. The results are presented either descriptively, in table format, or with a combination of the two.

Q1. How long have you been involved with the Animas La Plata (A-LP) Project?

As indicated in Table 2, the length of interviewee's involvement with the Project ranged from a low of 11 to a high of 49 years, with the mean being 29 years. Cumulatively, participants represented 321 years of A-LP Project involvement. Table 3 presents the coding results from this question. As indicated, there were five negative and one political and problem stream coding assignments.

Table 2

Tabular Responses From Interview Question 1

Respondent		*n* (years)
Federal (F): U.S. Bureau of Reclamation		36
Local 1 (L1): Animas-La Plata Water Conservancy District		30
Local 2 (L2): San Juan Water Commission		49
Local 3 (L3): Southwestern Water Conservation District		34
Opposition 1 (O1): Taxpayers for the Animas River		32
Opposition 2 (O2): Taxpayers for the Animas River		19
State 1 (S1): Colorado Water Conservation Board		11
State 2 (S2): Colorado Water Resources and Power Development Authority		41
Tribal 1 (T1): Navajo Nation		25
Tribal 2 (T2): Southern Ute Indian Tribe		29
Tribal 3 (T3): Ute Mountain Ute Indian Tribe		15
	Total	321
	Mean	29

Table 3

Coding Responses From Interview Question 1

Coding	*n*	Comments and Quotes
Negative	5	• BOR excessively bureacratic (S2). • Illegal formation of a taxing agency (O1). • No taxpayer involvement (O1). • Undue influence of a law firm (O1). • Unrepresented board of directors (O1).
Politial stream	1	• Carter's (1977-1981) "hit list" (F).
Problem stream	1	• Tribal water rights (F).

Q2. What is your earliest recollection of the A-LP Project?

As indicated in Table 4, responses to Question 2 ranged from a low of 11 to a high of 70 years, with the mean being 39 years. In total, respondents represented 426 years of familiarity with the A-LP Project.

Table 4

Tabular Responses From Interview Question 2

Respondent	*n* (years)
F	54
L1	70
L2	54
L3	68
O1	36
O2	22
S1	11
S2	42
T1	25
T2	15
T3	29
Total	426
Mean	39

Seven of the 11 interviewees had heard about the A-LP Project prior to becoming directly involved with it. Four of the respondents knew of the Project for more than 50 years, with two of them indicating familiarity for 68 and 70 years. Both of these individuals represented local agricultural or farming-related entities. As L1 stated, "My dad homesteaded in 1903. Shortly after that they started trying to figure out a way to bring water from the Animas." As presented in Table 5, there were six problem stream-related comments and one conflict-associated coding that resulted from this question.

Table 5

Coding Responses From Interview Question 2

Coding	*n*	Comments and Quotes
Problem stream	6	• Water shortages for irrigation (L1, L2, L3). • Tribal water rights (T1, T2). • Municipal and industrial water (L2).
Conflict	1	• "They knew we were short of water but we got along pretty good until the New Mexico water compact was signed in 1922 and that took half of our water and sometimes all of the water" (L1).

Q3. What was the central problem(s) that the Project was intended to solve?

The thematic responses to Question 3 are provided in Table 6. Replies often indicated that there were multiple problems the A-LP Project was intended to solve.

Table 6

Thematic Responses From Interview Question 3

Responses	*n*
Tribal water rights (F, L3, S1, T1, T2, T3)	6
Additional water storage is necessary (L2, S1, T1, T2, T3)	5
Agricultural/irrigation-related (L1, L2, L3, S2, T1)	5
Municipal and industrial water supply (F, L2, T1)	3

Analyzed and interpreted to the next level, the thematic responses in Table 6 also represent three problem streams (agricultural, M&I, and tribal water) and one policy stream (the need for additional water storage). As presented in Table 7, further coding resulted in five negative comments, as well as one political stream and positive assignment.

Table 7

Coding Responses From Interview Question 3

Coding	*n*	Comments and Quotes
Negative	5	• "People were looking for a federally funded project to give them a private property right of water" (O2). • "There is no purpose or need for the Project" (O1). • "This is a religion to these water people, they think storage is good—doesn't matter the cost, someone else is paying for it" (O1). • "Through the advice of the lawyers and everybody we were told we ought to take the two Indian tribes in with us because they have a lot of pull. And they do—they pulled it right away from us" (L1). • "To get federal money for the local economy and to keep the water in Colorado" (O2).
Political stream	1	• In the 1980s BOR began reformulating the Project for tribal water rights (F).
Positive	1	• Collaborative process (S1).

Q4. In general, what were some of the biggest problems associated with the Project?

Interviewees indicated that the biggest A-LP Project problems were those associated with environmental issues. The thematic responses to Question 4 are provided in Table 8.

Table 8

Thematic Responses From Interview Question 4

Responses	*n*	Comments and Quotes
Environmental issues	7	• Endangered Species Act (L2, S1). • The size of the Project (S1, S2). • Fishery declines (O2). • National Environmental Policy Act (S1). • Water diversions from the river (O1).
High pumping costs (L1, O1, O2, S2)	4	
Congressional-related	3	• Authorization and funding (S1, T1, T3).
Tribal-related issues	2	• Cultural tribal resources, recreation, and trespassing issues (T2). • "How tribal resource funds are divided and having to use them in conjunction with non-Indian partners" (T2).

As illustrated in Table 9, Question 4 resulted in a variety of responses to include negative, political stream, conflict, and recommendation coding.

Table 9

Coding Responses From Interview Question 4

Coding	*n*	Comments and Quotes
Negative	4	• An economically unfeasible Project (O1). • Destroyed wildlife preserve (O1). • No demonstrated need for the Project (O1). • Taking water from downstream irrigators (O2).
Political stream	3	• During the Carter administration "the Water Resources Council had changed those rules to where the costs were escalated, but the benefits were not escalated and brought back in. So that was one of the major issues" (F). • "Perception of the need for food changed in the 1970s from food being a priority to recreation being a priority" (S2). • "Reclamation was not friendly toward environmental issues in the 1970s" (F).
Conflict	2	• "Eastern lack of understanding of the importance of water in the West" (T3). • "The lack of communication and collaboration with the environmental community" (L3).
Recommendation	2	• "Federal economic analysis does not look at escalated benefits of projects" (F). • "The process of getting the resource funds from the Bureau of Indian Affairs has not been easy" (T2).

Q5. In your view, what were the primary organizations involved in the A-LP Project at the local, state, and federal levels?

Question 5 was designed to determine participant's views of the primary organizations involved with the Project. Results break down by sector as follows:

Federal:

- Four Corners Commission, a federal group that was to promote development of the Four Corners (L2).

- U.S. Bureau of Reclamation (7; F, L1, L2, L3, S2, T2, T3).
- U.S. Department of Agriculture (F).
- U.S. Environmental Protection Agency (F).
- U.S. Office of Management and Budget (F).

State:

- Colorado Attorney General's Office (F, S1).
- Colorado Forum (F, L3).
- Colorado Water Congress (O1).
- Colorado Water Conservation Board (4; L1, L3, S1, S2).
- Colorado Water Resources and Power Development Authority (S2).
- New Mexico State Engineer's Office (L2).
- State of Colorado (S1).
- State of New Mexico (S1).

Local:

- Animas-La Plata Water Conservancy District (5; F, L1, L3, O1, S2).
- City of Aztec (L2).
- City of Bloomfield (L2).
- City of Durango (3; S1, S2, T1).
- City of Farmington (L2).
- Dolores Water Conservancy District (F).
- La Plata Conservancy District (NM; S2).
- La Plata Water Conservancy District (3; L1, S2, T1).

- San Juan Water Commission (3; L2, S2, T1).
- Southwestern Water Conservation District (6; F, L1, L3, O1, S1, S2).

Tribal:

- Native American Rights Fund (T2).
- Navajo Nation (3; S1, T1, T3).
- Southern Ute Indian Tribe (7; F, L1, L3, S1, S2, T1, T3).
- Ute Mountain Ute Indian Tribe (8; F, L1, L3, S1, S2, T1, T2, T3).

Environmental/Opposition:

- American Rivers (O2, T3).
- Earth Justice, formerly Sierra Club Legal Defense Club (4; F, O1, O2, T3).
- Environmental Defense Fund (F).
- Environmental Policy Institute (O1).
- Four Corners Action Coalition (O1).
- Friends of the Earth (O2, T3).
- National Wildlife Federation (F, O1).
- Taxpayers for Commonsense (O2, T3).
- Taxpayers for the Animas River (3; O1, O2, T3).

Other:

- Consulting firms (L2).
- County commissions (L2).
- Federal contractors (T2).
- Legal firms (O1).

- Lobbyists (O1).
- Media, the *Durango Herald* (F).
- Rural water districts (10 in NM; L2).

The following organizations met the predetermined prerequisite of being mentioned three times or more, and represent the major entities involved with the A-LP Project:

- Animas-La Plata Water Conservancy District.
- Colorado Water Conservation Board.
- Navajo Nation.
- San Juan Water Commission.
- Southern Ute Indian Tribe.
- Southwestern Water Conservation District.
- Taxpayers for the Animas River.
- U.S. Bureau of Reclamation.
- Ute Mountain Ute Indian Tribe.

With the exceptions of the City of Durango, Colorado, Water Resources and Power Development Authority (CWRPDA), and the La Plata Water Conservancy District (LPWCD), the major organizations identified by the interviewees was the same as those identified in the literature review. At this time there is no explanation for why the City of Durango and LPWCD did not surface in the literature review or why the CWRPDA was only mentioned by one interviewee. It should be noted that the Sierra Club was contacted for an interview but the person with the most familiarity with the Project was unavailable

for an interview and according to this individual no others were thought to have enough A-LP-Project background. As presented in Table 10, coding resulted in predominantly negative responses.

Table 10

Coding Responses From Interview Question 5

Coding	*n*	Comments and Quotes
Negative	4	• BOR and the fact that "the cities were getting different stories" (L2). • BOR was putting up alot of roadblocks--that was about the time they didn't want to build any more projects (L1). • "Reporting was somewhat negative in terms of advocating the environmental issues, but not the tribal or local water supply benefit issues from the Project. Basically the *Durango Herald* became an arm of the opposition" (F). • "There was about $45 to $50 million difference in that Project. My goal was to find out if we were getting a good deal or not…and we found out that we were not getting a good deal" (L2).
Conflict	1	• Colorado and New Mexico irrigators; "Small irrigators on the Animas in New Mexico were afraid the Project was going to steal their water, which it was designed to do if they ever get it online" (O2).
Positive	1	• Collaborations (S1).

Q6. Who were some of the major stakeholders involved in the Project from each of the organizations you mentioned?

Similar to Question 5, this query was designed to obtain interviewees opinions on who the major individuals involved with the A-LP Project were. Of the nearly 70 separate names mentioned, Fred Kroeger and Sam Maynes were mentioned most often with eight references each (L1, L2, L3, O1, O2, S1, T1, T3). Both represent local

perspectives, with Kroeger from the Southwestern Water Conservation District and Maynes from a Durango-based law firm. While Leonard Burch, past chairman of the Southern Ute Indian Tribe, was not extensively referred to, comments arose such as "Chairman Burch and Sam were quite a formidable team" (L2); "I think that Sam and Leonard were probably the two biggest visionaries in this" (T1); and "they and Fred are the big kingpins, the lions of the Project" (T1). Unfortunately, Fred was not available for an interview, and both Sam and Leonard have since died. There were numerous interviewee references to all of the people who have passed away throughout the long history of the A-LP Project process.

At the federal and state levels no names were mentioned that met the prerequisite of being referred to three times or more. At the local level, of the names referred to three or more times, one had passed away, and the other was interviewed for this research effort. No single name arose from the environmental sector, and of the two tribal individuals who were most often referred to, one was interviewed for this project but the other was unavailable. Of the 69 separate names mentioned, 58 were men (84%) and 11 were women (16%); however, none of the women were referred to three or more times, and only one was mentioned twice. In all, seven individuals whose names surfaced in relation to this question were interviewed for this research effort. Table 11 summarizes additional comments obtained from Question 6.

Table 11

Coding Responses From Interview Question 6

Coding	*n*	Comments and Quotes
Negative	4	• "The local stakeholder process…has been Gerrymandered" (O2). • "The tribes have been burned in the past by people doing this sort of thing. . . . how we're going to do this great report and then they just trashed them. Particularly movies and newspaper reports—media" (S2). • "The undemocratic process of the A-LP board" (O1). • "We had to fight our own tax money dollar-for-dollar that was being used against us and against our own interests" (O1).
Recommendation	2	• "Representatives of each district should be appointed by their elected representatives" (O2). • "There ought to be a mechanism that citizens should have a voice in how this gets run" (O2).
Conflict	1	• Current litigation; "What I've discovered in 30 years of water rights litigation in the West is that litigation doesn't bring any result that benefits anybody and that nothing happens out here without active collaboration" (T1).

Q7. What are some of your most memorable activities, events or experiences with the A-LP Project?

While there were a variety of responses to this question, one that stands out was a respondent's (L2) comments about endangered species:

> We tried to deal with the endangered species. We had the squawfish, which is really the Colorado pikeminnow. There wasn't any in the river because in 1962 the U.S. Fish and Wildlife had paid the New Mexico Game and Fish $52,000 to kill-out all of the fish in the river where the dam was going to be and any of the tributaries to it all the way down to where the water goes into Lake Powell they

> cleaned them out. Well, just in New Mexico they used rotenone, which just stops their breathing in the water and they float to the top. . . . In ’62 they did that and you won’t find that report anywhere. New Mexico doesn’t talk about it and U.S. Fish and Wildlife certainly doesn’t but that was the demise of the Colorado pikeminnow and the humpback chub. At any rate, in ’79 they issued a non-jeopardy opinion on those fish which was a big landmark for us because nobody had any experience in dealing with the endangered species because the Endangered Species Act had only been six or seven years in operation. . . . Another big landmark was about 10 years later . . . . They were going to determine a jeopardy opinion on the Project which brought everything to a screeching halt. . . . We had to work out a plan to keep the water in the river sufficient to recover the squawfish. We have an implementation program now that is used as a pattern all over the United States because it was very successful. . . . The recovery program will probably cost $200 million and it cost $52,000 to kill them out. They don’t talk about that much.

I did not find this fish kill information in the literature review. Gosnell (2000) referred to the poisoning of the Upper Green River with rotenone. However, this was done in conjunction with the Utah and Wyoming Departments of Fish and Game (p. 73), not New Mexico. Upon further examination, I discovered the same thing happening “in the San Juan River Basin associated with Navajo Dam and Reservoir in 1961” (p. 73). Since this was done in association with the Navajo Reservoir, which is located on the

Colorado and New Mexico border, New Mexico would have been involved. Additional thematic comments related to Question 7 are presented in Table 12.

Table 12

Thematic Responses From Interview Question 7

Responses	*n*	Comments and Quotes
Trips to Washington, D.C. (L1, L2, L3, T2, T3)	5	
Visual	3	• "I remember seeing the pumping station for the first time and I was really impressed with that; that was a pretty amazing thing. Watching the water come out for the first time was pretty cool" (T2). • ". . . just as A-LP was filling—that was memorable. To see the decades of work and efforts and negotiations to be fulfilled with the actual completed reservoir. A tour of the full reservoir was beautiful and impressive" (S1). • "Standing up there and seeing the construction of the Animas-La Plata Project. The reality of it being there. I think that was the best moment because I think of all the years that we've been going" (T3).
Reduced Project size (L1, L2)	2	
Removal of Project irrigation (L1, S2)	2	
Tribal water rights-related (F, S2)	2	

The tribal water rights listed in Table 12 also represents a problem stream. Table 13 provides a breakdown of the three political streams that were identified, as well as two conflicts, a policy stream, and positive coding assignment.

Table 13

Coding Responses From Interview Question 7

Coding	*n*	Comments and Quotes
Political stream	3	• The 1970s and "getting the Project off of the Carter 'hit list'" (F). • The Romer/Schettler process of the 1980s and the associated local opposition (O2). • "The lobbying campaign and defeating the Project in the House of Representatives in 1996--that's the reason they pulled the irrigation off" (O1).
Conflict	2	• Litigation (O1, T2).
Policy stream	1	• "The 2000 amendments to the Colorado Ute Settlement Agreement" (T1).
Positive	1	• "Professional acquaintances . . . that are friends of mine as a result of all the work we did together. So much of what we're talking about is about relationships, about building relationships and about building coalitions of support" (T1).

Q8. What were some of the most pivotal moments of the Project?

Thematic comments related to Question 8 are presented in Table 14. As indicated, the pivotal A-LP Project moment comments related to the Tribal Settlement Agreement, as well as funding and the reduced A-LP Project size.

Table 14

Thematic Responses From Interview Question 8

Responses	*n*	Comments and Quotes
Tribal-related issues	3	• "The 2000-era tribal Settlement Agreement…and getting that through Congress was a huge accomplishment" (T1). • "The subsequent amendments to the original passage of the Tribal Settlement Act. That was a critical piece--without it the Project would not be a reality today, we needed that federal authorizing legislation (S1). • "The whole tribal settlement" (F).
Funding-related	2	• "The pivot moment was when it got sent to Campbell, on the appropriations committee in the Senate. When you're the head of the appropriations committee you get what you want." (O1). • "When we were was able to get the White House and Office of Management and Budget to support the funding for it. That was a key point because OMB basically holds the purse strings and they can stop stuff" (F).
Reduced Project size	2	• "I think the real issues probably occurred in the downsizing of the Project. That's when the most risk was happening" (T3). • "It was the downsizing of the Project" (L3).

Analyzed and interpreted to the next level, the thematic responses in Table 14 also indicate the Tribal Settlement Agreement as a policy stream. Other interviewee responses included two political streams: "[Former secretary of the Interior] Babbitt said if there was one acre of irrigation the Project would not be built" (L1) and "In the 80s the Fish and Wildlife Service determined there were a few squawfish in the San Juan River and the Project wouldn't jeopardize them" (S2). In addition, there was a negative comment "the midnight passage by Congress of the final Project" (O2).

Q9. What were the largest A-LP Project disappointments?

Thematic responses related to the largest A-LP Project disappointments were the removal of the irrigation component of the Project (L1, L3, F, S2, T2), as one respondent

(F) illustrated: “When the environmentalists took all of the irrigation out and gave the tribes all of the water for their coal development.” In addition, Project down-sizing (L1, L3, T3) was referred to as a disappointment. Table 15 provides a breakdown of the coding responses associated with interview Question 9.

Table 15

Coding Responses From Interview Question 9

Coding	*n*	Comments and Quotes
Conflict	4	• Current litigation (T2). • “Reclamation’s unwillingness to work with the opposition” (F). • See extracts below.
Negative	4	• A waste of energy, money, and resources (O1). • “Cost overruns and that was a big issue for the participants and for the State and I’m sure that was disappointing” (S1). • “The continued denial by Congress to fund it” (T2). • “Water quality, fish habitat in decline, and aggravated climate change” (O2).
Political stream	2	• “We got sold down the river by the Clinton administration” (O1). • See extract below.

Conflict extracts:

> **T3:** I think it’s really disappointing that we’re going through processes now that we are. I think it’s real disappointing that partners in this Project are now sitting across the table with a judge on the other side. I think that’s ridiculous, but that’s where we are. I think that’s very disappointing.
>
> **T1:** We didn’t realize that there would be all these issues arising relative to the permit [sic, in New Mexico water rights are referred to as permits]. We didn’t realize that since they were such an important partner during the days of

authorization that when the people we had worked with had left and we were dealing with a new board and new directors it was going to be this problematic. So that's probably the biggest disappointment.

Political stream extract:

L2: [Babbitt administration officials] told us that all of our money would have to be upfront, which to our knowledge had never been done on a Bureau project. So we had to upfront our money, and we got into quite a discussion at that time because we didn't know where we were going to get it. The estimate for our part was $12.8 to $16.8 million, which we were to come up with and just give it to them. That came out of Washington and was some type of a new mode of operation so to speak.

Q10. From a solutions perspective, what worked in the Project process?

As the following comments in Table 16 illustrate, the most frequent response to this question was the *coalitions, collaborations, compromises,* and the *spirit of cooperation* that worked with the A-LP Project, all of which illustrate positive connotations. In addition, a number of references to game terms surfaced to include *teams*, *coming together*, and *working on the same side*.

Table 16

Coding Responses From Interview Question 10

Responses	*n*	Comments and Quotes
Positive	7	• "I guess you could say it was a compromise and in a compromise no one is happy. A compromise of this scale no one was happy and that's kind of the way it worked out" (O2). • "Once you come together with an agreement everyone's working on the same team—pushing, pulling in the same direction for a successful resolution. We didn't have divided interests going at one another in the context of litigation" (S1). • "Reclamation and the Weeminuche Construction Authority were able to work through the construction issues and get this thing built as well as we did" (T3). • "The coalition. The two states, the water users in both states, the tribes, the non-Indian water users. They simply wouldn't take no for an answer" (S2). • "The people realizing how important water is and coming together and supporting it" (T2.) • "The Project wouldn't have happened without a few of us saying we are going to cooperate, we're going to work together, we're all going to collectively get what we want, but we're going to work together" (L2). • "We had a strong commitment from all of the partners" (T1).
Political stream	1	• "Getting the Project off the Carter 'hit list'" (F).
Recommendation	1	• "The 638 Authority was a success. The watershed of the 638 program for this Project was phenomenal" (F).

Q11. What did not work in the Project process?

As presented in Table 17, responses to Question 11 indicated that working with the opposition and the current litigation did not work in the A-LP Project process, which yielded conflict and negative coding results.

Table 17

Coding Responses From Interview Question 11

Responses	*n*	Comments and Quotes
Conflict	6	• Working with the opposition (L1, L3, S1, S2). Extract below provides an example. • Conflict related to current litigation. "We should have worked out all of the water permit [sic] issues before the smaller version of the project was authorized in 2000" (T1). • "It is absurd that we are now in litigation concerning the permit [sic, in New Mexico water rights are referred to as permits]" (T1).
Negative	5	• The local media did not work in the Project process (L1, S2). • "The whole Project didn't work, it is so absolutely absurd" (O1). • "There is still no purpose and need" (O1). • "We shouldn't have agreed to cut out the dryside" (L1).
Political stream	1	• "The constituency for Reclamation changed in the Carter administration. It used to be a very broad constituency that included not just the irrigators and the water users but also power users out of Bureau of Reclamation dams" (F).
Recommendation	1	• The need for an environmental guidance document (T2).

Conflict extract:

> **L3**: [What did not work was] communication with the opposition. . . . From the environmentalist side I don't know whether we were ever able to convince them that those big dams were partly built to subsidize the smaller projects, and so therefore it wasn't the national treasury that was subsidizing A-LP, it was the sale of power from those big dams—our dams. I never heard [the opposition] acknowledge that at all—it was always the national treasury that was subsidizing the farmers.

Q12. From a political perspective, what worked and did not work in the Project process?

As illustrated in Table 18, the most responses to Question 12 indicated that coalitions and collaborations worked in the A-LP Project political process, which yielded positive coding results.

Table 18

Coding Responses From Interview Question 12

Coding	*n*	Comments and Quotes
Positive	9	• Coalitions and collaborations, to include group trips to Washington, D.C. (F, L1, L2, L3, S1, S2, T1, T2, T3).
Negative	4	• "At some point the politics does get in the way. . . . At some the point politics urges a decision to be made even when it may not yet be the time to make the decision" (T3). • "Lobbying that was paid for by taxpayer dollars. To have my tax dollars funding someone to go to DC to advocate for a Project while I'm paying out of my own pocket to advocate against it—that's problematic" (O2). • "The Endangered Species Act was one of our first big roadblocks" (L1). • See extract below.
Conflict	3	• "The BOR was trying to get out of building dams so that hurt us—they didn't care. When the dam was being built the Bureau was not very nice. They didn't work with us" (L1). • "The Project was on track until Earth Justice sued them over the endangered species and put a halt to the whole thing—put a halt to it for 10 years" (O1). • "What's not working today is sort of the breaking in that coalition" (T1) due to current litigation.

Negative extract:

S1: I think politically what didn't work was when we fell into our roles when we were working against each other or across purposes that didn't work. Once we

could come to an agreement and say okay we're all behind this agreement—the tribes, the states of Colorado and New Mexico and the like and we're all pulling in that some direction—that worked. Whenever we were working in cross purposes or trying to influence something one way or another I think that is what didn't work.

Q13. Does the Project establish an example for future collaboration on other projects?

As presented in Table 19, the most responses to Question 13 indicated that respondents do think the A-LP Project establishes an example for future collaboration on other projects. This resulted in positive coding.

Table 19

Coding Responses From Interview Question 13

Coding	*n*	Comments and Quotes
Positive	9	• The A-LP Project establishes an example for future collaboration on other projects (F, L1, L2, O1, S1, S2, T1, T2, T3), especially as it related to tribal water rights and the 638 Authority. See extract below for an example.
Negative	2	• "No, I think until the water community is willing to have a democratic process in their boards then they have proven that they are not interested in truly representing the public" (O2). • See extract below.
Political stream	1	• "The A-LP Project was at the forefront of the environmental movement" (L3).

Positive extract:

F: The model of Animas has been used in a number of places. . . . Basically, the model is to satisfy the non-Indian water rights at today's efficiencies rather than historic efficiencies and satisfy the tribal water rights again with modern

> efficiencies and use the expanded supply as much as you can to do both of those things. . . . So what we did was making the non-Indians more efficient and freeing that water up to go towards the tribes.

Negative extract:

> **L3**: Nope—in today's society . . . you work with the opposition first. . . . In today's world if you can't work with the opposition most projects won't get built if the two sides can't work together . . . Prior to the Animas-La Plata there wasn't that environmental opposition to projects, getting the funding, the authorizations together to build projects. There was not that contingency of opposition.

Similar to previous responses, this question yielded a number of references to game terms such as *winners and losers, all on the same team*, and *rolling the opposition.* In addition, the following statement surfaced in response (O1) to this question: "Maynes said they're going to ride the A-LP through Congress on an Indian pony and that's exactly what they did."

Q14. What was your organization's position on removing irrigation from the Project?

The most responses to Question 14 indicated that respondents were not in favor or supportive of the irrigation portion of the A-LP Project being removed (F, L1, L2, L3, S1, S2, T2, T3). One interviewee (O1) was in support of irrigation removal. One respondent (O2) highlighted some points related to crop value, evaporation, and efficiency which yielded a recommendation coding: "pump that water where we have the best value food crops, where we have the least evaporation, where we have the most efficient delivery

mechanisms, where we're not taking water from one irrigator and giving it to another irrigator." Other than this coding, none surfaced related to the question.

Q15. What are your thoughts on the A-LP Project turning from an agricultural project to a tribal water rights project?

The most thematic responses to Question 15 indicated that four respondents (L2, L3, O1, T3) were supportive of the Project turning from an agricultural project to a tribal water rights project and two interviewees (L1, O2) were against it. Table 20 provides a breakdown of the coding responses associated with this question.

Table 20

Coding Responses From Interview Question 15

Coding	*n*	Comments and Quotes
Negative	1	• "The people who had a claim were the Ute Mountain Ute's but their claim was on the Dolores and Mancos Rivers, not the Animas. And once they took water out of the Dolores Project they extinguish any claims" (O1).
Political stream	1	• The Carter administration (1977-1981) and "the new reality which was stated to be no more irrigation" (F).
Recommendation	1	• See extract below.

In relation to the negative comment listed in Table 20, I explored this further with a federal interviewee (personal communication, June 19, 2015) who responded:

> To my knowledge, the Ute Mountain Ute Tribe never extinguished its water right claims when they got Dolores River water. Their claims are on the Mancos River but their claims on the Dolores, La Plata and Animas Rivers were based on aboriginal use—those rivers do not cross the current UMU reservation so a Winters Right may have been difficult to prove.

Recommendation extract:

> **L1**: And now they want to give the Indians the land from mitigation out on the La Plata River. The 6,000 acres of land that they own on the La Plata River that they bought for mitigation back to the Indians. About 6,000 acres was bought on the La Plata River by the federal government for mitigating different things like wetlands. They put in a big wetlands out there with no water and now they want to cut us out of our water that's already too scarce to keep it wet.

Q16. How would you characterize interagency partnerships associated with the A-LP Project?

The most responses to Question 16 indicated that interviewees thought the interagency partnerships worked well and these were given positive coding assignments. Respondents also referenced game terms such as *fight*, *playbook,* and *political football*. Table 21 provides a breakdown of the coding responses associated with this question.

Table 21

Coding Responses From Interview Question 16

Coding	*n*	Comments and Quotes
Positive	6	• Interagency partnerships worked well (L3, O1, O2, S1, S2, T2).
Negative	2	• "Individuals in Reclamation may have been in favor [of the Project] but the organization, because they worked for the administration—they were somewhat hand tied. Interagency partnerships worked well between local and state but not federal" (F). • The BOR was either neutral or difficult to work with but that they had not started out that way at the beginning of the Project (L1).
Policy stream	1	• "Back in 1988 we signed the Colorado Ute Water Settlement agreement" (T2).
Recommendation	1	• "In BIA it needs to come from the top. Things that generate from the bottom never percolate, you never see them" (F).

Q17. The Project required over 50 years to plan, design, and construct. How did the needs and societal acceptance of large water infrastructure change over the long development period?

Table 22 presents the thematic responses to Question 17 and Table 23 provides the coding responses associated with this question.

Table 22

Thematic Responses From Interview Question 17

Responses	*n*
Change from agriculture and farming to M&I water, predominantly due to growth (L2, L3, S2,T3)	4
More environmental emphasis than in the past (L1, L3, S1, T1)	4
Change to more tribal water rights settlements than in the past (T1, T3)	2

Table 23

Coding Responses From Interview Question 17

Coding	*n*	Comments and Quotes
Negative	1	• "This is a whole Rube Goldberg" (O1).
Political stream	1	• "In Washington water projects fell out of favor. They kept telling us that this is the last big water project. . . . But Reagan did the most damage of anyone to the ALP. Ronald Reagan stopped it. . . . the attitudes in D.C. changed against big water projects" (O1).
Recommendation	1	• See extract below.

Recommendation extract:

> **O2**: Society has a long way to go to understand how water is used and to prioritize its use. . . . We have laws that incentivize agriculture for the purpose of agriculture and not with any other metrics of highest food value, highest calorie value, highest protein value.

Q18. How has the Project impacted the lives of local individuals and communities?

The most responses to Question 18 were tribal related and as indicated in Table 24, they were positively coded. There were three negative coding responses.

Table 24

Coding Responses From Interview Question 18

Coding	*n*	Comments and Quotes
Positive	4	• Tribal: The 638 process was a "poster child for tribes to take control of their own destiny" (F). • Tribal: The Ten Tribes Agreement being "very, very helpful not only to help the non-Indians understand tribal values and interests but conversely" (F). • Tribal: "They're constructing a waterline to bring drinking water to people don't have running water in their homes. . . . I was choked up, it really warmed my heart to see that happening, it was a great feeling" (T1). • Tribal: See extract below.
Negative	3	• "It's impacted the irrigators in the La Plata Basin the most obviously because a lot of them grew up thinking they were going to have an irrigation project in their middle years and it didn't happen" (S2). • "It decreased the habitat on the Animas River, destroyed the number one elk habitat in the state of Colorado. They put off bounds a wonderful recreation area…as far as positive impacts there's zero" (O1). • "It didn't do anything for the irrigators" (L1).

Positive extract:

> **T3**: I would hope that there would be a really positive impact for everybody. We learned from each other as we moved through this process and I think one of the things that a lot of people did not know was about the cultural sensitivity of what that Project means. . . . And so I'm hoping that someday that will change . . . maybe slowly but surely people will start to understand what that means.

Q19. Other thoughts, comments, perspectives?

The last question was open-ended. As presented in Table 25, the most responses to Question 19 yielded positive coding. This question also elicited a number of game-related responses such as *fight*, *lost*, and *free zone*.

Table 25

Coding Responses From Interview Question 19

Coding	*n*	Comments and Quotes
Positive	3	• "I think this Project is a good example of what you can do when you put your mind to it, when there is persistence, people willing to compromise and work together to try to satisfy our water supply needs" (S1). • "I think water out of the Ben Nighthorse-Campbell can be used for exchange to mitigate a call on the Colorado River if ever. So, I'm glad the Project's there" (L3). • "The Project taught me to never give up and it also taught me to be understanding of other people's needs…At some point the only way you're going to get it done is to be cooperative and work together" (L2).
Negative	1	• "This is what happens when you have a small group of people who aren't accountable to the voters or taxpayers spending taxpayers money. Nobody along the line was accountable…The A-LP Project was an ethics free zone" (O1).
Recommendation	1	• See extract below.

Recommendation extract:

> **F**: First I'm pleased that you're doing this work because this arena of natural resources management does not get documented very well and I'm happy to see someone doing that. . . . I compliment you for your interests and for taking the leadership to do this. It's pretty rare really. There's not a lot of looking back and documenting the good and the bad of things that have happened.

Summary

Findings from Questions 1 and 2 indicate that the interviewees represented 329 years of involvement and 426 years of familiarity with the A-LP Project. These results suggest interviewees represented those with a long history and deep understanding of the Project. Comments related to Question 3 specify that tribal water rights and water shortages for irrigation were the central problem the Project was intended to solve. Findings from Question 4 point to environmental issues as some of the biggest impediments associated with the Project, followed by high pumping costs, as well as congressional and tribal-related issues.

Responses to Question 5 identified the Animas-La Plata Water Conservancy District, Colorado Water Conservation Board, Navajo Nation, San Juan Water Commission, Southern Ute Indian Tribe, Southwestern Water Conservation District, U.S. Bureau of Reclamation, Taxpayers for the Animas River, and Ute Mountain Ute Indian Tribe as the major stakeholders involved with the A-LP Project. In Question 6, interviewees identified Leonard Burch, Fred Kroeger, and Sam Maynes as influential individuals involved with the A-LP Project.

Question 7 asked interviewees about their most memorable activities, events or experiences with the Project. Trips to Washington, DC, visual memories (i.e., a tour of the full reservoir), the removal of the irrigation, the reduced size of the Project, and tribal water rights-related were the most often referenced. Pivotal Project moments (Q8) related to tribal water rights, the reduced size of the Project, and funding. Similar to responses in Questions 7 and 8, the largest A-LP Project disappointments queried in Question 9

specify the removal of irrigation, the down-sizing of the Project, and disappointments about the current litigation over the due diligence filing on the Project water rights.

The most frequents answer to Question 10, what worked in the Project process, were the coalitions, collaborations, compromises, and the spirit of cooperation involved with the A-LP Project. The most cited reaction to Question 11, what did not work in the Project process, was working with the opposition. Similar to Question 10 responses, what worked politically (Q12) were the coalitions and collaborations, to include trips to Washington, DC.

Most interviewees thought that the A-LP Project establishes an example for future collaboration on other projects (Q13), especially as it relates to tribal water rights and the 638 Authority. More respondents to Question 14 were not in favor of the irrigation portion of the Project being removed. Question 15 questioned interviewees about whether they were supportive of the Project being a tribal water rights settlement and five replied affirmatively. Six respondents commented that they thought the interagency partnerships worked well (Q16) but there were also negative references to the BOR as being either neutral or difficult to work with. Reactions to Question 17 and changing societal needs indicated a past emphasis on agriculture and farming to more emphasis on M&I water, predominantly due to growth. In addition, more of an emphasis on environmental issues and a change to more tribal water rights settlements than in the early years of the Project. Many of the interviewees' answers to Question 18, how the Project has impacted the lives of local individuals and communities, were tribal-related, including the 638

Authority and the Ten Tribes Agreement. Responses to the last question (Q19)—other thoughts, comments, perspectives, were varied, though predominantly positive.

Cumulatively, there were 46 negative and 40 positive coding assignments, 21 references to problem streams, and 20 conflict codings. In addition, there were 16 political stream references, 11 recommendations, and 10 policy streams references. Appendix C provides a cumulative summary of the coding assignments.

As will be demonstrated in the results section of Chapter 5, the first and second cycle coding process used for this research effort proved successful in moving inductively from coded units to larger representations including categories and themes. Specific coding and themes that emerged from the data are presented in the results section of Chapter 5, to include recommendations. The last chapter also includes coverage of how this study will contribute to scholarly and social change.

Chapter 5: Conclusions

Introduction

As previously presented, the purpose of this case study research was to gather A-LP Project stakeholder narratives in an effort to answer the central research question: Did policy streams diverge, emerge, and join to mobilize individuals and organizations around the common pool resource of water? If water project strategists were to better understand policy windows, water resource planning and policy might be enhanced.

A number of key thematic findings emerged from this study. While substantial criticism of the A-LP project was a major theme in the literature review, findings from this study revealed that collaborations and the importance of working together were most prominent. Related to this were numerous references to relationships that have been formed over the course of the A-LP Project. Additional A-LP Project themes were linked to irrigation water shortages, tribal water rights, BOR issues, Congressional appropriations, environmental challenges, the reduced Project size, and the removal of the irrigation portion of the Project. In addition, trips to Washington, DC, the 638 Authority, and working with Project opponents were common themes. Finally, there were repeated references to game terms such as *fight*, *free zone*, *losers*, *playbook*, *political football*, *teams*, and *winners*.

Interpretation of the Findings

Study results are presented in terms of positive and negative coding, as well as conflict-related references. In addition, they are analyzed from the perspective of

Kingdon's (1995) theoretical framework, to include problem, policy, and political stream coding.

Positive and Negative Coding

Excerpts from the interviews and a cumulative tally of findings from this research coding are provided in Appendix C. Key findings included more negative (46) than positive (40) coding and comments, though not by a wide margin. An almost equal number of positive and negative comments may indicate tensions associated with the Project, which were corroborated by interviewees. More than 60% of the negative comments (30) came from Project opponents. This may indicate a significant degree of difficulty associated with the Project, which was substantiated by all of the interviewees. Negative comments were too varied to codify but are presented in Appendix C. Whether from Project opponents or supporters, 87% of the positive comments (35) were about the collaborative nature of the Project. In this respect, key terms included *advocacy*, *agreement*, *coalition*, *coming together*, *commitment*, *compromise*, *cooperation*, *partnerships*, *persistence*, *supporting one another*, and *unification*. Another positive key theme to emerge linked to the tribes, specifically the 638 Authority and the Ten Tribes Agreement. Additional themes were tribal and nontribal partners learning from one another and beginning to understand cultural sensitivities, and getting water to people who did not have running water in their homes.

Conflict Coding

There were 20 conflict comments or versus coding. Five of them, all tribal, related to the current litigation over due diligence on the A-LP Project water rights, which the

New Mexico-based tribal representative referred to as permit issues. Project supporters offered five comments suggesting that they did not do a good job of communicating and working with the A-LP Project opposition. Four remarks related to difficulties working with the BOR. Three mentioned past litigation associated with the Project, and two were cultural in focus. Conflict between Colorado and New Mexico irrigators were also mentioned.

Analysis of Findings in Terms of Kingdon's Theoretical Framework

As review, Kingdon's (1995) three streams theory is based on the premise that policies are developed when three streams—problem, policy, and political—come together at a point called the *policy window*. The *problem stream* comprises the issues that need to be solved. The *policy stream* consists of potential answers or solutions to address the problem. The *political stream* includes changes in the national mood, special interest groups, and turnover in political office, including associated policy changes. Kingdon defined policy windows as opportunities for action on initiatives (p. 166) but stated that these windows are not open for long periods. Kingdon also indicated that following interest groups, scholars are among the most important nongovernmental sectors to contribute to the policy process (p. 53).

In relation to scholarly contributions, it is worth noting that in the late 1950s and early 1960s, there were path-breaking academic contributions made to the economic analysis of water projects (Boland, Flores, & Howe, as cited in Russell & Baumann, 2009, p. 91). These contributions brought to attention new dimensions in natural resource management that reflected changing societal values (p. 91). One major scholarly

document (Eckstien, 1958) critiqued BOR procedures for inaccurately measuring project benefits and costs. The basis of this critique was welfare economics, and Eckstien assumed that project benefits, such as distributional, political, and social objectives, could be incorporated into other public sector programs (p. 92). Eckstien also emphasized the importance of cost-sharing projects. While there were additional scholarly contributions during this time period, Eckstein's work "was destined to become one of those classics that remain relevant over the decades" (p. 92). In the 1950s and 1960s, too, "The academic community . . . was choosing sides. It is not unduly melodramatic to refer to these as the water wars" (Bromley, 2000, pp. 7-8). Bromley referred to the two camps as the "Axis and Allied Powers," both at the academic and Washington, DC levels. The first viewed water projects as "pork barrel politics," which could be stopped with hardcore economic analysis. This reference to pork barrel politics was supported by additional research (Ellison, 2009; Gerlak, 2005). The Allied Powers contended that welfare economics in isolation are not enough to identify and select the best public interest projects. The Kingdon (1995) review and scholarly contributions of the 1950s and 1960s set the stage for an analysis of this study's findings in terms of the Kingdon theoretical framework.

Twenty-one problem, 16 political, and 10 policy stream references were identified in this research effort. Related to the problem stream, nine comments (43%) pointed to the need to resolve tribal water rights, and eight (38%) referred to water shortages for agricultural purposes. Interestingly, those involved with the A-LP Project the longest indicated that the original intent of the Project was for irrigation water, not tribal water

rights. Half of the political stream references pointed to the late 1970s, including the Carter administration and the president's "hit list," and 30% of comments referred to the 1980s. In relation to the policy streams, half referred to the need for additional water storage, and the other half referred to the Tribal Settlement Agreement. All of these findings are consistent with those identified in the literature review. As indicated previously, Appendix C provides a cumulative summary of the coding assignments.

A key 1970s political stream finding was that during the Carter administration, the Water Resources Council changed its rules to escalate project costs but not benefits. One interpretation of this finding could be that the academic recommendations and so-called Axis Powers of the 1950s and 1960s related to cost-benefit analysis may have been incorporated into federal water policies and guidelines more than a decade later in the 1970s. As Kingdon (1995) indicated, it is a long, slow process to move from scholarly recommendations to corresponding agency rules, legislation, or other policy actions. Additional 1970s-era findings include BOR not being friendly toward environmental issues, BOR's constituency change in the Carter administration so that anyone who wanted to build an irrigation project similar to the A-LP Project no longer had a national support system, the new reality during the Carter administration becoming no more irrigation, and public priorities shifting in the 1970s from food to recreation. As presented above, this era points to a strong political stream—Carter's "hit list" and associated BOR administrative changes, merging with an equally strong, by virtue of the length of time A-LP Project supporters had been working on solving water shortages for agriculture (since

1904), problem stream. This era set the stage for the opening of a policy window in the 1980s.

The 1980s were mentioned by five interviewees and point to the emergence of cost-sharing, environmental issues, increased Project opposition, and reformulating the A-LP Project so that it became a vehicle for solving tribal water rights. These findings were all substantiated in the literature review. In relation to the Reagan administration's (1981-1989) cost-sharing requirements, "They told us that all of our money would have to be upfront which to our knowledge had never been done on a Bureau project. . . . That came out of Washington and was some type of a new mode of operation so to speak" (Q9; L2). In addition, in the 1980s the U.S. Fish and Wildlife Service determined that there were a few Colorado pikeminnow in the San Juan River. The 1980s also included the Romer/Schettler process and increased local opposition. Moreover, the Colorado Ute Indian Water Rights Settlement Act was signed in 1988. Adding to the strong political stream of the Carter administration in the late 1970s to early 1980s discussed previously, during the Reagan administration era of the 1980s there was the merging of the pre-established shortage of irrigation water for agriculture and the need to solve tribal water rights (problem stream, also policy stream related to the need for water storage for agriculture), cost-sharing requirements (political stream), environmental or ESA issues (political stream), Project opposition (political stream), and the Tribal Settlement Agreement (policy stream). This could be viewed as an explosion of public policy streams occurring at about the same time, or what Kingdon (1995) termed the *coupling* or *joining* of the streams. Add to this coupling the political stream of water projects falling

out of favor during the Reagan administration, as one interviewee illustrated: “the A-LP Project was at the forefront of the environmental movement” (L3); it appears the A-LP Project was caught in the crosshairs.

The 1990s political streams could have been the final blow for the A-LP Project as an agricultural water storage project as originally proposed. Four interviewee comments pointed to the political streams of the 1990s during the Clinton (1993-2001) administration. In the early 1990s, the U.S. Fish and Wildlife Service determined that the A-LP Project would cause jeopardy to the Colorado pikeminnow, which was “what stopped the big Project” (Q8; S2). In addition, two interviewees referred to former Secretary of the Interior Bruce Babbitt (1993 to 2001), as one comment illustrates: “Babbitt said if there was one acre of irrigation the Project would not be built” (Q8; L1). In addition, the 1990s produced the defeat of the A-LP Project in the House of Representatives in 1996; “that’s the reason they pulled the irrigation off” (Q7; O1). Again, it was in the 1990s that the agricultural irrigation component of the Project was entirely removed.

To summarize, the merged problem and political streams of the late 1970s joined with additional streams of these labels, plus the policy stream in the 1980s. Therefore, it appears that in the late 1970s and into the 1980s (Carter and Reagan administrations), Kingdon’s (1995) three streams theory was validated based on the premise that policies are developed when these three streams come together at a point called the *policy window*. In this case, the policy that developed to make the A-LP Project a reality was turning it into a tribal water rights issue with the passage of the Colorado Ute Indian

Water Rights Settlement Act in 1988. These policy windows were also identified and verified in Chapter 2. As mentioned previously, however, according to Kingdon, open policy windows by themselves do not lead to change but need policy entrepreneurs to make them happen. He defined these entrepreneurs as those who play critical roles by seizing opportunities to get issues on the agenda. Burch, Kroeger, and Maynes came up in the interviews most prominently and were clearly identified as the policy entrepreneurs in the A-LP Project. Burch and Maynes were identified in Allen's (1997) research, and Gosnell (2000) pointed to Kroeger and Maynes as key players in the A-LP Project. Based on interviewee comments, not only did they seize opportunities; they were masters of politics. Moreover, these individuals represented both local and tribal entities. Therefore, as opposed to federal or state forces, it appears that local champions played a key role in making the A-LP Project a reality.

A key result of this research was that in the late 1970s to 1980s, all conditions required to open policy windows were present in this case study, including the presence of policy entrepreneurs. Whether as water project proponent or opposition, if strategists can predict the opening of these windows, resource planning and policy may be enhanced. In addition, from a positive social change perspective, strategists can use Kingdon's (1995) theory and narrative policy analysis as a valuable tool to gain insight into lessons learned throughout a water development project.

More recently, the August 5, 2015 accidental release of more than 3 million gallons of acidic mine waste into the Animas River and Cement Creek above Silverton, CO, provided another example of a policy window with "the appearance of a compelling

problem" (Kingdon, 1995, p. 20). The incident made national news. The mishap occurred at the Gold King Mine in San Juan County, approximately one hour north of the City of Durango, when a U.S. EPA safety crew investigating contamination at the site triggered a large release of mine wastewater, which resulted in acidic mine water containing metals and sediment flowing as an orange-colored discharge downstream (Olivarius-Mcallister, Shinn, & Benjamin, 2015). As a result, the Animas River was closed for 9 days, and users were advised to stay off the water until the contaminated water had passed through Durango. Ranchers were also encouraged to keep livestock away from the river. The situation was critical, and countless businesses and associated incomes were affected. The reaction to this problem stream from the local water community and associated organizations was immediate collaboration. Federal, state, and local authorities soon joined the collaborative process, and a policy stream in the form of an effective emergency response was formulated (U.S. Environmental Protection Agency, 2015). The political stream included a site visit from Colorado Governor Hickenlooper (CBSDenver, 2015), and, as of this writing, the political stream is still in action (Olivarius-Mcallister, 2015). With water dilution and the passage of the plume, the situation dissipated, although long-term effects are still unknown. As will be demonstrated in the recommendations section, this incident and policy window has the potential to contribute to positive social change with the passage of so-called Good Samaritan legislation.

Limitations of the Study

No limitations to trustworthiness arose from the execution of this study, with the possible exception of the absence of participation of women. As demonstrated in Chapter

4, however, only 16% of the individuals described as being involved with the A-LP Project (Q6) were female, which is consistent with the historically male-dominated field of water supply planning and policy development. An additional limitation of narrative research studies is unintended interview interpretations. To help compensate for this, and as discussed previously, I used triangulation—that is, several different methods for data collection. The types of data in this case study contributing to triangulation or convergence of data included archival records (i.e., Center for Southwest Studies, BOR reports), A-LP Project-related documents identified with a thorough literature review, and interviews conducted with stakeholders from the major organizations involved in the history of the A-LP Project. Thus, having performed thorough and multiple transcription reviews, as well as deep analysis, I am confident in the findings and the trustworthiness of this study.

Recommendations

In addition to the appropriateness of using Kingdon's (1995) theory and narrative policy analysis to help predict the opening of policy windows to gain insights about water development projects, further recommendations surfaced from this research effort. They are presented below, broken down by recommendations for future public policies and those related to further research.

Public Policy Recommendations

Recommendations for future public policies are broken down by thematic categories and sectors below.

Growth. Population growth, which was discussed in Chapter 1, is the root of resource use and depletion (Ehrlich, 1968; Miller, 1990; NASA, 2015), including water resources. On August 13, 2015, the world entered *ecological overshoot*, the point when an environmental deficit transcends nature's ability to regenerate itself (Simms, 2015, para. 1). Since I wrote the original draft of this study, articles, reports, and studies related to impending water issues and problems continued to be written. One, a NASA study, "has highlighted the prospect that global industrial civilization could collapse in coming decades due to unsustainable resource exploitation" (Ahmed, 2014, para. 1). Researchers identified the most interrelated factors to explain civilization decline as agriculture, climate, energy, population, and water (para. 6). Kolbert (2014) referred to the pending situation as the sixth extinction. According to Bradshaw and Brook (2014), without severe limits within a few decades on the number of children per family, population growth is virtually locked in. Bradshaw and Brook contended that unless a sustainable population is achieved, global resources, including water, will be increasingly threatened.

In relation to growth and water, the United Nations determined that the world could be facing a 40% water deficit by 2030 (Ingham, 2015, para. 2). Leaders at the January 2015 World Economic Forum "identified the scarcity of water as the leading threat facing the world over the next decade" (Rahman, 2015, para. 1). Until societies seriously address exponential population growth, current environmental mitigation efforts will be thwarted. Kingdon (1995) contended that policy-makers tend to listen to scholars most when their research and proposals are directly related to social issues that are already occupying decision-makers' attention (p. 56). No social issue is more compelling

than extreme water shortages and potential global civilization collapse. Due to the severity of the situation, addressing this public policy issue should commence expediently at the highest levels of governments.

Governmental. A key finding from this study indicates that federal economic analysis no longer includes the escalated benefits associated with water projects. Ultimately, this 1970s-1980s change in federal policy may have been a large contributor to the elimination of the irrigation component of the A-LP Project in the 1990s. "The Principles and Guidelines (P&G) for Water Resource Planning, issued by the U. S Water Resources Council are still in place and unchanged" (F., personal communication, June 21, 2015). As Boland, Flores, and Howe (as cited in Russell & Baumann, 2009) pointed out, from 1965 to 1983 the P&G was periodically revised and published (p. 127) by the Water Resources Council (WRC). The WRC no longer exists, and the last revision to the P&G occurred in 1983. "This ad hoc arrangement is unlikely to be adequate to the demands of the future, which may require substantial revision and broader dissemination of the P&G" (p. 127). Findings from this study point to the need to update the P&G and re-examine the federal policy change that excludes escalated benefits associated with not only water projects but other public works projects as well. While it is unclear at this time whether water storage projects will be built in the future, re-examining the escalated benefits policy of the P&G could be beneficial so that if storage facilities do become part of the solutions equation in the future, mechanisms will already be in place to address this issue. Benefit-cost analysis should evolve to provide appropriate weight to all project effects (Boland, Flores, & Howe, as cited in Russell & Baumann, 2009, p. 129).

Related to government, too, are the tens of thousands of abandoned mines in the United States (Good Samaritan Legislation, n.d.) emitting acid mine drainage into rivers and streams. In Colorado there are more than 23,000 abandoned mines such as the Gold King Mine (Colorado Geological Survey, n.d., para. 1). Individuals and groups "willing to conduct mine reclamation at these sites if they have [federal] environmental liability protection from the Clean Water Act" (para. 1) are known as Good Samaritans. However, due to the liability associated with directly treating polluted mine drainage and the associated potential for accidents, such as what occurred to the Animas River in August 2015, countless organizations across the West, such as the Animas River Stakeholders Group, have been advocating for Good Samaritan legislation for decades—since 1994 but to no avail. The following from the Good Samaritan Legislation (n.d., para. 3) website summarizes some of the issues:

> While the need for Good Samaritan legislation is well recognized, there are a number of opinions as to how broad the liability protections should be, who they should apply to, and to what sites they should be applied. So far there has not been enough of a consensus on these issues to allow federal legislation to move forward. In the meantime, thousands of mines continue to disgorge their contaminates with little expectations that anything will be done.

Threats to sue the EPA (Paul, 2015) have included such words as the following from Navajo Nation President Russell Begaye: "We are going to be suing for millions-billions of dollars" (Quintaro, 2015, para. 3). Moreover, at least one law firm is advertizing on local radio stations for citizenry to contact them about a lawsuit against the

EPA for the Gold King Mine incident. Perhaps, then, the national attention of the Gold King Mine brought on by the U.S. EPA's own mitigation efforts will finally move this type of legislation forward. Legislation is necessary and should be enacted so that Good Samaritans can finally proceed with vital clean-up efforts. Advocates should take advantage of this policy window opportunity, which may not be open for long.

In relation to government are interstate compact issues. When legislation is developed, such as the 1922 New Mexico Compact "that took half of our water and sometimes all of the water" (L1), such issues should be fully factored in and perhaps financially compensated. This is essentially the basis for the current A-LP Project litigation and why this case has large implications for the state of Colorado. While this topic is beyond the scope of this research project, more fully assessing and mitigating the consequences of these types of legally binding interstate compact agreements and policies could aid in preventing future and expensive litigation, such as what is currently occurring in association with the A-LP Project.

Another finding from this study indicates that a federal and state environmental guidelines document may be helpful, especially for those at the local level. As one interviewee (T2) indicated there is "a lack of knowledge of what all needs to be addressed before you start a project." This topic could be one outcome of the Colorado Water Plan, as the Colorado Water Conservation Board has a permitting subcommittee for the IBCC that is looking at this issue. Until then, the closest I was able to find to such a document was Jessup's (1994) *Guide to State Environmental Programs* developed by the Bureau of National Affairs. This comprehensive document provides information not

only on each state's environmental requirements but departmental contact information as well, along with information on federal environmental laws and programs. Unfortunately, the document is somewhat dated. This type of resource should be developed and updated on a regular basis. Creating, updating, and widely distributing a guidelines document that clearly outlines federal and state requirements associated with either water-specific storage projects or public works projects in general has the potential to clarify all of the environmental regulations compliance requirements for a wide range of audiences. Ultimately, this could aid the permitting process and may help to reduce associated costs and time.

Findings from this research point to the lack of congressional knowledge about the importance of western water and the need to re-educate congresspersons and senators about long-standing projects, given the turnover in elected office. The latter issue, discussed some years ago by Senator Nighthorse Campbell, was identified by Allen (1997). While the first issue, congressional understanding of western water issues, may be changing due to the seriousness of the United States water situation (i.e., California), it is recommended that a water and projects primer be developed to educate elected officials and their staff. Developing and using such a primer could help public policy decision making by preserving the legislative history of long-standing efforts such as the A-LP Project, which could result in substantial time and money savings for all involved.

Tribal. Findings from this study indicate that the following claim regarding the U.S. Bureau of Indian Affairs (BIA) should be substantiated: "In BIA it needs to come from the top. Things that generate from the bottom never percolate, you never see them"

(F). From a public policy perspective, establishing the validity of the claim that BIA operates from a top-down approach could aid with BIA's stated mission, which is to "enhance the quality of life, to promote economic opportunity, and to carry out the responsibility to protect and improve the trust assets of American Indians, Indian tribes, and Alaska Natives" (BIA, 2015, para. 2). If this is the case, then voices from "the bottom" must be heard.

Related to the BIA, too, is the statement that obtaining resource funds from the Bureau of Indian Affairs is difficult. It is recommended that this claim also be substantiated. Similar to the previous recommendation, simplifying access to tribal resource funds has the potential to contribute to public policy administration because if part of BIA's mission, referred to above, is to improve and protect the trust assets (BIA, 2015, para. 2) of Native Americans, then funding obstacles should be removed.

Another finding from this study highlights the 638 Authority of tribes. In an effort to promote economic opportunity (BIA, 2015, para. 2) for Native Americans, using the 638 Authority as extensively as possible has the potential to greatly enhance the economic livelihood and viability of tribal members and their associations.

Findings from this research also indicate that the tribal and mitigated lands issue related to the A-LP Project should be more fully explored. As L1 stated:

> And now they want to give the Indians the land from mitigation out on the La Plata River. . . . About 6,000 acres was bought on the La Plata River by the federal government for mitigating different things like wetlands. They put in a big

> wetlands out there with no water and now they want to cut us out of our water that's already too scarce to keep it wet.

The mitigated land in question is currently being held in public trust by the federal government. Releasing it back to another party should not proceed unless all options have been carefully explored. Moreover, from the statement above, it appears—similar to the 1922 compact discussed earlier—that the land exchange could cause injury to other water users.

Local. At the local level, findings from this study point to the need to substantiate comments such as the following: "Representatives of each district should be appointed by their elected representatives" (O2) and "there ought to be a mechanism that citizens should have a voice in how this gets run" (O2). Addressing these types of citizenry concerns now could aid future natural resource management if it results in a more inclusive and representative decision-making process.

Further Research Recommendations

Recommendations for future research are broken down by natural resource management and scholarly categories below.

Natural resources management. As the following interviewee (F) comment illustrates, studies such as this one have the potential to contribute to the field of natural resources management:

> First I'm pleased that you're doing this work because this arena of natural resources management does not get documented very well and I'm happy to see someone doing that . . . I compliment you for your interests and for taking the

leadership to do this. It's pretty rare really. There's not a lot of looking back and documenting the good and the bad of things that have happened.

Additional research that documents natural resources management has the potential to aid in decision-making processes by examining lessons learned from long public policy processes such as the A-LP Project.

Findings from this study, and using narrative case study research, also have the potential to contribute to the field of *ex post audits*. As pointed out by Galloway (in Russell & Baumann, 2009), the Government Performance and Results Act (GPRA) of 1993 requires that metrics be developed to assess the performance of programs. The GPRA also requires a backward examination of completed projects and programs through ex post audits (p. 269). Predominantly due to funding constraints and "because there is a tendency to avoid reopening issues that seemingly have been settled" (p. 269), these audits are seldom done. It will be difficult to comply with the GPRA, however, if ex post audits are not conducted in an effort to examine lessons learned. As demonstrated in this research, assessments of the performance of past water policies associated with the A-LP Project can reveal many valuable lessons and this study provides a wide range of examples. Some of those include but are not limited to: the importance of understanding policy windows; the vital role of policy entrepreneurs; reassessing and updating the Principles and Guidelines for Water Resource Planning, with the associated project cost-benefit analysis re-examination; interstate compact issues; the need for an environmental guidance document, as well as a water and projects primer; and tribal, to include the U.S. Bureau of Indian Affairs, 638 Authority, and mitigated lands issues. Whether as a water

project strategist opponent or supporter, narrative policy analysis, used in this research, could be a valuable ex post audit tool from a social sciences and public policy perspective. As Galloway indicated, continued evaluation and monitoring should be conducted and recognized as valid project components and costs (p. 281).

An additional field this research may contribute is *holistic basin planning*. In December 2014, the Colorado River Research Group issued a set of guiding principles for water planning. Those principles "stress the need for a holistic, integrated, basin-wide perspective as contrasted with a *status quo* in which every company, city and state plans in isolation" (Richter, 2015, para. 6). Narrative policy analysis could be used as part of the holistic basin planning process, as it provides a case study in understanding the importance of policy windows and the collaborative process.

This A-LP Project case study research also provides an example of regional water management and planning that could have nationwide applicability and implications. As demonstrated in this study federal, local, state, and tribal entities, plus Project opponents successfully worked on a problem stream in an effort to solve water management issues in southwest Colorado.

Scholarly. Eidem's (2012) A-LP Project research, identified in Chapter 2, referred to *adaptive management* and *systems thinking*. The findings from this study support Eidem's conclusion that policy-makers and researchers could focus on these two concepts as methods to analyze the water management and policy process. This type of analysis demonstrates how social systems, in this case A-LP Project organizations and stakeholders, have adapted to a multitude of disturbances or problems associated with the

Project. Examples include cost-sharing, environmental, and tribal issues and solutions. In addition, this narrative study supports the concept of systems thinking by illustrating how the activities and events of one process influenced others. The key characteristics of systems thinking substantiated with this research include an understanding that human systems are purposeful, system members rely on each other to achieve their goals, people exist in relationships, the way a system is organized arises from interactions among its members, and systems are full of tensions (Buckle-Henning & Chen, 2012). All of these characteristics were demonstrated in this A-LP Project study, which could be used as a model for future research.

Findings from this study and the use of narrative research may also contribute to the field of *socio-hydrology*, which is the relationship between humans and water. Socio-hydrology is associated with the theory that it is difficult to understand what is happening with water without considering the decision-making process associated with it (Walton, 2014a). Research similar to this A-LP Project case study using narratives could contribute to the study of socio-hydrology by providing a useful method to examine the long and complicated decision-making process involved with water resource management and decision making.

Another finding from this study relates to the proliferation of references to game terms that surfaced in this research. Again, some of those terms included *fight*, *free zone*, *playbook*, *political football*, *teams*, *winners*, and *losers*. It may be of value to analyze such findings and terms through *game theory*, which is a form of strategic decision making, specifically, "the study of mathematical models of conflict and cooperation

between intelligent rational decision-makers" (Myerson, 1991, p. 1). As indicated in Chapter 2, I initially considered game theory as a method to explain stakeholder behaviors but ultimately decided to use Kingdon's (1995) theoretical framework. Further researching water resources decision-making processes have the potential to help reduce water-related conflicts and increase cooperation between borders and nations.

Results also point to the need to examine how water is used and prioritize how it is used. One interviewee (O2) stated it with valid points: "We have laws that incentivize agriculture for the purpose of agriculture and not with any other metrics of highest calorie, food, or protein values." In addition: "Let's pump water where we have the best value food crops, where we have the least evaporation, where we have the most efficient delivery mechanisms, where we're not taking water from one irrigator and giving it to another." As demonstrated in Chapters 1 and 2, with continued and impending water scarcity issues, research pertaining to subsidies, food values, and efficiencies, if not already being undertaken, could be invaluable not only for the American West but globally as well.

A final scholarly recommendation relates to conducting research with Native Americans. As one interviewee (S2) put it: "The tribes have been burned in the past by people doing research . . . how we're going to do this great report and then they just trashed them—particularly movies and newspaper reports, media sort of thing." Based on this statement, future researchers should be respectful of all tribal cultures and procedures and go through the proper channels to obtain permission to conduct research with Native American administrations. Upon completion of research, tribal administrations should be

provided with accurate, balanced, and fair results that are free of bias and respectful of customs.

Social Change Implications

As established in Chapter 1, wars have been fought over water, and, according to experts and researchers, water shortages may become exacerbated (Cech, 2010; Christian-Smith et al., 2012; National Intelligence Council, 2012; Pacific Institute, 2013; UN, 2012b; Vaux, 2011). Moreover, exponential population growth, coupled with reductions in water supply, is contributing to social strain. In these regards, applied research to improve water resources management has the potential to contribute to positive social change. If policy makers can learn to predict the opening of policy windows, water resource planning may be enhanced. In addition, from a positive social change perspective, water strategists can use Kingdon's (1995) theory and narrative policy analysis as a valuable tool to gain insight into lessons learned throughout a water development project.

Additional positive social change benefits from this study include future public policy recommendations discussed above. Those include addressing exponential population growth, as well as updating the P&G and re-examining the federal policy change that excludes escalated benefits associated with water projects. In addition, Good Samaritan legislation should be enacted. Moreover, fully assessing and mitigating the consequences of legally binding interstate compact agreements, creating an environmental regulations and guidance document, as well as projects and water primers for elected officials, all have the potential to save valuable time and money. Re-

examining BIA operations, to include top-down management claims and the difficulty accessing tribal resource funds, could provide positive social change benefits at the local and societal or policy levels. Those coupled with extensive promotion and use of the tribal 638 Authority has the potential to greatly enhance the economic livelihood and viability of tribal members and their associations. Further exploring the mitigated lands transfer issue has the potential to contribute to positive social change at the local and societal or policy levels, especially if it prevents injury to water users. Finally, addressing citizenry concerns about water management inclusion and representation could aid future natural resource management and decision making at the local level.

Findings from this study, and using narrative case study research, may lead to positive social change contributions in the field of natural resource management to include ex post audits, holistic basin planning, and regional water management and planning. Moreover, narrative case study research and findings from this study could make positive social change contributions in a number of scholarly fields to include adaptive management and systems thinking, socio-hydrology, and game theory. In addition, research endeavors related to Native Americans and agricultural subsidies, food values, and efficiencies, could be of great social change value.

Conclusion

At this time it is undetermined whether the A-LP Project succeeded in solving the problems it was originally intended to solve. However, the purpose of this case study research was not to critique the Project and provide commentary on whether the reservoir should have been built. Rather, the purpose of the study was to gather A-LP Project

stakeholder narratives in an effort to answer the central research question: Did policy streams diverge, emerge, and join to mobilize individuals and organizations around the common pool resource of water?

As illustrated in this chapter, using stakeholder narratives, this study demonstrated how streams form to open policy windows that allow action to meet water supply needs. In the late 1970s through the 1980s all conditions required to open policy windows were present in this case study, including the identification of policy entrepreneurs. From a positive social change perspective, the A-LP Project narratives provided useful insight into long-term public policy formation and planning by identifying key factors involved to open policy windows that mobilized individuals and organizations around the common pool resource of water. Those key factors included academic research of the 1950s and 1960s, the late 1970s to early 1980s Carter administration and BOR policy changes to project cost-benefit analysis, coupled with a plethora of 1980s political streams (e.g., cost-sharing, environmental, opposition, etc.). These ultimately led to a late 1980s policy window—the Colorado Ute Indian Water Rights Settlement Act, opening to make the Project a reality, albeit at a much reduced size and with the irrigation component entirely removed in the 1990s.

If policy makers can learn to predict the opening of policy windows, water resource planning may be enhanced. From a positive social change perspective, water strategists can use Kingdon's (1995) theory and narrative policy analysis as a valuable tool to gain insights into lessons learned throughout a water development project. Kingdon's three steams theory was perfectly suited for this A-LP Project case study

research because it focused on institutional arrangements and the process of the policy process, aligned with complex and long policy and decision-making processes, and proposed a model for how external events (i.e., cost-benefit analysis and administration changes) create windows of opportunity.

In 2015 additional articles, reports, and studies related to impending water issues and problems have continued to be written. One of the most recent was the Vatican's venture into the environmental arena with the publishing of the Pope's Encyclical Letter, *Laudato Si'* ["On Care for Our Common Home"] (Francis, 2015). While considerable attention is devoted to the issue of climate change in the Letter, other environmental challenges are also included, with water being one of them. As Gillis (2012) pointed out, climate change is a water problem more than anything else (para. 1). Woven throughout the Vatican Encyclical are the equity and social dimensions of climate change and water challenges and a deep concern for the poor (Gleick, 2015, para. 1). As demonstrated in this study, water challenges are a complex and multifaceted combination of issues. Whether of faith or not, however, the Papal reminder is that ultimately these are ethical and moral issues.

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Appendix A: Interview Protocol

Date and Time of Interview: _____
Interview Location: _____
Interviewee Name and Title: _____
Interviewee Organization: _____
Interviewer: Denise Rue-Pastin
Brief Study Description: The purpose of this study is to gather Animas-La Plata (A-LP) Project stakeholder narratives in an effort to answer the central research question: Did policy streams diverge, emerge, and join to mobilize individuals and organizations around the common pool resource of water?

Questions:

1. How long have you been involved with the Animas La Plata (A-LP) Project? (dates)
2. What is your earliest recollection of the A-LP Project? (dates)
3. What was the central problem(s) that the Project was intended to solve?
4. In general, what were some of the biggest problems associated with the Project?
5. In your view, what were the primary organizations involved in the A-LP Project at the local, state, and federal levels?
6. Who were some of the major stakeholders involved in the Project from each of the organizations you mentioned?
7. What are some of your most memorable activities, events or experiences with the A-LP Project? (Interviewer: obtain dates/years)
8. What were some of the most pivotal moments of the Project? (Interviewer: obtain dates/years)
9. What were the largest A-LP Project disappointments? (Interviewer: obtain dates/years)
10. From a solutions perspective, what worked in the Project process?
11. What did not work in the Project process?
12. From a political perspective, what worked and did not work in the Project process?
13. Does the Project establish an example for future collaboration on other projects? If yes, in what ways? If no, why?
14. What was your organization's position on removing irrigation from the Project?
15. What are your thoughts on the A-LP Project turning from an agricultural project to a tribal water rights project?
16. How would you characterize interagency partnerships associated with the A-LP Project?
17. The Project required over 50 years to plan, design, and construct. How did the needs and societal acceptance of large water infrastructure change over the long development period?
18. How has the Project impacted the lives of local individuals and communities?
19. Other thoughts, comments, perspectives?

Appendix B: Ethics Documentation

A-LP Project Invitation to Participate in Research
Initial Informational Letter to Potential Interviewees

[Date]

Dear [Participant name]:

I am a graduate student conducting research under the direction of Dr. Bethe Hagens with Walden University. The purpose of this study is to gather stakeholder narratives through interviews from individuals involved in the Animas-La Plata (A-LP) Project.

I am inviting your participation, which will involve answering questions related to the A-LP Project during a scheduled interview session. I will be using narratives from your interview to answer the central research question: Did policy streams diverge, emerge, and join to mobilize individuals and organizations around the common pool resource of water?

The interview session should take no longer than an hour and there are no foreseeable risks or discomforts associated with your participation. Your participation in this study is completely voluntary and you may choose to not participate and/or withdraw from the interview at any time. However, to participate in this study you must be knowledgeable about the A-LP Project. Your responses will remain confidential. Interviews will be recorded using an audio recorder. Any identifying information of yourself or others will be replaced with pseudonyms in the transcriptions and the recordings will be destroyed upon your approval of the written summary of your interview.

If you have any questions concerning the research study, please contact Denise Rue-Pastin at denise.rue-pastin@waldenu.edu or Dr. Bethe Hagens at bethe.hagens@waldenu.edu. In addition, the Research Participant Advocate at Walden University is Leilani Endicott. You may contact her at 1-800-925-3368, extension 1210, if you have questions about your participation in this study.

I very much hope that you will consider participating. I will be contacting you in approximately one week to see if you are interested and available to participate in this research effort. Thank you in advance for your time and consideration.

Sincerely,
Denise Rue-Pastin, Ph.D. candidate, MEPM
A00121511, Walden University

CONSENT FORM

You are invited to participate in a research study of the Animas-La Plata (A-LP) Project. You are invited to participate in a research study of the Animas-La Plata (A-LP) Project. This study is being conducted by Denise Rue-Pastin, a doctoral candidate at Walden University. You were selected as a possible participant due to your knowledge and experience related to the topic being studied. Please read this form and ask any questions you may have before acting on this invitation to be in the study.

Background

The purpose of this study is to gather stakeholder narratives through interviews related to the Animas-La Plata (A-LP) Project. The intent of the study is to answer the central research question: Did policy streams diverge, emerge, and join to mobilize individuals and organizations around the common pool resource of water?

Compensation

There will be no compensation provided for your participation in this study.

Confidentiality

The records of this study will be kept confidential. In any report of this study that might be published, I will not include any information that will make it possible to identify you. Research records will be kept in a locked file, and only I will have access to the records.

Conflicts of Interest

I disclose that I work in a contractor capacity with two of the organizations involved with the A-LP Project. I will, however, not be compensated while conducting the interviews. I am conducting this research effort independent of any organizations.

Procedures

If you agree to participate in this study, you will be asked to answer interview questions. The interview is expected to take approximately one hour. The interview will be digitally recorded and you will be asked to sign a consent form prior to the interview. You will have the opportunity to review your transcript of the interview for accuracy. Your privacy will be respected and you will be allowed to indicate where and when you choose to conduct the interview. In addition, you may terminate your participation at any time and decline to answer questions you consider invasive or stressful. Refusing or discontinuing participation involves no penalty.

Study Risks and Benefits

There are no anticipated risks or safety issues associated with this study. In addition, pseudonyms will be used in the final research write-up that will prevent identification of any person interviewed. If you choose to participate in this study, you will have the benefit of an opportunity to express your views on the A-LP Project and you may have a copy of the final research results.

Questions and Contacts

This study is being conducted by Denise Rue-Pastin, a doctoral student at Walden University. Her faculty advisor is Dr. Bethe Hagens. You may ask any questions you have now. If you have questions later, you can contact Denise at (970) 946-9024 or email denise.rue-pastin@waldenu.edu. The Research Participant Advocate at Walden University is Leilani Endicott. You may contact her at 1-800-925-3368, extension 1210, if you have questions about your participation in this study. You will receive a copy of this form for signature and you may keep a copy for your records.

Voluntary Study

Your participation in this study is strictly voluntary and there is no pressure to participate. You are free to withdraw at any time.

Statement of Consent

I have read the above information. I have asked questions and received answers. I consent to participate in the study. I may keep a copy of the informed consent form.

Printed Name of Participant: _____

Participant Signature/Date: _____

Signature of Researcher/Date:_____

Appendix C: Excerpts From Transcripts—General, Short Responses to Interview Questions and Master Coding Results

Excerpts from Transcripts:
General, Short List of Question Responses

Note: The entire interview transcriptions are not provided here but may be available for future researchers who may be interested in them for scholarly study purposes. Contact the author to discuss the possibility.

Q1 How long have you been involved with the Animas La Plata (A-LP) Project?

(See Chapter 4, Table 2)

Q2 What is your earliest recollection of the A-LP Project?

(See Chapter 4, Table 4)

Q3 What was the central problem(s) that the Project was intended to solve?

F: Tribal water rights and another purpose always was the municipal and industrial use in the area, not only for Durango but for some of the coal reserves that are on both reservations down closer to the San Juan River."
L1: "So the central problem was not enough water for agriculture on the dryside."
L2: "It originally was designed to irrigate the land on the La Plata River—Colorado and New Mexico."
L3: "If you can solve those [Indian] water rights and get irrigation water to a basin that was really short, which was the La Plata Basin—those were the two primary purposes."
O1: "They wanted to take tax money from the U.S. Treasury and have it spent here."
O2: "So what was it intended to solve?—Indian water rights and agricultural water so as to not let the water escape out of state."
S1: "Indian water rights settlement issues."
S2: "Irrigate the 70,000 acres in the La Plata Basin."
T1: "Initially the Project always had an agricultural and municipal component
T2: "We had [tribal] water rights that needed to be affirmed."
T3: "The purpose of this whole endeavor was to get water to the tribes--the two Colorado tribes."

Q4 In general, what were some of the biggest problems associated with the Project?

F: "One of the big problems I saw early on was the way the federal government does economic analysis on projects. They look at the escalated costs, but they don't look at the escalated benefits and therefore all of these projects had a very marginal

benefit-cost ratio." In addition, "Reclamation was not friendly toward environmental issues. . . . There was basically a cultural bias in the agency that anything environmental was not important and therefore did not need to be considered as projects were designed and implemented."

L1: "The thing that hurt us worst probably was pumping water into the reservoir."

L2: "Endangered Species people—mainly U.S. Fish and Wildlife and Colorado Fish and Wildlife. And then there were some environmental problems."

L3: "In today's world you have to collaborate with the people who are for it and the people who are against it."

O1: "The project is economically unfeasible, a wildlife preserve was destroyed, and high pumping costs with associated climate change consequences."

O2: "No demonstrated need. . . . Diverting that amount of water out of the river is a bad thing I believe. The pumping is a bad thing. . . . fishery is in steep decline."

S1: "The size of the Project as it related to some of the environmental compliance. Problems associated with Congress, resolving interstate and tribal water issues, and environmental compliance issues."

S2: "Pumping costs." In addition, "The public perception of the need for food changed in the 70s from food being a priority to recreation being a priority." "Also the Endangered Species Act and NEPA were problems."

T1: "The primary problem with any water project is always going to be getting congressional authorization and funding . . . the most difficult problem was the Endangered Species Act issues."

T2: "Senators and Congress were from those states out East and they didn't see or look at the importance of water not only to the Indians but to the farmers—the people that use the water."

T3: "one of the issues the tribe has always had a problem with was how the resource funds are divided. . . . The process of getting the resource funds from the Bureau of Indian Affairs has not been easy. We have issues with recreation, we have issues with trespass. . . . We've had problems with getting some of the cultural resources dealt with adequately."

Q5 In your view, what were the primary organizations involved in the A-LP Project at the local, state, and federal levels?

(See list breakdown in Chapter 4)

Q6 Who were some of the major stakeholders involved in the Project from each of the organizations you mentioned?

Fred Kroeger (n=8; L1, L2, L3, O1, O2, S1, T1, T3)
Sam Maynes (n=8; L1, L2, L3, O1, O2, S1, T1, T3)

Q7 What are some of your most memorable activities, events or experiences with the A-LP Project?

F: "Getting the Project off of the Carter hit list was a major accomplishment. Tribal water rights settlement and the Romer/Schoettler process."
L1: "The big disappointments. The first was when we were asked by congress to cut the size of the irrigated land by about 60,000 acres in Colorado on the dryside."
L2: "I made many trips to Washington."
L3: "The trips to Washington."
O1: "Winning an open records and an open meetings lawsuit and the lobbying campaign and defeating the Project in the House of Representatives in 1996--that's the reason they pulled the irrigation off." In addition, "Then the next big disappointment was when they wanted to go ultra-lite."
O2: "One was a protest on the street. Another one was our film premier for the Animas-La Plata. The third was the series of hearings."
S1: "Our Board was there . . . just as A-LP was filling—that was memorable. To see the decades of work, efforts and negotiations to be fulfilled with the actual completed reservoir. The full reservoir was beautiful and impressive."
S2: "We had a meeting in the state capital when Bruce Babbitt told us there was no way they were going to go along with any aspect of irrigation."
T1: "A lot of trips to DC meeting."
T2: "Stand up at there and see the construction of the Animas-La Plata Project. The reality of it being there."
T3: "Seeing the pumping station for the first time and I was really impressed with that; that was a pretty amazing thing. Watching the water come out for the first time was pretty cool." In addition, "I remember a lot of us going to DC a lot."

Q8 What were some of the most pivotal moments of the Project?

F: "Getting the Project off Carters hit list and the whole tribal settlement." In addition, "when we were able to get the White House and Office of Management and Budget to support the funding for it. That was a key point because OMB basically holds the purse strings and they can stop stuff."
L1: "The groundbreaking was very positive."
L2: No formal response.
L3: "It was the downsizing."
O1: "The pivot moment was when it got sent to Campbell, on the appropriations committee in the Senate. When you're the head of the appropriations committee you get what you want."
O2: "The midnight passage by Congress of the final Project."
S1: "Federal legislation passing . . . and of course the subsequent amendments to its original passage of the Tribal Settlement Act."

S2: "In the 80s the Fish and Wildlife Service determined there were a few squawfish in the San Juan River and the Project wouldn't jeopardize them. They went into a backroom sometime around 90-'91 and reached the opposite conclusion."
T1: "The 2000-era [tribal] Settlement Agreement."
T2: No formal response.
T3: "I think the real issues probably occurred in the downsizing of the Project. I think that's when the most risk was happening."

Q9 What were the largest A-LP Project disappointments?

F: "The local opposition was something I never understood and part of it I think went back to Reclamation's unwillingness to work with the opposition."
L1: "Cutting the size of the irrigated land Project downsizing."
L2: "EIS, endangered species."
L3: "Downsizing."
O1: "It's a waste of money, a waste of energy, a waste of resources."
O2: "Water quality, fish habitat in decline, and aggravated climate change."
S1: "Cost overruns."
S2: "Irrigation portion being removed."
T1: Current litigation "We didn't realize that there would be all these issues arising relative to the permit."
T2: "The continued denial by Congress to fund it."
T3: "I think it's really disappointing that we're going through processes now that we are. I think it's real disappointing that partners in this Project are now sitting across the table with a judge on the other side—it's ridiculous."

Q10 From a solutions perspective, what worked in the Project process?

F: "The budgeting—OMB and getting the Project off the hit list." In addition, "the 638 Authority."
L1: "Meeting with the different congressmen in Washington D.C. and meeting them in person."
L2: "The Project wouldn't have happened without a few of us saying we are going to cooperate, we're going to work together, we're all going to collectively get what we want, but we're going to work together."
L3: "What worked was the politics with all elected officials except the one from Denver."
O1: "The legal stuff and the lobbying stuff."
O2: "Public pressure I guess worked at some level. I guess you could say it was a compromise and in a compromise no one is happy."
S1: "Working on the same team—pushing, pulling in the same direction for a successful resolution."
S2: "The coalitions."

T1: "I would say that the reason for the Project success was that we had a very strong commitment from all of the partners."
T2: "Without the people realizing how important that water is and coming together and supporting one another."
T3: "We made a lot of sacrifices in contracting."

Q11 What did not work in the Project process?

F: "The constituency for Reclamation changed in the Carter administration."
L1: "The first thing that we did that we shouldn't have was to cut out the dryside" and "I'm not very happy with the press."
L2: No formal response.
L3: "Communication with the opposition."
O1: "It is so absolutely absurd."
O2: "Bottom line is that by the time the FSEIS came out everyone was weary and they won on the weariness basically."
S1: "When the Project was larger there were some issues with environmental organizations down there and that was problematic and not working."
S2: "At times the coalition was criticized for not working with the environmentalists." In addition, "the media did not work."
T1: "We should have worked out all of the water permit issues before the smaller version of the project was authorized in 2000. It is absurd that we are now in litigation concerning the permit."
T2: "A lack of knowledge of what all needs to be addressed before you start a project." .
T3: No formal response.

Q12 From a political perspective, what worked and did not work in the Project process?

F: "The 638 process and the collaborative efforts that were undertaken to get the Project funded."
L1: "Trips back to DC."
L2: "Well all of our congressional delegation worked together."
L3: "Politics with elected officials."
O1: "The Project was on track until Earth Justice sued them over the endangered species and put a halt to the whole thing."
O2: "The political avenue that we could fight this on was all in Washington DC. Even then it was a complicated place to be involved in a fight."
S1: "In terms of Democrats and Republicans alike have supported this Project for decades and that really worked."
S2: "Again, the coalition."
T1: "What's not working today is sort of the breaking in that coalition."
T2: "Trips back to DC and collaborations. What didn't work was the lack of Congressional knowledge about the importance of Western water."

T3: "I think moving forward without a construction contract I'm sure had some political, from the executive branch."

Q13 Does the Project establish an example for future collaboration on other projects? If yes, in what ways? If no, why?

F: "The model of Animas has been used in a number of places. . . . The model is to satisfy the non-Indian water rights at today's efficiencies and satisfy the tribal water rights with modern efficiencies."
L1: No formal response.
L2: No formal response.
L3: "Nope—in today's society you just don't do things that way. You work with the opposition first."
O1: "The water boys and the politicians all agreed that this is a wonderful idea and we need this Project and we're not going to pay for it. . . . It worked great from that collaboration perspective."
O2: "No, I think until the water community is willing to have a democratic process in their boards then they have proven that they are not interested in truly representing the public."
S1: "I think so . . . Being able to build the storage was a critical piece. If you can come up with the [funds] to build the storage that can be an invaluable piece of any tribal settlement."
S2: "You bet. Look at the coalition and how they stuck together no matter what."
T1: "Yes . . . the collaborative cooperation make it work. . . . I think that A-LP set a pretty good example for that."
T2: No formal response.
T3: "I think it definitely does, I think this is a great model. When you have people together who all want to solve the same goal and they're willing to make certain sacrifices to make that happen."

Q14 What was your organization's position on removing irrigation from the Project?

F: "Everyone in Reclamation was disappointed, but I think at that point in evolution Reclamation had pretty well said we just want to do what the local people want to do."
L1: "We were disappointed when we were asked by congress to cut the size of the irrigated land in Colorado."
L2: "We were really supportive of the irrigation part, we supported it to the very end. . . we never indicated that we wanted the irrigation part removed."
L3: "We were disappointed when it got left out."
O1: "We forced it—we didn't think taking out the irrigation made the Project any good, it didn't make it any better."

O2: "It would have taken the water from downstream irrigators, specifically News Mexico, and given it to dry side irrigators."
S1: "We resisted that. We thought that was an important component of the Project. However, it was more important that we get the Project built than to ultimately stand firm on that specific issue."
S2: "Everyone lamented the loss of irrigation."
T1: "We were not a beneficiary of the irrigation in the first instance so it wasn't something that affected us."
T2: "Not in favor—that was the main reason for the Project—irrigation was part of it."
T3: "No, we didn't support that at all."

Q15 What are your thoughts on the A-LP Project turning from an agricultural project to a tribal water rights project?

F: "During the Carter administration the number of employees in Reclamation almost dropped by half. . . . Those who were left … [had to] agree to accept the new reality which was stated to be no more irrigation."
L1: "That was a big blow—what are they going to do with the water? They've got it in a big reservoir but they can't get it out."
L2: "We were supportive because of the effort we made years before that to work cooperatively to work together."
L3: "We were in favor of tribal water rights because we were heavily involved. It was an irrigation project from the get-go that solved the Winter's water rights."
O1: "The Winter's Doctrine says they get rights to the water to fulfill the purposes of the reservation. . . . only way you could quantify the amount of water that the tribes are entitled to is in practicable, irrigable acres."
O2: "On the agricultural issue it's taking federal money to pay for water to be turned into a private property right . . . On the tribal issue, I'm delighted to have the tribes get water."
S1: No formal response.
S2: "It's the best we could get. It does do something, don't get me wrong. Satisfying the federal reserved water rights is a big deal so that non-tribal irrigators get to keep what what little they've got."
T1: "The Project was always going to be an important part of the 1988 settlement. I wouldn't say that removing the irrigation component necessarily made it a tribal settlement project."
T2: "I think the idea was that down the road they would be able to utilize that water."
T3: "It was always a tribal project. From my understanding the tribes initiated it, the tribes get the bulk of the benefits out of it."

Q16 How would you characterize interagency partnerships associated with the A-LP Project?

F: "Interagency partnership with the Bureau of Indian Affairs worked."

L1: No formal response.
L2: "The BOR didn't start out to be difficult to work with until about halfway through the Project."
L3: No formal response.
O1: "They worked great—they all got together and agreed that the taxpayers should flip the bill."
O2: "It's a pretty remarkable set of partnerships involved. I don't know how they all kept together."
S1: "CWCB was a key driver. The Division of Water Resources of course in terms of the administration of the Project and water rights involved."
S2: "Coalitions. The state agencies worked and were in the coalition, the federal agencies were not."
T1: "Definitely a learning experience for us al."
T2: "I think it was a good collaboration."
T3: "Very few conflicts and when we did hit 'em we did a really great job of getting over them."

Q17 The Project required over 50 years to plan, design, and construct. How did the needs and societal acceptance of large water infrastructure change over the long development period?

F: [Quoting his father] "Well our society values have changed and what you're doing today to convert it to something useful for the people there is the right thing to do."
L1: "The business people and the old-timers were all for the Project. The influx of people moving into Durango were always against it."
L2: "I think all of the people in Colorado and New Mexico that were involved became a whole lot more conscious of the water needs of those areas and a whole lot more interested in what was going on in the water world."
L3: "Nobody ever used to worry about M&I water. Changing from a strictly agricultural background to one that is driven by other forces—mainly tourism."
O1: "In Washington water projects fell out of favor."
O2: "I think that society has a long way to go to understand how water is used and to prioritize its use."
S1: "That balance between building a larger storage bucket that could supply irrigation needs reflected changing social norms in terms of protecting the environment and protecting instream flow values."
S2: "So the need is for more municipal water even though the municipal water is a tiny fraction of what's needed for irrigation."
T1: "So I think that the blueprint here is that for the Bureau of Reclamation to continue to build water projects they're going to have to work with Indian tribes."
T2: No formal response.
T3: "I think the counties and the state embrace the tribes, they've understood how working together they can achieve so many things . . . in large part because of A-LP we are much better partners with our regional folks."

Q18 How has the Project impacted the lives of local individuals and communities?

F: "I think from a Native American perspective the success of Weeminuche Construction has shown other tribes around the country that through the 638 process they can take control of their own destiny."
L1: "It didn't do anything for the irrigators."
L2: No formal response.
L3: No formal response.
O1: "It decreased the habitat on the Animas River, it destroyed the number one elk habitat in the state of Colorado."
O2: No formal response.
S1: "The importance of the reservoir for recreation. When you've got a recreational amenity within a mile of a major hub and yet you can't use it for recreational purposes, I recognize that that's been difficult."
S2: "It's impacted the irrigators in the La Plata Basin the most obviously because a lot of them grew up thinking they were going to have an irrigation project in their middle years and it didn't happen."
T1: "Anytime you are dealing with a population where up to 40% of the people don't have running water in their homes, getting a reliable source of water will help to alleviate that problem and have a real positive impact."
T2: "I think parts of the citizens of Durango see there might be a benefit for them not only with potable water, but recreation."
T3: "We learned from each other as we moved through this process and I think one of the things that a lot of people did not know was about the cultural sensitivity of what that Project means."

Q19 Other thoughts, comments, perspectives?

F: "First I'm pleased that you're doing this work because this arena of natural resources management does not get documented very well and I'm happy to see someone doing that."
L1: "It would have been the savior of La Plata County if we got it put in."
L2: "The Project taught me to never give up and it also taught me to be understanding of other people's needs."
L3: "I'm sure glad we have the Project. I think it will serve us well."
O1: "I could go on for days. This is what happens when you have a small group of people who aren't accountable to the voters or the taxpayers spending taxpayers money."
O2: "I hope that was useful for you to get a different point of view."
S1: "I think this Project is a good example of what you can do when you put your mind to it, when there is persistence, people willing to compromise and work together to try to satisfy our water supply needs."
S2: "The recreation issue is kind of funny. I get a kick out of watching it because just in my view it's so minor. It's typical A-LP—it takes a long time to do anything."

T1: “The only footnote in all of this is that I think the Navajo Nation owes a huge debt of gratitude to the engineer I worked with on this--John Leeper.”

T2: “I think for us—the two tribes is now to work together or sit down to look at plans to utilize that water and put that water to use.”

T3: “I generally am concerned about the future of A-LP. I think that the people who are involved in A-LP need to continue to look at it in the spirit of cooperation.”

Excerpts from Transcripts:
Master Coding Responses

Coding	*n*	Comments and Quotes
Negative	5	• BOR excessively bureacratic (Q1; S2). • Illegal formation of a taxing agency (Q1; O1). • No taxpayer involvement (Q1; O1). • Undue influence of a law firm (Q1; O1). • Unrepresented board of directors (Q1; O1).
Negative	5	• "People were looking for a federally funded project to give them a private property right of water" (Q3; O2). • "There is no purpose or need for the Project" (Q3; O1). • "This is a religion to these water people, they think storage is good—doesn't matter the cost, someone else is paying for it" (O1). • "Through the advice of the lawyers and everybody we were told we ought to take the two Indian tribes in with us because they have a lot of pull. And they do—they pulled it right away from us" (L1). • "To get federal money for the local economy and to keep the water in Colorado" (O2).
Negative	4	• An economically unfeasible Project (Q4; O1). • Destroyed wildlife preserve (Q4; O1). • No demonstrated need for the Project (Q4; O1). • Taking water from downstream irrigators (Q4; O2).
Negative	4	• BOR and the fact that "the cities were getting different stories" (Q5; L2). • BOR was putting up alot of roadblocks--that was about the time they didn't want to build any more projects (Q5; L1). • "Reporting was somewhat negative in terms of advocating the environmental issues, but not the tribal or local water supply benefit issues from the Project. Basically the Durango Herald became an arm of the opposition" (Q5; F). • "There was about $45 to $50 million difference in that Project. My goal was to find out if we were getting a good deal or not…and we found out that we were not getting a good deal" (Q5; L2).

Coding	*n*	Comments and Quotes
Negative	4	• "The local stakeholder process…has been Gerrymandered" (Q6; O2). • "The tribes have been burned in the past by people doing this sort of thing. . . . how we're going to do this great report and then they just trashed them. Particularly movies and newspaper reports—media" (Q6; S2). • "The undemocratic process of the A-LP board" (Q6; O1). • "We had to fight our own tax money dollar-for-dollar that was being used against us and against our own interests" (Q6; O1).
Negative	1	• "The midnight passage by Congress of the final Project" (Q8; O2).
Negative	4	• A waste of energy, money, and resources (Q9; O1). • "Cost overruns and that was a big issue for the participants and for the State and I'm sure that was disappointing" (Q9; S1). • "The continued denial by Congress to fund it" (Q9; T2). • "Water quality, fish habitat in decline, and aggravated climate change" (Q9; O2).
Negative	5	• The local media did not work in the Project process (Q11; L1, S2). • "The whole Project didn't work, it is so absolutely absurd" (Q11; O1). • "There is still no purpose and need" (Q11; O1). • "We shouldn't have agreed to cut out the dryside" (Q11; L1).
Negative	4	• "At some point the politics does get in the way. . . . At some the point politics urges a decision to be made even when it may not yet be the time to make the decision" (Q12; T3). • "Lobbying that was paid for by taxpayer dollars. To have my tax dollars funding someone to go to DC to advocate for a Project while I'm paying out of my own pocket to advocate against it—that's problematic" (Q12; O2). • "The Endangered Species Act was one of our first big roadblocks" (Q12; L1). • I think politically what didn't work was when we fell into our roles when we were working against each other or across purposes that didn't work (Q12; S1).

Coding	*n*	Comments and Quotes
		• In today's society you need to work with the opposition (Q13; L3).
Negative	1	• "The people who had a claim were the Ute Mountain Ute's but their claim was on the Dolores and Mancos Rivers, not the Animas. And once they took water out of the Dolores Project they extinguish any claims" (Q15; O1).
Negative	2	• "Individuals in Reclamation may have been in favor [of the Project] but the organization, because they worked for the administration—they were somewhat hand tied. Interagency partnerships worked well between local and state but not federal" (Q16; F).
		• The BOR was either neutral or difficult to work with but that they had not started out that way at the beginning of the Project (Q16; L1).
Negative	1	• "This is a whole Rube Goldberg" (Q17; O1).
Negative	3	• "It's impacted the irrigators in the La Plata Basin the most obviously because a lot of them grew up thinking they were going to have an irrigation project in their middle years and it didn't happen" (Q18; S2).
		• "It decreased the habitat on the Animas River, destroyed the number one elk habitat in the state of Colorado. They put off bounds a wonderful recreation area…as far as positive impacts there's zero" (Q18; O1).
		• "It didn't do anything for the irrigators" (Q18; L1).
Negative	1	• "This is what happens when you have a small group of people who aren't accountable to the voters or taxpayers spending taxpayers money. Nobody along the line was accountable…The A-LP Project was an ethics free zone" (Q19; O1).

Coding	*n*	Comments and Quotes
Positive	1	• Collaborations (Q5; S1).
Positive	1	• "Professional acquaintances . . . that are friends of mine as a result of all the work we did together. So much of what we're talking about is about relationships, about building relationships and about building coalitions of support" (Q7; T1).
Positive	7	• "I guess you could say it was a compromise and in a compromise no one is happy. A compromise of this scale no one was happy and that's kind of the way it worked out" (Q10; O2). • "Once you come together with an agreement everyone's working on the same team—pushing, pulling in the same direction for a successful resolution. We didn't have divided interests going at one another in the context of litigation" (Q10; S1). • "Reclamation and the Weeminuche Construction Authority were able to work through the construction issues and get this thing built as well as we did" (Q10; T3). • "The coalition. The two states, the water users in both states, the tribes, the non-Indian water users. They simply wouldn't take no for an answer" (Q10; S2). • "The people realizing how important water is and coming together and supporting it" (Q10; T2.) • "The Project wouldn't have happened without a few of us saying we are going to cooperate, we're going to work together, we're all going to collectively get what we want, but we're going to work together" (Q10; L2). • "We had a strong commitment from all of the partners" (Q10; T1).
Positive	9	• Coalitions and collaborations, to include group trips to Washington, D.C. (Q12; F, L1, L2, L3, S1, S2, T1, T2, T3).

Coding	*n*	Comments and Quotes
Positive	9	• The A-LP Project establishes an example for future collaboration on other projects (Q13; F, L1, L2, O1, S1, S2, T1, T2, T3), especially as it related to tribal water rights and the 638 Authority.
Positive	6	• Interagency partnerships worked well (Q16; L3, O1, O2, S1, S2, T2).
Positive	4	• Tribal: The 638 process was a "poster child for tribes to take control of their own destiny" (Q18; F). • Tribal: The Ten Tribes Agreement being "very, very helpful not only to help the non-Indians understand tribal values and interests but conversely" (Q18; F). • Tribal: "They're constructing a waterline to bring drinking water to people don't have running water in their homes. . . . I was choked up, it really warmed my heart to see that happening, it was a great feeling" (Q18; T1). • Related to understanding tribal cultural sensitivities (Q18; T3).
Positive	3	• "I think this Project is a good example of what you can do when you put your mind to it, when there is persistence, people willing to compromise and work together to try to satisfy our water supply needs" (Q19; S1). • "I think water out of the Ben Nighthorse-Campbell can be used for exchange to mitigate a call on the Colorado River if ever. So, I'm glad the Project's there" (Q19; L3). • "The Project taught me to never give up and it also taught me to be understanding of other people's needs…At some point the only way you're going to get it done is to be cooperative and work together" (Q19; L2).

Coding	*n*	Comments and Quotes
Problem stream	1	• Tribal water rights (Q1; F).
Problem stream	6	• Water shortages for irrigation (Q2; L1, L2, L3). • Tribal water rights (Q2; T1, T2). • Municipal and industrial water (Q2; L2).
Problem stream	6	• Tribal water rights (Q3; F, L3, S1, T1, T2, T3).
Problem stream	5	• Agricultural/irrigation-related (Q3; L1, L2, L3, S2, T1).
Problem stream	3	• Municipal and industrial water supply (Q3; F, L2, T1).

Coding	*n*	Comments and Quotes
Conflict	1	• "They knew we were short of water but we got along pretty good until the New Mexico water compact was signed in 1922 and that took half of our water and sometimes all of the water" (Q2; L1; ultimately recoded recommendation).
Conflict	2	• "Eastern lack of understanding of the importance of water in the West" (Q4; T3). • "The lack of communication and collaboration with the environmental community" (Q4; L3).
Conflict	1	• Colorado and New Mexico irrigators; "Small irrigators on the Animas in New Mexico were afraid the Project was going to steal their water, which it was designed to do if they ever get it online" (Q5; O2).
Conflict	1	• Current litigation; "What I've discovered in 30 years of water rights litigation in the West is that litigation doesn't bring any result that benefits anybody and that nothing happens out here without active collaboration" (Q6; T1).
Conflict	2	• Litigation (Q7; O1, T2).
Conflict	4	• Current litigation (Q9; T2). • "Reclamation's unwillingness to work with the opposition" (Q9; F). • Current litigation (Q9; T1, T3)
Conflict	6	• Working with the opposition (Q11; L1, L3, S1, S2). • Conflict related to current litigation. "We should have worked out all of the water permit [sic] issues before the smaller version of the project was authorized in 2000" (Q11; T1). • "It is absurd that we are now in litigation concerning the permit [sic, in New Mexico water rights are referred to as permits]" (Q11; T1).
Conflict	3	• "The BOR was trying to get out of building dams so that hurt us—they didn't care. When the dam was being built the Bureau was not very nice. They didn't work with us" (Q12; L1). • "The Project was on track until Earth Justice sued them over the endangered species and put a halt to the whole thing—put a halt to it for 10 years" (Q12; O1). • "What's not working today is sort of the breaking in that coalition" (Q12; T1) due to current litigation.

Coding	*n*	Comments and Quotes
Politial stream	1	• Carter's (1977-1981) "hit list" (Q1; F).
Political stream	3	• During the Carter administration "the Water Resources Council had changed those rules to where the costs were escalated, but the benefits were not escalated and brought back in. So that was one of the major issues" (Q4; F). • "Perception of the need for food changed in the 1970s from food being a priority to recreation being a priority" (Q4; S2). • "Reclamation was not friendly toward environmental issues in the 1970s" (Q4; F).
Political stream	3	• The 1970s and "getting the Project off of the Carter 'hit list'" (Q7; F). • The Romer/Schettler process of the 1980s and the associated local opposition (Q7; O2). • "The lobbying campaign and defeating the Project in the House of Representatives in 1996--that's the reason they pulled the irrigation off" (Q7; O1).
Political stream	2	"Babbitt said if there was one acre of irrigation the Project would not be built" (Q8; L1) • "In the 80s the Fish and Wildlife Service determined there were a few squawfish in the San Juan River and the Project wouldn't jeopardize them. They went into a backroom sometime around 90-'91 and reached the opposite conclusion—there's a few squawfish in the San Juan River and the Project would jeopardize them. That's what stopped the big Project" (Q8; S2).

Coding	*n*	Comments and Quotes
Political stream	2	• "We got sold down the river by the Clinton administration" (Q9; O1). • Babbitt administration and cost sharing (Q9; L2).
Political stream	1	• "Getting the Project off the Carter 'hit list'" (Q10; F).
Political stream	1	• "The constituency for Reclamation changed in the Carter administration. It used to be a very broad constituency that included not just the irrigators and the water users but also power users out of Bureau of Reclamation dams" (Q11; F).
Political stream	1	"The A-LP Project was at the forefront of the environmental movement" (Q13; L3).
Political stream	1	• The Carter administration (1977-1981) and "the new reality which was stated to be no more irrigation" (Q15; F).
Political stream	1	"In Washington water projects fell out of favor. They kept telling us that this is the last big water project. . . . But Reagan did the most damage of anyone to the ALP. Ronald Reagan stopped it. . . . the attitudes in D.C. changed against big water projects" (Q17; O1).

Coding	*n*	Comments and Quotes
Recommendation	2	• "Federal economic analysis does not look at escalated benefits of projects" (Q4; F). • "The process of getting the resource funds from the Bureau of Indian Affairs has not been easy" (Q4; T2).
Recommendation	2	• "Representatives of each district should be appointed by their elected representatives" (Q6; O2). • "There ought to be a mechanism that citizens should have a voice in how this gets run" (Q6; O2).
Recommendation	1	• "The 638 Authority was a success. The watershed of the 638 program for this Project was phenomenal" (Q10; F).
Recommendation	1	• The need for an environmental guidance document (Q11; T2).
Recommendation	1	Related to crop value, evaporation, and efficiency (Q14; O2).
Recommendation	1	• Related to mitigated lands issue (Q15; L1).
Recommendation	1	• "In BIA it needs to come from the top. Things that generate from the bottom never percolate, you never see them" (Q16; F).
Recommendation	1	• The need for metrics of highest food value, highest calorie value, highest protein value (Q17; O2).
Recommendation	1	• Related to the need to look back and document natural resource management (Q19; F).