

Federal Bureaucracy and Locality

A Case Study of the Uncompahgre Valley Water Users' Association's Management of its Water Commons

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A stylized graphic at the bottom of the page. It features a black silhouette of a mountain range with several peaks. Below the mountains are three horizontal bands of color: a top black band, a middle blue band, and a bottom black band. The blue band has a wavy, irregular top edge, suggesting water or a river. The text "Colorado Water Institute" is overlaid on the right side of the black band above the blue band.

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Abstract

Employing case study evidence drawn from the Uncompahgre Valley Water Users' Association (UVWUA), the research question is addressed: to what extent is either of two ideal type theoretical models (Freeman, 1989) supported, refuted, and/or found in need of modification? Employing longitudinal comparisons of the UVWUA over three distinct time periods (1902-1931, 1932-1949, and 1950-present), this research has examined how the UVWUA has changed its organizational attributes over time. In the beginning, the UVWUA was organized in such a way that significant problems developed and undercut project potential for decades. Eventually, the organization changed to address these problems and, after 1950, has increasingly become a successful steward of its common property resource (CPR) – irrigation water.

The analysis supports the conclusion that when the organization was most problematic it lacked attributes of successful common property resource organizations as posited by several theorists. Furthermore, the Association lacked attributes posited to be important to successful linkages with central state bureaucracies. The UVWUA instituted changes that correspond to what has been posited for success by theorists. Today, the UVWUA, as a common property resource organization, still exhibits attributes that theorists have seen as being critically important to successful, long-enduring CPR organizations. This research supports the hypotheses advanced in both ideal type models and modifications are proposed.

Keywords: Uncompahgre Valley Water Users' Association, U.S. Bureau of Reclamation, Social Organization for Irrigation, Common Property Resources, Common Property Resource Theory, Linkage to Federal Bureaucracies, Montrose, Colorado, Gunnison Tunnel, Reclamation Service, Reclamation Projects.

CONTENTS

INTRODUCTION.....	1
PART I: THEORY AND METHOD.....	4
Chapter 1: Theory.....	4
Key Variables.....	4
Linkages.....	6
Conclusion....	9
Chapter 2: Methods.....	10
PART II: HISTORICAL BACKGROUND.....	13
Chapter 3: Project Features.....	13
Project History.....	16
The Reclamation Act of 1902.....	20
The Rise of the Engineering Class.....	21
Chapter 4: The Creation of the Uncompahgre Valley Water Users' Association....	23
Construction Begins.....	24
A Grand Party.....	27
System Completion.....	28
The UVWUA Today	29
PART III: FINDINGS.....	32
Chapter 5: Original Organizational Design – Time Period 1, 1902-1931.....	32
Articles of Incorporation.....	32
Early Federal-Association Dealings.....	34
The Organization of the UVWUA and Reclamation Service – 1902-1913.....	38
Conflict Begins.....	40
Conflict Escalates.....	43
Reclamation Reorganization.....	47
Problems with Reorganization.....	49
A Peak of Conflict – 1923 and 1924.....	53
Despair Returns.....	65
Chapter 6: Organizational Change – Time Period 2, 1932-1949.....	75
World War II and the 1944 Reclamation Reorganization.....	78
Mitigating Conflict: The Contract of 1948.....	80
Chapter 7: Current Organization – Time Period 3, 1950-Present.....	83
PART IV: ANALYSIS AND CONCLUSION.....	86
Chapter 8: Analysis.....	86
Internal Organizational Form – Time Period One.....	86
Internal Organizational Form – Time Period Two.....	88
Internal Organizational Form – Time Period Three.....	89
Internal Organizational Form – Conclusions.....	89
Linkage to Federal Bureaucracies – Time Period One.....	91
Linkage to Federal Bureaucracies – Time Period Two.....	92

Linkage to Federal Bureaucracies – Time Period Three.....	93
Linkage to Federal Bureaucracies – Conclusion.....	94
New Proposition.....	94
Chapter 9: Conclusion.....	96
APPENDIX A – ORGANIZATIONAL MODELS.....	98
APPENDIX B – PHOTOS.....	105
APPENDIX C – INFORMED CONSENT.....	110
REFERENCES.....	112
FIGURES	
1.1. Ideal Type of Internal Organizational Form.....	5
1.2. Model of Linkage to Central Bureaucracies.....	8
2.1. Methodological Reasoning of Theory 1.....	10
2.2. Methodological Reasoning of Theory 2.....	11
5.1. Organizational Chart 1903.....	39
5.2. 1944 U.S. Bureau of Reclamation Organizational Chart.....	80
8.1. New Proposal.....	95
MAPS	
3.1. Satellite View of the Uncompahgre Valley.....	14
3.2. Uncompahgre Project.....	15

Introduction

Employing a case study of the Uncompahgre Valley Water Users' Association (UVWUA) from the early twentieth century to the present day, the research produced a thick and rich description of the UVWUA to evaluate two theoretical models that have emerged in the common property resource (CPR) tradition. One theoretical model abstracts properties of CPR organizations internally, and the other abstracts attributes of the linkages of CPR organizations to a central authority. The research effort examined the following question: to what extent is each theoretical model supported, refuted, and/or found in need of modification?

Theoretical Background

Common property resource theories address how people organize collectively to do what cannot be done individually. This is prevalent in situations involving public goods and common property resources, such as irrigation canals and ditches, where individuals organize collectively to construct, operate, and maintain a large system to divert and deliver irrigation water. In the realm of local irrigation organizations that operate between the individual user and a central federal bureaucracy, David Freeman (1989), working within a common property resource tradition, developed theories about two aspects of this issue.

The first pertains to the structure of an organization. Freeman theorized that certain attributes must be in place for the organization to run well and be sustained. Freeman's other conceptual model addresses the linkages between local organizations and a central state authority (Freeman, 1989: 36-59). It was the objective of this research to investigate the experience of the UVWUA from 1902 to the present. The information gathered was employed to evaluate both theoretical models in order to ascertain whether the models were supported, refuted, and/or found in need of modification.

Historical Background

In 1906, the Denver and Rio Grand Railroad issued a pamphlet advertising the glorious Uncompahgre Valley in southwestern Colorado with its "permanent water supply" (Passenger Dept., 1906: 2). Inviting the "brave and resolute" to "share in Uncle Sam's bounty," the pamphlet praised the federal government for undertaking one of the greatest water projects of all times. The Uncompahgre Project, which diverts water from the Gunnison River through the Gunnison Tunnel into the Uncompahgre River, was to provide water to irrigate 150,000 acres of fertile soil. The Reclamation Service, recently created and eager to advertise one of its first projects, seemed to offer nearly-free water to accompany free land, as provided by the Homestead Act (Passenger Dept., 1906: 2):

By the generosity of this same government, this water is to be distributed over the valley and delivered to settlers on the land on such terms that it amounts almost to a free gift... The opportunities to share in this wonderful development are as wide as the [Uncompahgre] Valley itself. For the settler of very modest means, there are lands to be had free of cost....

However, by 1924, the project, which succeeded in enticing many, was labeled a “farce” (Moynihan, 1924a: 14). The costs of the project (\$3 million total at that point) were triple that of estimates given to farmers in 1904 when negotiations for the project were under way. To partake in the federal government’s feast, farmers were persuaded to mortgage their land to the federal government as insurance for repaying these costs. At the time, farmers were guaranteed repayment costs would not exceed \$25 per acre of land, but by 1908, the Reclamation Service threatened an increase of \$40 an acre or the cessation of work on the project (Moynihan, 1924b). Farmers were becoming desperate and distrustful of the Bureau.

As a buffer between farmers and the Bureau, the federal government from the beginning, required a local water users’ association be created to sponsor the irrigation project. The early Uncompahgre Valley Water Users’ Association was tightly controlled by the Bureau. When assessments needed to be altered, one federal official noted, “It is not anticipated that any trouble will be encountered in persuading the Water Users association to increase assessments to \$40 per acre.” Another remarked, “Any person signing the agreement and afterwards questioning its validity should be excluded or required to give additional security or guaranteed for good faith” (Moynihan, 1924b: 4). The federal government had a great deal of decision-making power in the local, ostensibly member-governed organization.

In 1932, the UVWUA (the oldest water users’ association in Colorado) officially took control of the Uncompahgre Project and has maintained it to this day (USBR, 2006a). Today, the organization functions smoothly and is applauded by many for its fine management. Clearly, at some point in history the conflict with the Bureau was resolved. What changes occurred that addressed the conflicts between the Reclamation Service (Bureau of Reclamation) and the local organization that led to the effective governance of its irrigation water commons?

Method

Qualitative information was gathered on the UVWUA and employed to constitute a comparative historical case study. A case study was the preferred research method because it fosters a thorough analysis of a single issue (Creswell, 1998). Such analysis enables the search for pertinent variables, and relationships among them, hypothesized to explain observed outcomes. Research on the UVWUA and its relationship with the Bureau of Reclamation was divided into three time periods: the early organization (1902-1931), the years of change (1932-1949), and the current organization (1950-present).

Methods of data gathering included document examination (newspapers, government documents, UVWUA records) and key informant interviews with participants identified through a “snowball” method. Each participant signed a consent form, guaranteeing confidentiality (see Appendix C for Informed Consent documentation). There were few problems with the document examination. Newspapers, organizational documents, and other information regarding the UVWUA’s history were plentiful. Key informant interviews were not difficult for the current and intervening organization, but were challenging for the early organization. Because conflict began soon after the project’s start-up in the early 1900’s, those most directly involved are now deceased. Key informants for this period were those who possessed mainly second-hand information.

The logic centered on a comparison of organizational attributes and an application of historical experiences to each of the two theoretical models across time. For example, the early experience (pre 1932) was compared to the models, followed by the years of change (19320-1949) and contemporary experiences post 1949. Given that it is generally agreed by observers that the contemporary arrangement is functioning and has worked well in recent decades, it was the fundamental research hypothesis that the contemporary arrangement would much more reflect the organizational attributes identified in the models than would the early experience.

Significance

The significance is threefold. First, a comprehensive account holds historical significance. There are many accounts of the Bureau of Reclamation over time, but not as many accounts of individual projects. The case of the Uncompahgre Project provides insight into a significant history of local farmer/settler interaction with a powerful central federal bureaucracy. As one of the first five Reclamation experiments, its story demonstrates the interplay of technical, political, and social organizational phenomena. To have a detailed record of the area's irrigation system and to read an account of how the UVWUA has transformed into a successful common property resource manager establishes a path for describing and analyzing the resource commons.

Additionally, there is theoretical significance in the assessment of two models advanced in the tradition of common property resource theories. Current CPR theories can be evaluated and new or revised hypotheses can be considered. Finally, in the realm of irrigation organizations, an examination into what does or does not work organizationally may be useful to those within these establishments by aiding in policy assessment.

PART 1: THEORY AND METHOD

Chapter 1 – Theory

Garret Hardin provided a classic early examination of the “tragedy of the commons” in reference to common property resource (CPR) schemes (Hardin, 1968). Common property is characterized by the fact that competitive users cannot be excluded from the resource at low cost and that the consumption by one user highly impacts the availability of the resource to another user. Examples of common property resources abound, but two domains frequently encountered are water use and livestock pastures. Hardin posited that given an open access grazing pasture, it is perfectly rational for one shepherd to increase his/her grazing as much as possible in the name of securing larger private gain. Since one herder cannot prevent the degradation imposed by others, a “race to ruin” will ensue. Individual resource appropriators have incentives to exploit the commons before competitors can do so. Individual rationality, thereby, leads to collective disaster. This dynamic is also found in the domain of water. Common property, to be sustained, has required social organization of the resource appropriators. People can do together what individuals cannot accomplish: successfully transcend the “tragedy of the commons” by organizing themselves to preserve and enhance the common property benefit stream (McKay and Acheson, 1987; Freeman, 1989; Ostrom, 1990; Oakerson, 1992; Hanna, 1996; McCay, 1996; McKean, 2000; Burger et. al., 2001; Folke et. al., 2005).

In this research, the CPR is represented by the Uncompahgre Valley irrigation system, where individuals organized collectively to manage their water commons. The sociological question is: what organizational design attributes work best for such long enduring management?

Key Variables

Many theorists have developed conceptual models incorporating key variables posited to lead to greater CPR organizational success (Freeman, 1989; Ostrom, 1990; Oakerson, 1992; McCay, 1996; McKean, 2000). A successful CPR organization has been defined as one in which members secure sufficient control over the use of the common property such that the resource commons is sustained, protects members from “free riding,” and wins loyalty and investment of members over the long run.

The variables for CPR success are assembled into *ideal type* formulations and are employed as conceptual benchmarks for making comparisons. They provide baselines against which to arrange observed phenomena and “real-world” events and measure the extent to which they are closer to or further from the abstracted attributes. They purposively simplify ideas, providing a “pure” set of characteristics for a studied item (Weber, 1947; Currie, 1968: 499; Freeman, 1992: 19, 32).

Elinor Ostrom (1990: 69-76) advanced eight “design principles” as her formulation of the attributes of successful CPR organizations such as are found in irrigation projects, fisheries, and forests. Ostrom extracted these design principles by examining many common property resource organizations. Freeman (1989) offered an ideal type conceptual model with which to distinguish between successful long-enduring CPR organizations and those at risk of failure (Figure 1.1).

Based on irrigation research he conducted in Southern Asia and the United States, he specified key variables for examination.

First, making use of site-specific knowledge is posited to be critical. This is served by hiring locals instead of cosmopolitans to manage the system, whether they are board members, leaders, or managers. Hiring locals increases the long-term capabilities of the system because locals have: 1) more of a vested interest in the community whereas cosmopolitans are more interested in “moving out and up” and 2) locals by virtue of the fact that they are born, live, and die in the resource community are subject to community sanctions in local networks in ways that cosmopolitans are not (Freeman, 1989: 26-27).

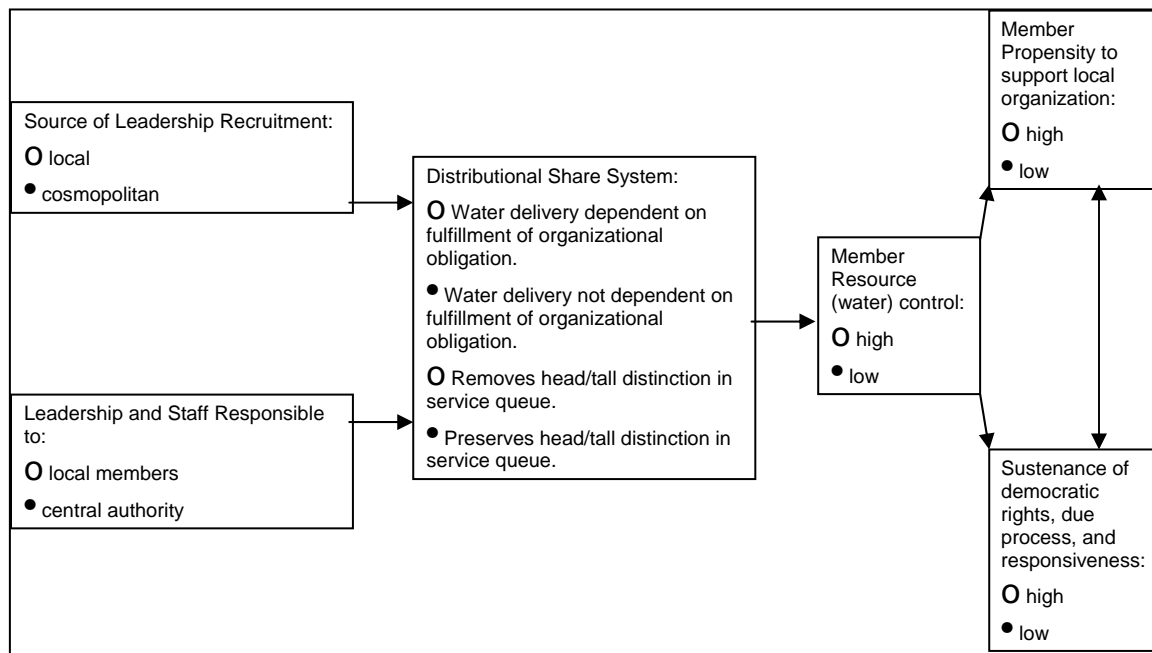


Figure 1.1. Ideal Type of Internal Organizational Form. Source: David Freeman, 1989: 25

Second, leadership and staff must be directly and primarily responsible to local members, not a central authority. When leaders are responsible to “look down” to members for definitions of success or failure, problems of leadership can be addressed quickly. If a manager is not acting on behalf of the interests of members, the locality can dismiss him/her expeditiously. If the leadership is “looking up” to a central bureaucracy for definitions of success and reward, local members are relatively powerless to dismiss problematic persons (Freeman, 1989: 26-27).

Third, a properly operated distributional share system must be in place. Water available to a given irrigation system must be divided into organizational share units. According to Freeman, “To be a member of an irrigation community, one must be defined as a member by some legitimate organizational principle associated with a definition of water shares. One does not become a member of an irrigation community simply by living in an area proximate to canal flows” (Freeman, 1989: 30). A share is proportional in three respects. First, one share represents a specified amount of water delivery as a proportion of available supply. Second, the amount assessed to each user for payment of water commons management costs is proportional to the number of shares s/he owns. Finally, voting power within the organization is proportional to the

number of shares owned. For example, a water user with 1/100 of the system's shares will pay 1/100 of the organizational costs, will exercise 1/100 portion of the votes, and will receive 1/100 of the available water supply (Freeman, 1989: 27).

Management must not allow water to be delivered without fulfillment of financial obligations. Potential "free riding" (i.e. obtaining benefits without paying costs) must be prohibited. Failing that, members who are fulfilling their obligations will eventually take notice and abandon the organization or choose to be "free riders" themselves (Freeman, 1989: 30-31). Refusal to pay will be individually rational if widespread, but it will lead to collapse of organizational self governance and effective CPR management.

In addition, head/tail distinctions in water delivery must be removed. "Water must flow in channels from point A to point B. By definition, farmers toward point B (nearer to the tail), all else being equal, will be disadvantaged in the matter of receiving water allocations relative to those increasingly near point A" (Freeman, 1989: 32). For a properly operating irrigation system, all users must be assured of their pre-arranged proportion of water regardless of where they are located on the system.

Freeman's final variable is that members' technical control over the resource (water supply) must be high. Appropriate tools must be available to implement organizational share system rules. Members' loyalty to the organization is rooted in its capacity to deliver the water at the proper time, in the correct amount at the necessary location.

When all these variables are properly fulfilled, Freeman concluded that members are more likely to support their local organization and democratic rights are more likely to be sustained. "Support is taken to mean 1) a willingness to invest personal resources to sustain the distributional arrangements for controlling water, and 2) abiding by organizational rules" (Freeman: 1989: 29-35). In general, this is a recipe for a well-run, sustainable local organization.

Linkages

A common property resource may prove too large for one local organization to capture and adequately manage. For instance, a new project may require capital to which the local organization does not have access. In such cases it follows that a local CPR organization may need the aid of a larger, often central bureaucratic, organization. The central organization's entrance into the system may be a way of funding and constructing a large project.

How the local organization is linked to the bureaucracy is just as important as the internal workings of the organization itself (Freeman, 1989: 45; Cernea and Meinzen-Dick, 1992; Folke et. al., 2005). It is hypothesized that there are two primary ways of organizing linkages between local organizations and central bureaucracies (see Figure 1.2). The two options are unitary and federal (Freeman, 1989: 46-47).

In a unitary model of linkage, money flows up from lower level units that gather assessments from farmers, retain a portion for their own use, and send the bulk of funds up to higher tiers. There is leadership overlap in the unitary model. According to Freeman, "To be a

member of the board or council at the primary [highest] level one must have simultaneously held membership at the [lower] second [or] tertiary levels” (Freeman, 1989: 47).

Policies in this unitary system are “top-down.” “Policy at each lower unit is subject to review and potential veto by each higher organizational unit” (Freeman, 1989: 47). If a lower level organization desires a funding increase or permission to make changes on the system it must make a request to the higher level(s) and await a response. Essentially, in the unitary model money “goes up” and decisions “go down.”

Problems associated with this type of linkage are many. First, with money flowing up, there is a tendency to constrain latitude for lower level decision-making. The budget is “zero-sum” and not site-specific. The highest level sets the budget for all, regardless of particular circumstances of lower units (Freeman, 1989: 48).

Unitary systems tend to be associated with inter-unit conflict. If a local leader is a board member of the higher tier, it follows that the leader’s locality may be in line to receive preferential treatment. With limited funds for all groups, preferential treatment of one particular group is a recipe for discontent between all groups. The unitary model is also posited to be associated with much delay in decision-making. Because decisions are made at the top and then handed down to local groups, delays are many. This is particularly problematic when an emergency arises. If a headgate becomes destroyed overnight, a local manager cannot send out his/her maintenance workers for repair work until she/he receives central authorization (Freeman, 1989: 47-48).

Another option for designing linkages between local CPR organizations and central bureaucracies is the federal model. Each organization tier operates its own share system and is owned as a property right. Instead of sending the bulk of assessment collections to higher tiers, each organizational unit raises its own revenues against its shares and, thereby, has its own budget to allocate as members see fit (Freeman, 1989: 49).

Leadership in the federal model is exclusive to each organization. No leader in one tier is a leader in the other (Freeman, 1989: 49). Each member of the board has only his/her own specific resource community to consider when making decisions. This ensures both resources and decision-making are site-specific and rapidly adaptive to ever-changing conditions.

Finally, decisions are not “top-down.” Lower level organizations do not have to wait for approval from the central bureaucracy to take action. Emergencies can be dealt with as soon as they arise. The local group has the ability to both create its own emergency fund and address problems without consulting an unaffected outside body.

Unitary Organization	Federal Organization
Meeting Local Common Property Resource Needs	
- Local Users Must Secure Authorization From Higher Authorities Allocating From Above	- Local Users Respond With Local Resources Under Local Control.
Money Flow	
- Upward	- Some Money Sent Upward, But Largely Kept Within The Local Group
Power	
- Concentrated At Top	- Decentralized
Agendas	
- Crowded At Top Because Resources Are Held At Top	- Decisions Taken by Each Organization Responsible For Each Segment
- Delays Are Common	- Few Delays Because Meetings Can Be Held Often & Upon Short Notice
Leadership	
- A Leader in One Group May Be A Leader in Another Linked Group	- No Leadership Overlap
Conflict	
- Conflict High	- Conflict Low
- Balanced Power = Gridlock	- Much Autonomy
- Unbalanced Power = Losers Withdraw	- Clear Accountability
- Unclear Understanding of Roles	- Clear Understanding of Roles And Organizational Design
- Each Group May Not See As Legitimate By The Others	- Each Group Sees the Other as Legitimate
Accountability to Standards	
- Upward	- Upward

Figure 1.2. Model of Linkage with Central Bureaucracies. Source: Freeman, 1989: 45-59.

Organizational actors in the network must grant legitimacy to each other. Legitimacy can be defined as the “formula by which individuals accept a power and consider their obedience as a just commitment” (Weber, 1964: 130-132; Badie, 2001: 8706). The central bureaucracy must be seen as legitimate – particularly with regard to its sanctioning ability. Seeing the bureaucracy as legitimate is a central condition of farmer participation (Freeman, 1989: 38-39). Finally, a local organization itself must be seen as legitimate by the bureaucracy and supported accordingly.

The benefits of the federal model are many when compared to the unitary model. Having autonomy (in both budgeting and decision-making) means that each group can better meet the

needs of all its members (Freeman, 1989: 49). The budget is no longer zero-sum. What one unit uses does not negatively affect the other. Autonomy in decision-making drastically reduces delays.

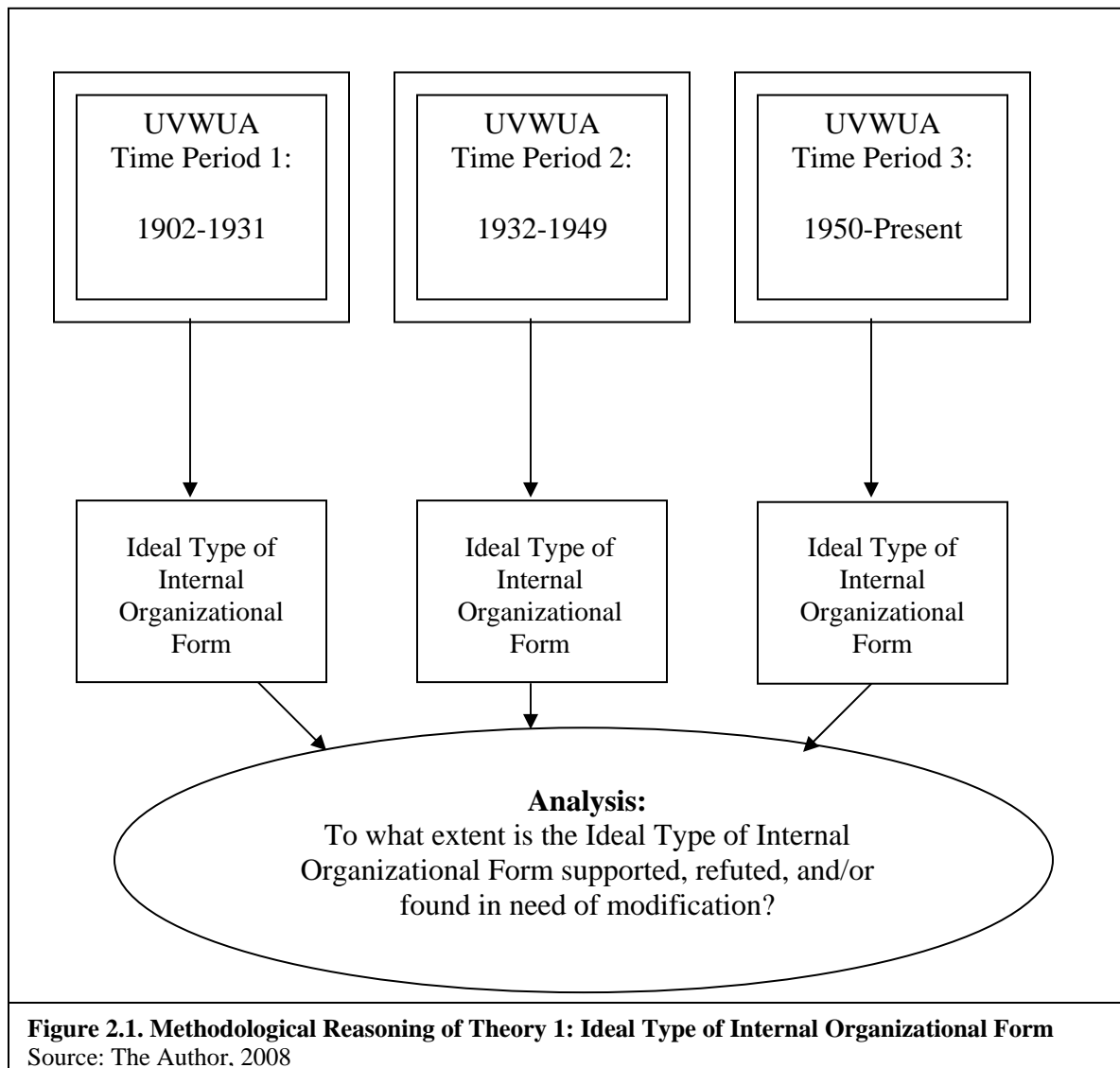
The federal and unitary models have one similarity. Accountability flows upward. As with the unitary model, the central bureaucracy in the federal model has the capacity to ensure compliance with central mandates. External central bureaucracies will exercise final authority with regard to general project policies and have the authority to halt water delivery if necessary (Freeman, 1989: 39).

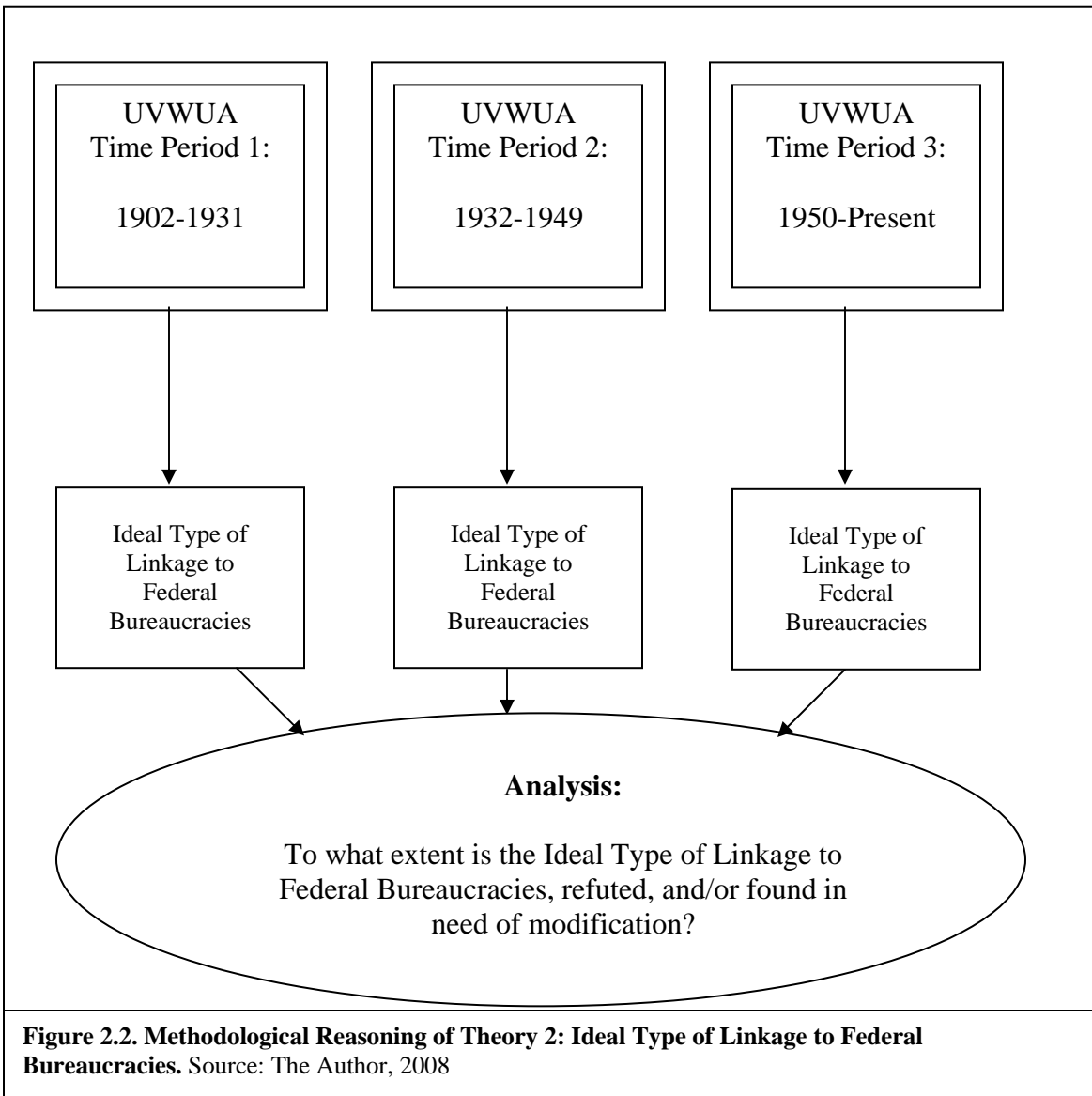
Conclusion

In sum, two conceptual models (viewed as ideal types) have been advanced for the purpose of guiding research on the experience of a local irrigation organization in western Colorado and its capacity to manage its water commons. One model involves key variables specific to a local CPR organization. The second examines relationships between a local organization and a larger central bureaucracy. It was the intent to apply these models to the analysis of the Uncompahgre Valley Water Users' Association in its relationship to farmers and the U.S. Bureau of Reclamation.

Chapter 2 – Methods

This research was designed to assess organizational change over time. Figures 2.1 and 2.2 represent the methodological reasoning. The historical record of the UVWUA has revealed three distinct time periods in its organizational life. The first (1902-1931) was characterized by serious problems that undercut effective management of the irrigation water commons. What were the attributes of the UVWUA at that time as compared to those posited by the conceptual models of form and linkage and advanced as being essential to success? The second historical period (1932-1949) was a time of change leading to a third period (post-1950) widely understood as a time of successful water management. The general hypothesis to be examined was: as the UVWUA changed its internal form and external linkage in its relationship with the Bureau of Reclamation, did variables constituting the respective theoretical ideal types change in the manner predicted? What lessons can be learned with what implications for theory and public policy in the domain of common property stewardship? It was the fundamental research hypothesis that the contemporary arrangement of the UVWUA would much more reflect the successful organizational attributes identified in the models than would the early experience.





The unit of analysis was the Uncompahgre Valley Water Users' Association. The organization was assessed by focusing on the three specific time periods. First, the research provided a thick and rich description of the UVWUA throughout its history, focusing on areas of conflict internally and between the Association and the Bureau of Reclamation. The observed historical experience during each time period was assessed by applying the two ideal type models. Attributes from time period 1 were compared with time 2 and time 3. The attributes were compared and assessed in order to address the adequacy, or lack thereof, in the conceptual models.

This study is another contribution to a series of studies of common property resource organization in the domain of water management (Freeman, 1989; Ostrom, 1992; Lepper and Freeman, 2010). Virtually all studies have been cross-sectional in design – i.e., they have centered on comparisons of organizations with similar water supply situations and enveloping socio-cultural environments at a given time. This study, however, is unique in that it examines

the organization of irrigation water in a longitudinal format. The same organization was tracked across time from a period of prolonged and profound trouble through a history of change in organizational relationships to a time of effectiveness and success.

The objective was to ferret out variables that can be hypothesized to explain the difference between failure and success in long-term stewardship of common property such as found in irrigation systems. Case studies cannot sustain testing of hypotheses, but they are essential to thinking theoretically about implications of concepts. Furthermore, it is possible to check observed historical experience against theoretical formulations posited in the literature.

There were no special difficulties in acquiring documentation on the UVWUA. The Denver Public Library holds an impressive collection of newspaper articles and other records pertaining to the early Association. Additionally, the UVWUA office staff in Montrose, Colorado was generous in providing documents.

Key informant interviews for the present-day organization were not difficult to attain (Informed consent documents can be seen in Appendix C). Informant interviews for information on the early association proved more difficult. Because the Association's birth and the conflict with the Bureau took place so long ago those most directly involved are now deceased. Most of the interviews regarding this period of time were "this-is-what-I-heard" in nature.

PART II: HISTORICAL BACKGROUND

Chapter 3 – Project Features

The Uncompahgre Project is located in the Uncompahgre Valley of Colorado and is part of the Upper Colorado River Basin. The valley sits amid an astonishing landscape of geological and ecological diversity. To the south lie the towering San Juan Mountains. The range houses thirteen peaks 14,000 feet or higher, including Mount Sneffels and Uncompahgre Peak, and covers about 12,000 square miles. It provides the local economies with tourism dollars from nearby ski resorts such as Telluride (Griffiths, 1984: xi-xv, 226).

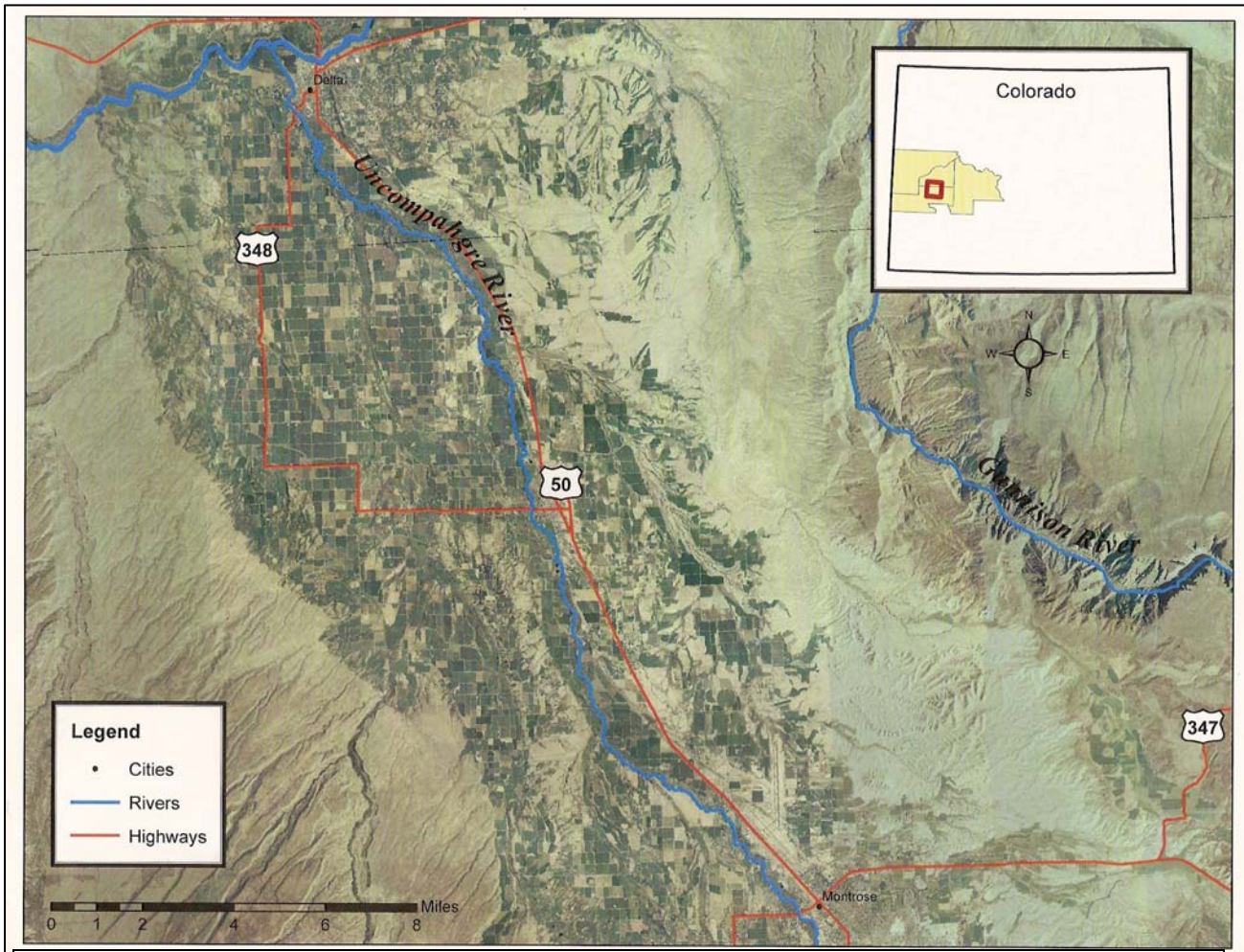
To the west lies the Uncompahgre Plateau. This flat mountain range extends around ninety miles from its connection with the San Juan Mountains northwest to Grand Junction, Colorado. Here its flat surface transmutes into dagger-like cliffs forming the Colorado National Monument (Marshall, 1998: 15-16). To the north sits the commanding Grand Mesa. Half the size of Rhode Island, this flat-topped mountain peaks at 10,500 feet above sea level (Huber, 1997: 201-204).

To the east lies the spectacular Black Canyon of the Gunnison. Twenty-two miles of this 100 mile canyon constitute a national monument and hold some of the most striking scenery in the world. Immense cliffs line this 1,750 foot deep and 1,100 foot wide ravine (Dolson, 1982: 1-3). The canyon's lesser width marks the main difference between it and the Grand Canyon of the Colorado.



A view of the Black Canyon with the Gunnison River.
(photo by author)

The Uncompahgre Irrigation Project extends from a point east of the town of Montrose to Delta, Colorado – and through both Montrose and Delta Counties – covering a length of about thirty miles. The elevation of project lands ranges from 4,950 to 6,400 feet above sea level. The Valley's climate is dry; the average precipitation is 9.68 inches per year (USBR, 2006c).



Map 3.1. Satellite View of the Uncompahgre Valley.

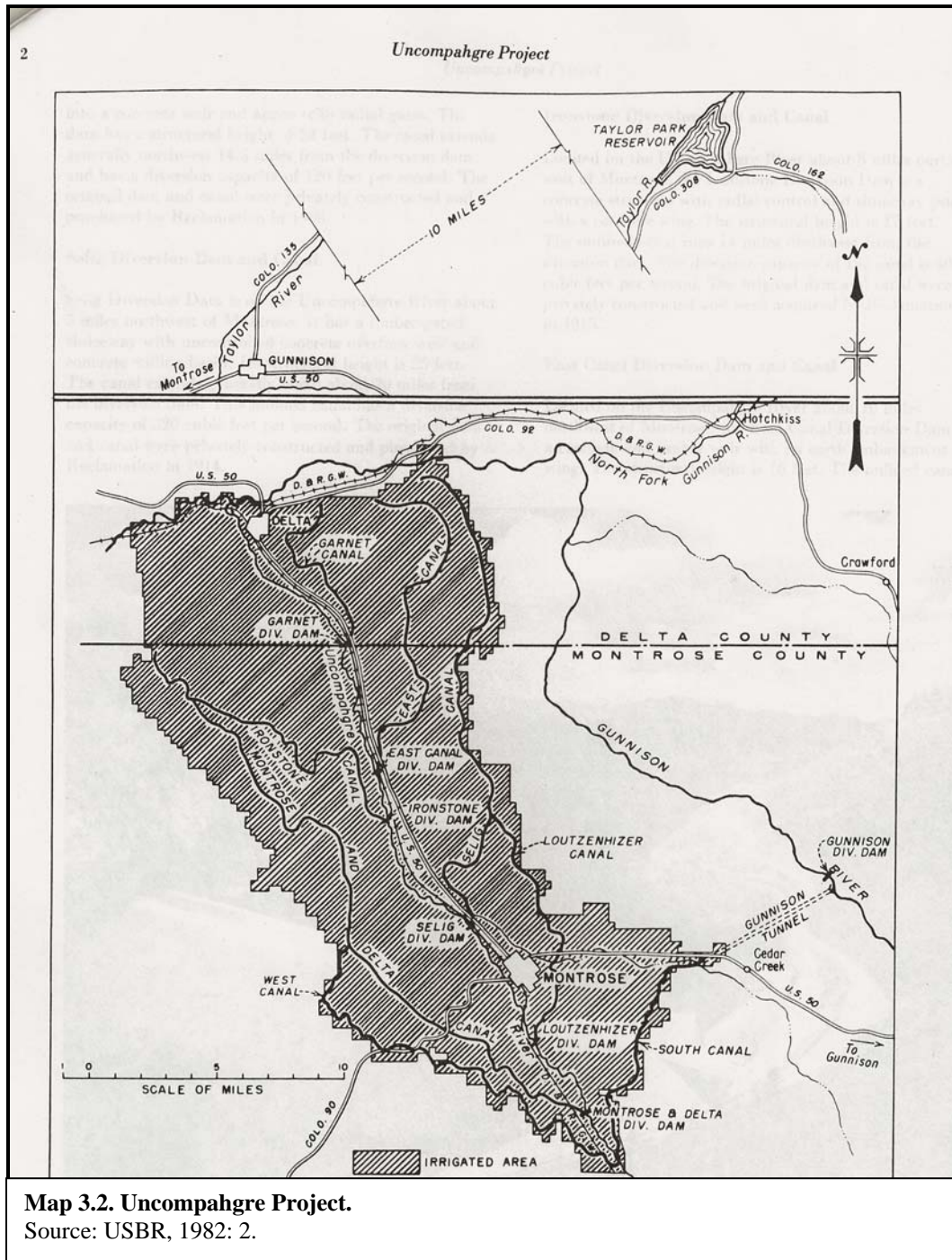
Source: Colorado Dept. of Natural Resources, The 2005 NAIP Imagery.

The contemporary project irrigates over 76,000 acres (Kennedy, 2007: 34). In 1992, reports noted a project population of 38,935 with 2,632 farms and 2,315 acres of residential/commercial lands utilizing project water. The primary crops in the region are alfalfa, corn, onions, barley, oats, wheat, potatoes, beans, and fruit (USBR, 2006a; USBR, 2006b). The region boasts nationally renowned produce, such as Olathe Sweet Corn. The project also supports ranching. Beef sales in Montrose County provide greater revenues than crop sales. In 2002, Montrose County reported \$21 million from crop sales and \$37 million from ranching (Kennedy, 2007: 35).

Regional prosperity is directly rooted in the irrigation system. Irrigation water comes from the Uncompahgre River (which runs the length of the valley) and the Gunnison River (which flows through the Black Canyon somewhat parallel to the Uncompahgre). The system's main feature is the Gunnison Tunnel. Bored through nearly six miles of canyon wall, the tunnel diverts the waters of the Gunnison River into the Uncompahgre River.

Major features of the Uncompahgre Project include the Gunnison Tunnel and Diversion Dam, Taylor Park Dam and Reservoir, "...7 diversion dams, 128 miles of main canals, 438 miles of laterals, and 216 miles of drains" (Clark, 1994: 2). The Gunnison Diversion Dam diverts

water from the Gunnison River into the tunnel. Both the dam and the tunnel sit in the Black Canyon about 12 miles east of Montrose. The dam “is a timber-crib weir with concrete wings and a removable crest. [It] has a structural height of 16 feet” (USBR, 2006a). It elevates both Gunnison River water and water from the Taylor Park Reservoir for gravity flow into the tunnel (USBR, 2006a) (see Map 3.2).



Built between 1905 and 1909, the Gunnison Tunnel is the pinnacle project feature. It is a rectangular bore 5.8 miles long, concrete-lined, and can accept 1300 cubic feet of water per second (cfs). Its cross section is 11 feet wide by 12 feet high (USBR, 2007b). From the tunnel, water flows into the South Canal which is mostly concrete lined and has a capacity of 1010 cfs. The Reclamation Service constructed this canal in conjunction with the tunnel. It runs southwest for 11.4 miles and delivers water directly to the Uncompahgre River. From this delivery point, the West Canal takes water. The West Canal was built by the Service in 1912. It has a maximum capacity of 172 cfs and is unlined. The West Canal's flow begins south of Montrose, heading northwest for about 20 miles (USBR, 2006a).

The Uncompahgre River serves other diversions. The Montrose and Delta Diversion Dam sits on the river 8 miles south of Montrose and is a "concrete gate structure with radial control and sluiceway gates" (USBR, 2006a). It delivers water to the Montrose and Delta Canal, the largest canal in the system and one of the oldest project features. Both the dam and canal were created privately in 1883 and later purchased by the Reclamation Service around 1908 (USBR, 2007b). It runs parallel to the Uncompahgre River to the river's south and heads northwest for 40 miles. Its capacity is 550 cfs and it is unlined (USBR, 2006a).

Other smaller diversions from the Uncompahgre River include the Loutsenhizer Canal, the Selig Canal, the Ironstone Canal, the East Canal, and the Garnet Canal. All were privately owned until the Reclamation Service purchased them (USBR, 2007b). At that time (1908-1915), the Service rehabilitated the canals to increase project productivity.

The Taylor Park Dam and Reservoir sit on a tributary of the Gunnison River – the Taylor River. Completed in 1937 by the Bureau of Reclamation, the works are the newest project feature (Clark, 1994: 14). The dam is a "zoned earthfill structure," 206 feet high, 675 feet wide at the crest, and has a volume of 1,115,000 cubic yards (USBR, 2006a). The reservoir can hold up to 106,200 acre feet of water. For water delivery to the project, water flows from the reservoir through a spillway – an "overflow-type weir crest 180 feet long with a capacity of 10,000 cubic feet per second" (USBR, 2006a). From there, it flows into a "horseshoe tunnel" outlet (with a capacity of 1500 cfs) that directs the water into the Gunnison River and subsequently flows to project lands via the Gunnison Diversion Dam and Gunnison Tunnel (USBR, 2006a).

Project History

The Uncompahgre region was the traditional home of the Ute Indians. Under the leadership of Chief Ouray, the Utes lived in relative peace with early Europeans during the mid to late part of the 19th century. The Uncompahgre River was their life line and they practiced irrigation. Beginning in the mid 1800's, the U.S. federal government began to claim more Colorado territories for white settlement and mining (Clark, 1994: 2-3). On August 28, 1881, all Colorado Utes were ordered to Utah. After the Ute expulsion, the mining population steadily grew. European settlers adopted irrigation techniques from the Utes. They diverted water from the Uncompahgre River to grow crops mainly to support the mines. In 1875, the first shipment of Uncompahgre hay was sent to feed livestock at southwest Colorado mines (Beidleman, 1959a: 188).

Soon muted irrigation companies emerged. The first were the Montrose and Uncompahgre Ditch Company and the Delta Ditch Company. Three large canals were built which still remain today: the Loutzenhizer, the Uncompahgre Canal (renamed the Montrose and Delta Canal), and the Selig (Clark, 1994: 3-4).

The valley seemed to have endless potential – until the water ran out. By 1890, settlers began to realize the Uncompahgre River could not support the growing population. Less than 30,000 acres were cultivated in an area many thought would irrigate 170,000. The Uncompahgre River volumes oscillated more than settlers had foreseen. Soon houses and farms were abandoned as settlers left to find fortune elsewhere (Beidleman, 1959a: 188; Levy, 1968: 49-50; Clark, 1994: 3-4).

A French settler, F.C. Lauzon, struggled to provide a solution to his “forty barren acres which were watered by a dribble from the fluctuating Uncompahgre River” (Beidleman, 1959a: 187). One night he dreamed of building a tunnel from the Gunnison River to the Uncompahgre Valley. Lauzon had been a miner and knew a great deal about tunneling mountains. Soon, he shared his vision and began attracting support (Steinel, 1926: 527; Levy, 1968: 49; Clark, 1994: 3). The Gunnison River was near enough to the valley to inspire thoughts of diversion, but was virtually inaccessible. Its home was the mighty Black Canyon, with towering cliffs serving as shores and sharp-rocked rapids lining its path. The canyon wall would have to be blasted. Miles of tunnel would have to be bored through a large mesa. New canals would need to be constructed to connect the two rivers.

This did not stop the settlers. Those who had chosen to stay had grown fond of their new home and desperately wanted the valley’s fertile lands to reach their potential. Beginning with local referendums, Lauzon and his supporters sought aid through every means. They were denied repeatedly. Local legislators thought it unrealistic. Private companies simply did not have the capital or were unable to provide adequate cost projections (Beidleman, 1959a: 191). They struck some luck in 1894 when the U.S. Geological Survey (USGS) made a brief reconnaissance survey to assess a tunnel’s viability. The USGS agreed the project was too formidable for locals to tackle and suggested the settlers seek outside aid. In 1899, the supporters took their idea to the state by advancing Colorado Senate Bill No. 310. They proposed having “unemployed convicts” create the tunnel, but the state saw the whole venture as impractical and tabled the bill (Beidleman, 1959a: 191; Levy, 1968: 51).

It soon became clear that a better survey of the Gunnison River would be needed in order to convince legislators of the project’s feasibility. Up to the turn of the century, there had been few, if any, true explorations of the Gunnison through the Black Canyon. The Utes had crossed the Gunnison at times, but they felt that anyone who went “downstream would never come out alive” (Beidleman, 1959a: 188).

The first interest in surveying the canyon’s river path began with the Denver and Rio Grand Railroad in the 1880’s. It surveyed enough of the canyon to extend the railroad from the city of Gunnison, Colorado into the mouth of the Cimarron River. On August 13, 1882, the Denver and Rio Grand celebrated the first trek of its passenger train into the canyon’s

northernmost fifteen miles (Beidleman, 1959a: 188). The bulk of the canyon, though, had yet to be explored.

Eighteen years later, settlers decided to make their own survey of the Gunnison. In September, 1900, five local volunteers set out to explore the canyon in the hopes of proving viability. William W. Torrence (from the Montrose Electric and Power Plant) was something of an adventurer and quickly volunteered to be a part of the group. Led by John H. Pelton (a former Yukon explorer), other members of the expedition included J. A. Curtis, M.F. Hovey, and E.B. Anderson. With friends and family in place to monitor progress from the cliff's top, the group set out on the most adventurous survey ever attempted in the canyon (*Denver Republican*, 1900: 16; Beidleman, 1959a: 192-194).

They started riding the river on two wooden boats and planned to reach the end of the canyon quickly. This proved overly optimistic. One boat sank early on and their provisions were quickly lost. After four weeks of what was expected to be a five day journey, the group met an impenetrable cascade. They named it the "Falls of Sorrow" and resigned themselves to terminate the expedition. They left what little they had and climbed out of the canyon with Torrence vowing to return someday (*Denver Republican*, 1900: 16; Beidleman, 1959a: 192-194, 198; Burchard, 1982: 115).

Though the survey was not complete, the expedition's effort did succeed in making people more interested in a possible tunnel. Settlers gained confidence to organize and seek aid like never before. In November 1900, Torrence, Pelton, and other notable settlers met in Montrose "for the purpose of forming an organization to push the preliminary work of investigation on the Gunnison Tunnel" (*Montrose Enterprise*, 1900: 1). They selected a president, vice president, secretary, treasurer, and board members. Their immediate task was to raise \$1,000 in order to survey the region for irrigable land and prepare initial diversion plans. These plans would accompany requests for aid in an effort to speed the tunnel's creation. The local leaders attempted to "visit every resident of the county" of Montrose, asking for donations. Supporters pleaded, "Let all give freely, because if the enterprise is put into shape to present to the legislature, to congress or to capital, something may result therefrom, and if this great water way should ever be completed, the benefits therefrom are simply beyond estimate" (*Montrose Enterprise*, 1900: 1). Supporters proclaimed that irrigation water as well as the project's subsequent power production would make the valley both an agricultural paradise and a manufacturing center.

In early 1901, Mead Hammond, a state representative from the Delta area, introduced House Bill No. 195 to Colorado's House of Representatives. The Hammond Bill called for the creation of a tunnel (known as State Canal No. 3) "below the mouth of the Cimarron River" that would move west to meet up with the Uncompahgre River (Session Laws, 1901: 370). The bill passed, but only allotted \$25,000 for the project (Beidleman, 1959a: 195; Levy, 1968: 53). One legislative requirement was that settlers in the area create a Board of Control to act as intermediary between the water users and the state. This three-person organization was to be chosen by the governor from those in either Montrose or Delta counties. Once established, the Board would elect from among themselves one president and one secretary. This would replace the previous settler organization established by Pelton and Torrence. The Board's major task

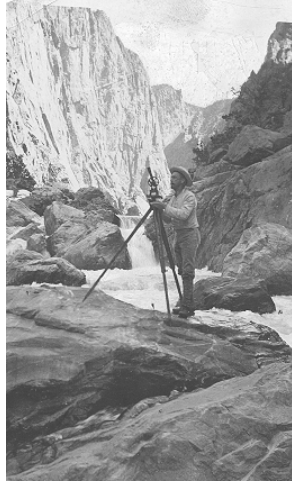
would be to assess and collect payments from water users. The amount of each assessment would be proportional to the water each participant received. The Board would collect these and send payments to the state so the state could pay off certificates of indebtedness issued for the tunnel's construction (Session Laws, 1901: 369, 373-374).

Passage of House Bill No. 195 brought the U.S. Geological Survey back to the Uncompahgre Valley. The federal government agreed to help the state because, as F.H. Newel (then USGS hydrographer) said, "federal land [in the area would] be benefited by the tunnel and canal" (*Montrose Enterprise*, 1901: 1). The USGS agreed to undertake an investigation of a possible tunnel site by surveying the Black Canyon. This time, their investigation would incorporate an astounding endeavor. No one had ever made a successful trip through the entire canyon. If a tunnel was to truly be created, an intense examination of the river's path and flow, as well as a study of the canyon's wall (for a possible tunnel site), would be imperative.

The USGS bestowed the position of "history maker" to their resident hydrographer in Colorado. Abraham Lincoln Fellows was eager to embark on this expedition and quickly formulated his strategy. He decided to use an inflatable rubber mattress as a boat. He enlisted the aid of a friend, A.W. Dillon from Montrose, to periodically drop supplies from the rim of the canyon down to the river at strategic intervals. He advertised for a companion who must be 1) "a good swimmer; strong and athletic," 2) "unmarried" with "no one entirely dependent upon him," 3) "strictly temperate" and willing to "obey orders," and 4) must accept the charge completely of his own accord (Steinel, 1926: 531). Fellows received many applications, but had only one in mind for his companion. He wanted William Torrence, the man who had been a member of the earlier expedition of 1900, and Torrence quickly signed on. Torrence's vow to return to the canyon would now be fulfilled.

On August 12, 1901, Fellows and Torrence disembarked from the Denver and Rio Grand Railroad at the mouth of the Cimarron with cheers from fellow passengers and set out on their journey. The trek was perilous. The men had to swim through rapids, walk over boulders, and hide from falling rocks above. On the fifth day they finally reached the "Falls of Sorrow" where Torrence's earlier expedition had ceased. Knowing no one to have passed this point before, the men readied themselves to plunge into a great abyss (Steinel, 1926: 532). According to Fellows (Steinel, 1926: 533):

"When, about noon, we reached the lowest point attained by earlier explorers and saw before us the mighty jaws, past which there was to be no escape, I believe I might be pardoned for the feeling of nervousness and dread which came over me for the first time. It was not so much for myself that I feared, but because I was leading another man into a place from which there might be no escape...I said to Torrence: 'Will, your last chance to go out is to the right...if we cross the river at this point there can be no return.' Torrence said, 'Here goes nothing' and commenced to pull off his coat."



Left: Fellows
in the canyon.

Right:
Torrence at
his home.

Early 1900's

Source:
UVWUA



The two plunged into the formerly impenetrable cascade and were amazed to come out alive on the other side. After three more days of life-threatening obstacles, the men finally made it to the other end of the canyon. They arrived in the town of Delta on August 21st and returned to Montrose later that day to report their findings (Steinel, 1926: 535).

Fellows and Torrence found the tunnel not only to be plausible, but also discovered an appropriate location. The Board of Control was now in place and just two months after the expedition, work began on the Uncompahgre Project (Levy, 1968: 56). The first task was to build a road down into the canyon capable of transporting workers and machinery. The second was to begin boring through the canyon wall.

Only the canyon road and 850 feet of tunnel were created before the state's allotment of \$25,000 ran out. The state assumed private capital would subsidize the remaining cost, but the Uncompahgre Valley had no such capitalists. By fall 1902, all work ceased and the site was abandoned (Levy, 1968: 57; Clark, 1994: 6-7).

Yet, 1902 proved a more fortuitous year than settlers could have hoped. On June 17, 1902, the federal government passed a piece of legislation that would change many lives. The Reclamation Act (or Newlands Act) of 1902 set in motion a federal irrigation program that would build projects that neither private capital nor local government had been able to tackle. It would reclaim the desert wastelands of the western U.S. and produce irrigated utopias. The Uncompahgre Project would be among the first to be transformed.

The Reclamation Act of 1902

Western politicians submitted a legislative bill to both the U.S. House and Senate on January 21, 1902. The bill passed and was signed by President Theodore Roosevelt in June (Rowley, 2006: 100). The 1902 Reclamation Act (or Newlands Act – named after Nevada supporter Francis Newlands) was “An Act Appropriating the receipts from the sale and disposal of public lands in certain States and Territories to the construction of irrigation works for the reclamation of arid lands” (Newlands Act, 1902: 388).

Under the new law, the sale of public land in the West would go into a U.S. Treasury “Reclamation Fund.” The money was to be used for “construction and maintenance of irrigation works for the storage, diversion, and development of waters...” in arid regions (Newlands Act, 1902: 388). The Act’s other major points were (Newlands Act, 1902: 389-390):

1. If public land in an irrigation project was needed, the Secretary of the Interior could remove it from public entry.
2. If a project was feasible, the Secretary could let contracts for construction as long as there was enough money in the Reclamation fund.
3. Once a project was complete, settlers had to repay the Reclamation fund for the costs of construction over a period of no more than ten years.
4. Private land owners could receive water, but for only for a maximum of 160 acres. Additionally, they had to be *bona fide* residents of the land.
5. The Reclamation fund could be used for operation and maintenance of structures. When most of the construction costs were repaid by settlers, the operation and maintenance of the project would be turned over to them. Title to structures would remain with the federal government unless Congress directed otherwise.
6. The Secretary of the Interior had the authority to purchase lands necessary for projects using the Reclamation fund.
7. Nothing in the Act was intended to interfere with state laws.
8. The Secretary of the Interior was given authority to enforce the Act.

The Act created a new organization, the Reclamation Service (later renamed the Bureau of Reclamation in 1923), to implement the law. The Service was placed in the Interior Department within the relatively new Geological Survey; it was removed from the USGS and became independent in 1907 (Pisani, 2002: 101). Founded in 1879, the USGS had experience in assessing the lands of the West as it had already been conducting surveys for possible irrigation sites. The greatest asset the USGS had was its personnel. The organization housed one of the largest groups of trained engineers in the country (Rowley, 2006: 104). For the new Reclamation Service, such engineers were not only valued, but would become the cornerstone of the entire organization.

The Rise of the Engineering Class

By 1902, the country was entering a new era – one which emphasized trust in Science. Sometimes referred to as Taylorism, Progressivism, or Professionalism, this new movement saw scientific methods entering uncharted areas. From 1880 to 1920, the number of those identifying themselves as professional engineers went from 7,000 to 136,000 (Pisani, 2002: 24-25; Rowley, 2006: 127). From its inception, the newly created Reclamation Service reflected this techno-driven spirit and it would soon embody the entire Reclamation movement (Pisani, 2002: 23-30; Rowley, 2006: 127). The Service was populated with a new kind of elite: the engineer. Scientific knowledge became the main ingredient of the Service. Valuing college-type education over long experience in the field, the Service sought employees whose visions of western prosperity involved calculated methods of applying science into every aspect of these Reclamation “experiments.”

Indeed, Reclamation was a grand social experiment. It involved creating brand new agrarian communities with relatively inexperienced eastern emigrants. But even social issues, Reclamation claimed, could be successfully ordered with a scientific method. Donald Pisani (Pisani, 2002: 24) remarked:

The world was governed by knowable natural laws, laws that engineers were best equipped to understand and to harness. Human progress was defined in materialistic terms. The engineer was master of technology...The scientific method made him a rationalist free of bias, suited to both lead and to mediate between economic interests and conflicting classes. Human beings could remake the world and build a harmonious society.

This eventually proved to be misguided optimism, for, as Rowley (2006: 111) noted, “the social and economic side of reclamation proved far more difficult than building dams and bridges.” But in the beginning, the engineer was king.

Chapter 4 – The Creation of the Uncompahgre Valley Water Users’ Association

On March 14, 1903, less than a year after the passage of the Reclamation Act, Secretary of the Interior, Ethan A. Hitchcock, approved the first five projects for the newly created Reclamation Service. Largely due to the recommendation of tunnel explorer, A.L. Fellows, who would soon become a Reclamation Service District Engineer, Hitchcock included the Uncompahgre Project among the first endeavors. Hitchcock agreed to expend \$2.5 million on the project from the federal government’s Reclamation fund. Finally, the dreams of Uncompahgre settlers would materialize (Steinel, 1926: 535).

The project was to include the boring of a tunnel under Vernal Mesa to bring water from the Gunnison River to the Uncompahgre Valley, the creation of new canals, the acquisition and rehabilitation of many large, private canals, and the creation of several laterals. The state of Colorado authorized the transfer of its State Canal No. 3 to the federal government later that year (Levy, 1968: 58; Clark, 1994: 7). The local Board of Control had, in 1902, already pledged its support to federal Reclamation and agreed to turn over its rights to the tunnel once the federal project was established (*Montrose Enterprise*, 1902a: 1). All that remained was the creation of a new local organization to mediate between settlers and the Reclamation Service, replacing the Board of Control.

On each of its projects, the federal government required settlers to establish a local sponsoring organization. Each person who desired to secure water from the United States had to become a member. The organization would officially authorize the creation of water works in its area as well as guarantee repayment of construction charges. It would collect individual assessment charges from farmers and send the funds to the federal government (Moynihan, 1924b: 14; Pisani, 2002: 62).

A water user association (WUA) is a public, member-run, incorporated entity designed to deliver water to members based on acreage owned. In a WUA water is tied to the land. Water share stock must be sold *with* tracts of land. Additionally, each water users’ land incurs a lien and serves as collateral for corporate indebtedness. When a user becomes delinquent on assessments, the association has the authority to foreclose on the person’s land.

The Uncompahgre Valley Water Users’ Association (UVWUA) was officially created to sponsor the Uncompahgre Project. On May 5, 1903, the first meeting of the UVWUA was held in Olathe and was advertised in local newspapers as a call “to organize an Association for the carrying on of said enterprise [the Uncompahgre Project] and to represent to water users in negotiation with the federal government” (UVWUA, 1903a: 1). Prior to this meeting, those in charge of local ditches had agreed to form smaller ditch organizations within the larger Association. These units would have their own voice at the general water users meeting, with representation based on ditch size. The Ironstone Ditch, a moderate sized ditch, was to have three representatives. The Montrose Canal, the largest ditch, was to have nine representatives at the meeting (UVWUA, 1903a).

James F. Kyle was elected as temporary chairman and then organized two committees: the Committee on Credentials and the Committee on Permanent Organization and Order of

Business. The former committee ensured each ditch's representatives had proper credentials and after a recess their report was accepted (UVWUA, 1903a: 1-3). John C. Bell was elected the first UVWUA president. The honorable Judge Bell had been a member of the U.S. Congress, introduced the tunnel proposal, and helped secure the passage of the 1902 Reclamation Act (Steinel, 1926: 539). George S. Conklin was elected vice-president, James F. Kyle was secretary, and A.H. Stockham was treasurer. A.L. Fellows, the same adventurer of the Black Canyon and current District Manager of the Reclamation Service spoke at the meeting, "favoring" the group with an "interesting speech" (UVWUA, 1903a: 5).

The final task of the meeting was to empower the new officials to seek funds and secure official organization of the Association. Members voted to give the president the authority to seek funds from the two counties involved in the project (Montrose and Delta) via their commissioners and to seek funding from the three town councils. As regards official organizing, the executive committee was "authorized to incorporate the organization" by submitting Articles of Incorporation for approval at a future meeting (UVWUA, 1903a: 7). The Articles of Incorporation served as a contract between each individual water user and the Association. By May 11, 1903, the Articles were codified and adopted by the Directors and soon approved by the entire Association (UVWUA, 1903b: 9).

Construction Begins

With the Articles of Incorporation in place, the Uncompahgre Valley Water Users' Association undertook the task of gaining subscriptions from land owners. The Reclamation Service announced it would begin construction as soon as 80,000 acres of project land were subscribed. Association officials had to ensure future members that their water priorities would not be lost if they subscribed. In addition, they had the daunting task of persuading private canal owners to sell their systems to the federal government (UVWUA, 1904a: 30; UVWUA, 1904b: 39).

While the Association was thus engaged, the Reclamation Service made additional surveys of the area. Resident Engineer I.W. McConnell decided to change the tunnel site from where the state had started to a spot five miles east. Reasons for this move included a shorter tunnel length, better access to the canyon's portal, and better access to water with a view to increasing irrigable acres (Beidleman, 1959b: 271-272).

By the end of 1904, the Association had gained sufficient subscriptions and signed its first official contract with the federal government. Reclamation officials then opened bids for construction of the Gunnison Tunnel (Rodgers, 1966a: 259-260). Earlier in 1904, bids had been accepted for the creation of about half of the canal system (*Denver Post*, 1904: 2). It considered ten bids from private companies and finally awarded the tunnel contract to the Taylor-Moore Construction Company of Hillsboro, Texas. Being the lowest bidders, they pledged to construct the tunnel for \$1,008,500 (Beidleman, 1959b: 272; Levy, 1968: 59-60; Clark, 1994: 7). In January 1905, the Taylor-Moore Company began construction on the tunnel with a promise of completion within a year (*Denver Post*, 1904: 2). Hopes were high, but problems arose quickly. After a few months, the company declared bankruptcy and, on May 28, 1905, the U.S.

Reclamation Service took over the entire construction of the tunnel (Beidleman, 1959b: 274; Levy, 1968: 60; Clark, 1994: 7).

Just two days later, a massive cave-in occurred in the tunnel. At 3:30 pm on May 30, 1905, workmen on one section were replacing temporary timbers with permanent ones when,



1905. These Gunnison Tunnel workers had just struck water. The water was very hot and there was as yet no ventilation shaft. The temperature in the tunnel was around 90 degrees Fahrenheit. Source: UVWUA

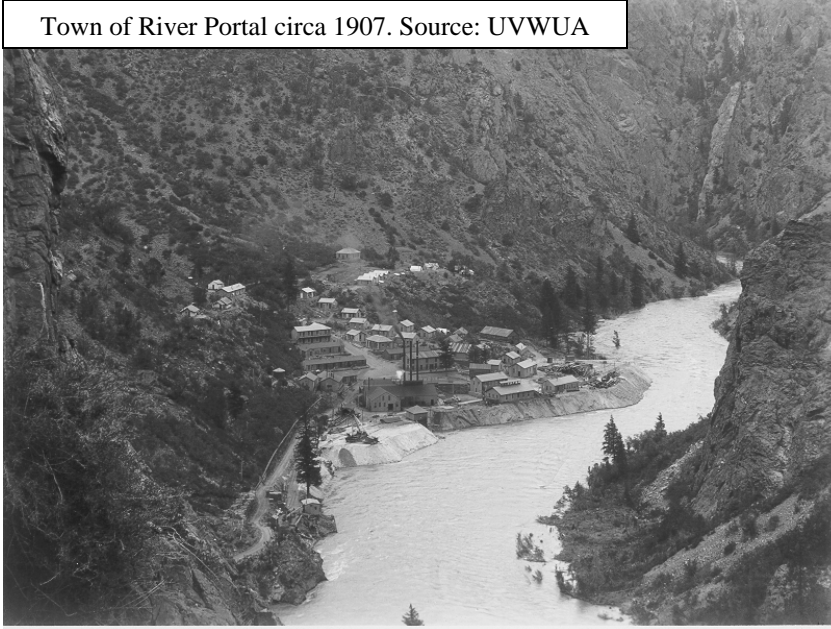
without warning, the entire section caved in. Over twenty men were cut off from the exit with some pinned under debris. Most men were rescued within twenty-four hours via a shaft inserted by rescuers. Nevertheless, six men perished (*Engineering News*, 1905a: 606; *Engineering News*, 1905b: 680). Later a “coroner’s jury exonerated all persons from blame” and deemed the cave-in an unforeseen accident (Beidleman, 1959b: 276).

The cave-in was not the only accident during tunnel construction. In December 1906 an explosion occurred in the east end. Drillers had hit a seam of warm water and carbonic acid. A stream shot up 40 feet and knocked workers from their machines. Two workers died and one lost his eyes. Engineers suspended work on that part of the tunnel for six months while workers installed an adequate ventilation shaft (Van Gieson, 1947: 174; Beidleman, 1959b: 274-275; Rodgers, 1966b; Clark, 1994: 8).

Other accidents included a flash flood and influx of powder smoke. In all, twenty-six men died from tunnel work. Turnover of workers was high; the average stay was two weeks. In addition to the risk of life, unbearable daily conditions dissuaded longevity – even though wages were relatively high. Temperatures in the tunnel often reached 90 degrees and humidity was extreme. Until electrical power plants were installed, all work was manual and done by candlelight (Van Gieson, 1947: 174; Beidleman, 1959b: 278-279; Levy, 1968: 61-62; Clark, 1994: 8-9).

Workers bored through rock on both ends of the tunnel – one group worked in the canyon and one drilled at the exit point six miles away. The two teams would eventually meet. The east portal (or canyon side) employed around 140 workers. The west portal (at the exit point) employed about 350 workers (Rodgers, 1966a: 270; Levy, 1968: 61-62).

Town of River Portal circa 1907. Source: UVWUA



Access to the east portal could be perilous. The steep grade of the road meant some machinery had to be lowered by skids. Access to the west portal was not so dangerous, but both portals required nearby worker housing. The Reclamation Service created two new towns: the town of Lujane at the west portal and the community of River Portal in the canyon. In 1906, Lujane housed 800 people and contained a bunkhouse, storeroom, dining hall, post office, hospital, and water/sewer system. The town of River Portal, likewise, had a bunkhouse, post office, and hospital (Rodgers, 1966a: 270; Clark, 1994: 8-9).

By mid-1909, the workers had a great deal to be excited about. In late June, tunnel workers from each portal began to hear each other's drilling. The tunnel was nearly complete. Soon, a race to be the first through the tunnel brought a good-natured competition between the east and west portal workers (*Denver Post*, 1909a: 6-7):

It was a battle of brains, daring and resourcefulness that has seldom been equaled. The River Portal gang scored the first victory [by creating the first hole]. ... [They] brought forth their weapons that had been fashioned in secret to outwit the enemy. It was a steel drill twenty feet long. ... [The west portal gang] lost the honor of piercing the first hole, but that was not all of the battle. ... A half a dozen men seized the end of the drill and pulled it through the hole away from their opponents... [and later] displayed [it] as one of the spoils of battle....

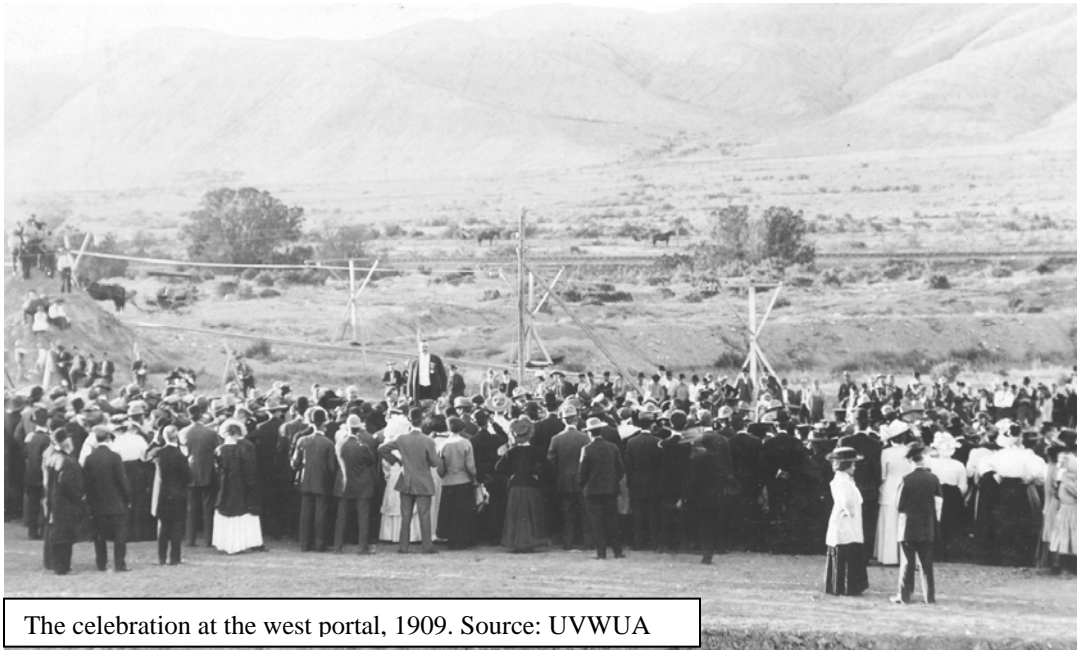
Now [when] "Kiowa" Utah [from the west portal]... saw the hole he gave a yell and rushed for it. Flat on his stomach he commenced to wriggle through it like a snake. The men on the other side saw the head of the enemy invading their camp... [and] turned the full force of compressed air square in his face. "Kiowa" fought, gasping for breath, and wriggled on until at last he was through. The battle was over, and...everybody shook hands.

The tunnel proved to be a magnificent piece of engineering. “So perfect were the calculations of the engineers that it was found, when the opening was made, that the two sections joined perfectly, without an inch of discrepancy” (*Denver Post*, 1909a: 7). It was the longest irrigation tunnel in the world. Everyone, from workers to Reclamation officials to project settlers, exhibited a flurry of excitement. The tunnel was complete.

A Grand Party

To commemorate this achievement, citizens of Montrose put together a celebration. On September 23, 1909, settlers, Reclamation leaders, local officials, state leaders, and even the president of the United States, William H. Taft, congregated in Montrose to celebrate the tunnel opening. Thousands came to witness the first drops of Gunnison River water spill through the tunnel and enter the Uncompahgre Valley.

The day was perfect for a celebration, with blue skies and comfortable temperatures. The streets of Montrose were grandly decorated. The center of its decoration was an immense, fifty foot double arch straddling Main Street. With a grand “Welcome” sign on top, the arch listed crops and projection estimates promised to spring up with the new tunnel water. Around 20,000 people gathered from all over the state. Special trains ran almost non-stop throughout the day and normal business ceased (*Denver Post*, 1909b: 1).



The celebration at the west portal, 1909. Source: UVWUA

Near 3:00 p.m., President Taft appeared on his train to meet the “noisiest greetings” he had encountered thus far on his trip west. According to the one newspaper correspondent, “That Taft smile wreathed his face as he left the door of his car and stopped on the platform to view the throng and acknowledge the ovation tendered him” (*Denver Post*, 1909b: 7). Next he went by car downtown to the Western Slope Fair accompanied by a spectacular parade. Taft said he felt

truly “western” for the first time particularly because hundreds of cowboys paraded their western “color” in this grand show.

The president and party took a special train to the west portal of the tunnel. Another crowd of thousands was there to applaud Taft’s arrival and prepare for the Gunnison Tunnel to deliver its first water to the Uncompahgre Valley. Taft stood on a platform and touched a golden bell to a silver plate (both were later given to him to commemorate the event). This sent an electric current to the east portal, releasing the water from the tunnel headgates. Everyone cheered as water began to appear in the west portal (*Denver Post*, 1909b: 1, 7).

Actually, the tunnel water was released manually. The diversion dam had not yet been created in the canyon, so workers in the east portal had to listen for Taft’s electric message to release seepage water. The tunnel itself was officially finished the next year in 1910 (*Montrose Daily Press*, 1978: 10; Clark, 1994: 9-10).



After the tunnel opening, the president was treated to a large public reception before returning to his train and headed to Grand Junction (*Denver Post*, 1909b: 7). Of the many memories of Taft’s visit, his description of the valley is the most recounted. He called the Uncompahgre Valley the “incomparable valley with the unpronounceable name” (*Montrose Daily Press*, 1978: 10).

System Completion

In 1932, the federal government transferred operation and maintenance responsibilities to the Uncompahgre Valley Water Users’ Association (Clark, 1994: 12). The organization has since been the official caretaker of the Uncompahgre Project. Title and ownership of the project features were, and still are, retained by the federal government *for* the Association (Key Informant Interview, 2004a).



Construction of
Taylor Park
Reservoir circa
1935-1937.
Source:
UVWUA

The 1930's saw the creation of another major project feature: Taylor Park Reservoir. As early as 1903, the Reclamation Service began surveying possible reservoir sites. It obtained a location on the Taylor River about 100 miles from the Gunnison Tunnel. The federal government displayed sporadic interest in the reservoir for the next thirty years. The Reclamation Service made more surveys in 1911 and 1912. In 1925, the Board of Survey determined a reservoir would eventually become necessary as irrigated lands increased. Most knew the flow of the Gunnison and Uncompahgre Rivers must eventually be supplemented (Jerman, 1938: 84).

In 1933, thanks to the National Industrial Recovery Act, the Public Works Administration allocated \$2 million for the reservoir's construction. In 1934, the UVWUA signed a contract with the federal government for the construction of Taylor Park Reservoir. A contract was let to the Utah-Bechtel-Morrison-Kaiser Company for construction, with the Bureau agreeing to furnish all building materials. The reservoir was completed on November 29, 1937 (Jerman, 1938: 84; Clark, 1994: 14).

The UVWUA Today

Today, the Uncompahgre Projects stands as an example of what the federal government and a local organization can accomplish. The Uncompahgre Valley Water User Association serves over 3,500 customers with total of 75,000 productive acres (Key Informant Interview, 2006). Irrigated agriculture remains a source of prosperity and pride for the Uncompahgre Valley.

Since the 1950's the Association has expanded its endeavors to include participation in larger, regional organizations such as the Colorado River Conservation District. Because projects like the Colorado Big-Thompson began transferring water from the western slope of Colorado to the eastern slope, many people on the west side of the Continental Divide saw the need to organize to protect their water resources for western slope needs.

With the creation of the Upper Colorado River Storage Project (UCRSP), authorized in 1956, the Association was able to participate in many region-wide water protection campaigns (USBR, 2007c). The Association supported the UCRSP's water storage on the Gunnison River in the form of the Aspinall Unit. The unit encompasses three dams: Blue Mesa (the largest reservoir in Colorado), Morrow Point, and Crystal (UVWUA, 1961: 52; NPS, 2007).

The Association, through the UCRSP, also helped to create the Tri-County Water Conservation District in 1957, which protects and utilizes water in Montrose, Delta, and Ouray counties. The District, among other things, is a large provider of domestic water, with clients such as the City of Montrose (UVWUA, 1958: 41-42). It also oversees the upstream Dallas Creek Project which includes Ridgway Reservoir on the Uncompahgre River (Tri-County Water, 2007). The Uncompahgre Valley Water Users' Association was particularly desirous of the reservoir and contracted with Tri-County Water for supplemental water. It also helps provide flood control by leveling the Uncompahgre River's flow (UVWUA, 1961: 53).

The contemporary Association – in collaboration with the Bureau of Reclamation – is also involved in salinity control and reduction. In the Uncompahgre Valley, selenium and salt are naturally occurring elements within the soil. When water runs through the system, it picks up these “natural pollutants.” Not only does irrigation water spread these pollutants across the valley, but it transfers them down-stream from the Uncompahgre River to the Gunnison and eventually to the Colorado River – affecting water users across the West (Key Informant Interviews, 2004b; 2004c; Shea, 2005).

On June 6, 2002, the Uncompahgre Valley Water Users' Association marked its 100th birthday with a community-wide celebration (Clemens, 2002a). The Association's anniversary corresponded with the Bureau of Reclamation's centennial, so the observance was a joint celebration. The party recalled the early Twentieth Century. Bureau officials and other local speakers congregated in the shade of the Association building's front porch while a large pig roasted.

The Bureau of Reclamation chose to begin its centennial celebration in Montrose – not just because the Bureau and the Association were born at the same time, but also because the Uncompahgre Project had become a prime example of the federal government's success (Clemens, 2002b; 2002c). Current UVWUA Manager Marc Catlin beamed with pride and said, “There are not many times you and I will get a chance to celebrate something that has lasted for 100 years...” (Clemens, 2002a).

The Uncompahgre Valley Water Users' Association is one of the oldest associations in the country. Its office in Montrose, an early Reclamation building constructed in 1905, still functions today and is the “best preserved example of the Bureau presence in the West” (Key

Informant Interview, 2004d) (See Appendix B for photos). The Association's lengthy and historic presence exemplifies what Reclamation and a well-functioning local organization can accomplish together. However, the path to organizational success was filled with obstacles. It required decades of organizational effort to overcome problems and to construct the kind of self-governing management system that was so proudly acclaimed in 2002.

PART III: FINDINGS

Chapter 5 – Original Organizational Design, Time Period 1, 1901-1931

The relationship between the Bureau of Reclamation and the Uncompahgre Valley Water Users' Association was not always harmonious. Up until the 1930's, this relationship was riddled with mistrust, despair, and anger. The transformation into one of peace and productivity occurred only after drastic organizational change.

Articles of Incorporation

When the Uncompahgre Project was approved, the federal government required the UVWUA to create Articles of Incorporation. They would serve as a contract between each water user and the Association and guarantee repayment of the project's costs. The articles did a great deal more. Modeled after the Salt River Valley Water Users' Association in Arizona (USGS, 1904: 161), the articles described many organizational attributes of the Association and also laid out the relationship between the Association and the federal government. With amendments, the articles are still utilized today.

The original Articles of Incorporation began by pronouncing the Uncompahgre Valley Water Users' Association as a "body corporate" established under guidelines of the state of Colorado. They also stated that membership in the Association was open to those who subscribed to the Articles. *Article III* established Olathe as the meeting place for stockholder meetings and Montrose as the location of the Association office (UVWUA, 1903b: 9).

Article IV declared the purpose of the Association was to provide and distribute water to share holders, to divert water from the state's public sources, to develop power domestically, to obtain and construct ditches, tunnels, reservoirs, laterals and canals for water distribution, and to create and transmit power (if it chose) to further these purposes. *Article IV* also stated, the "Association shall have the power to enter into any contract or other arrangement... to secure action by or the aid of the United States Government in the construction of any dams, reservoirs, tunnels, canals, wells or any other works or property..." for the benefit of Association shareholders (UVWUA 1903b: 9). The Association was also authorized to enter into agreements for the purpose of repayment and to collect fees from shareholders to pay the federal government for irrigation works.

The Association had specific federal obligations. It had to "comply with any conditions, rules or regulations prescribed by Congress or by any executive department or official of said government lawfully authorized thereunto, concerning the storage, diversion, delivery, application or use of any water so stored, developed or delivered to the shareholders... from or by means of any works constructed or acquired by the Government" (UVWUA, 1903b: 9).

Article V set the initial capital stock of the organization at \$100,000 to be divided into 100,000 shares at \$1 a share. The number of shares was equal to the number of irrigated acres, so if the federal government found that 100,000 shares were insufficient, the number of shares would be adjusted to match the total number of irrigated acres. In addition, there was a

limitation on share costs. The articles stated, "...and said shares shall be assessable, however, not to exceed Twenty four Dollars (\$24.00) per share in the aggregate" (UWVUA, 1903b: 10).

For each acre of land owned, the holder could own no more than one share of stock. The shareholder had to apply to the federal government for a water right (for delivery of water) and had to abide by such rules and regulations that the federal government established. If shareholders violated the rules, they would forfeit their shares to the Association (UWVUA, 1903b: 10).

The amount of water delivered to one person was to be proportionate to the number of shares owned. Water was tied to each specific piece of land, so if shareholders transferred their land they also transferred their water rights. The Association would assess the land transfer and then convey the shares (UWVUA, 1903b: 10).

Article VI dealt with the Board of Directors. Eleven Directors (now seven) were to be elected with a specified number from each of the three districts (Montrose, Olathe, and Delta). Each prospective Board member had to be a land owner in the district s/he represented and would be elected by those in the district. All members would then vote among the Board members to select a president, vice president, secretary, treasurer, and any other officers as needed. These members were authorized to receive monetary compensation (UWVUA, 1903b: 11).

The members of the Board had the authority to call meetings as needed, enact and enforce by-laws, and repeal amendments when necessary *except* when the Secretary of the Interior disagreed. The Board members had the authority to appoint a "general superintendent" of the project, employ engineers, and hire other workers when needed. They also had the ability to "extend and collect all assessments against the share holders of [the] association" (UWVUA, 1903b: 11). With this, they had the authority to enforce the water distribution rules (so long as they were consistent with the Interior Secretary's rules) and had to keep transaction records on file for shareholders to inspect.

Article VII established voting procedure. In order to vote in meetings, the shareholder had to have owned at least one share of stock 20 days prior to an election. S/he had to be at least 20 years or older and of a "sound mind" (UWVUA, 1903b: 11). Votes were designed to be proportional. Each person was allotted one vote per share of stock. Because Reclamation projects were limited to 160 acres per settler, no voter could have more than 160 votes.

Article VIII stated Association members had to provide their own means of conducting water from the canals to their fields and homes. *Article IX* specified canal divisions. *Article X* specifies officer compensation and the noted the president was to be the chief executive officer. *Article XI* stated all officers could be removed from office if there were proper complaints showing them to be incompetent or guilty of violations. *Article XII* reiterated the Board's authority to make by-laws and levy collections (UWVUA, 1903b: 12).

Article XIII specified assessments procedures. Like votes, assessments were to be levied against all shareholders in proportion to the number of shares owned. Only if a fee did not

benefit a certain portion of members would the assessments be unequal. If two-thirds of the members approved, then the charges would only apply to those directly benefited (UVWUA, 1903b: 13).

Article XIII specified that until all assessments were paid or discharged, there would “be and remain a lien on the lands of the shareholder against which they are levied” (UVWUA, 1903b: 13). The liens came into effect once water was applied to the land. Individual property was exempt from the liability. Liens were relinquished when debt to the federal government was repaid.

Finally, the Articles of Incorporation stated (in *Articles XVI, XVII, and XVIII*) that “corporate indebtedness shall not exceed two thirds of the amount of capital stock...The corporation shall endure for the term of twenty years” (later changed to 100 years) (UVWUA, 1903b: 13). Finally, Articles of Incorporation could be amended by the stock holders as needed.

Early Federal-Association Dealings

The relationship between the Uncompahgre Valley Water Users’ Association and the Reclamation Service began amicably. The Association was eager to establish a good relationship early on. One of the first meetings of the UVWUA Board of Directors involved making honorary members of Reclamation officials, such as Black Canyon explorer and District Engineer A.L. Fellows and Resident Engineer I.W. McConnell (UVWUA, 1904a: 31). The Association also extended formal invitations to Reclamation Director Chas D. Walcott and Chief Engineer Frederick Newell to visit the Uncompahgre Valley (UVWUA, 1903c: 16).

In 1904, the Association met with I.W. McConnell, Resident Engineer of the Uncompahgre Project. The Association told McConnell that the “board desired perfect harmony to exist between it and the government officials...” (UVWUA, 1904a: 29). Members asked McConnell what the federal government desired of the Association, whereupon McConnell read a letter from Director Walcott.

Walcott was concerned about the small acreage amounts officially subscribed on to the project. He wanted the Board to “give the reason why those lands [had] not subscribed” (UVWUA, 1904a: 29). The federal government announced it could not begin construction on the project until 80,000 acres of project lands were subscribed to the Water Users’ Association. The reasons why the Board had not secured this amount were numerous. The first stemmed from the 160 acre limitation in the 1902 Reclamation Act. The Association reported that 27,901 acres were tied up in tracts larger than 160 acres (USBR, 1901-1912a: 198). Many subscribers were underreporting their actual acreage in order to avoid subdividing their land. This created a discrepancy in acreage between what the Association promised to the federal government and what was actually being subscribed. Sorting out the matter caused even more delays.

Another reason for deficient subscriptions was that non-residents and mortgage companies owned a large portion of project lands. Because these owners were distanced from the locality, many were ignorant of project conditions and were confused about the urgency of making subscriptions. The Association reported, “40% of the land in this Valley is held by non-

residents and the difficulties of securing signatures to our Articles of Incorporation by non-residents are many. They can not be made to understand why the Association of Water Users is a necessity. Some demand they be allowed to sign a contract direct with the Government” (USBR, 1901-1912a: 200).

Mortgage companies, whose ownership of land stemmed, in many cases, from early drought-troubled foreclosures, seemed hardest to convince of the subscription necessity. The Association noted (USBR, 1901-1912a: 201):

16,913 acres are held by Mortgage and Trust Companies and the land they hold has not come to the support of the Project, although the Association has made every effort...Repeatedly representatives of the Association have been sent to Denver to personally interview representatives of the Companies and have kept up continual correspondence with them [and have] met objection after objection...they hold their charter will not permit them to sign our Articles of Incorporation.

There was finally some success with the Middlesex Banking Company. After receiving ample assurances that repayment assessments would not exceed \$25 an acre, the bank committed its 2,600 acres (USBR, 1901-1912a: 201). This encouraged other companies to see subscribing as viable.

Another early issue of concern was the delay on the project’s construction. Settlers expected the Gunnison Tunnel to be completed by 1905 (*Denver Post*, 1904: 2). The transfer of construction to the federal government, delays due to accidents, as well as unforeseen problems in the geology all contributed to settler unease as completion predictions came and went. The tunnel was not completed until 1909 and was not in service until 1910. The entire project was not officially complete until 1925 and by then many settlers had vacated their farms for want of water (UVWUA, 1914a: 204; Bruce, 1933: 45; Clark, 1994: 10).

Original Perceived Assurances

In the beginning, settler excitement over the prospect of an endless water supply was more than sufficient to keep ill feelings at bay. Federal promises had been numerous – or at least the *perceived* promises were. They began with an intense publicity campaign aimed to attract settlers to future Reclamation sites. Almost as soon as the Uncompahgre Project was approved, the Reclamation Service began advertising. Much was done in conjunction with railroad companies and other businesses that publicized federal projects in order to attract more patrons.

The advertising style was lavish. One railroad pamphlet began its account, “By the enterprise and wealth and energy of a great government, a whole river is to be drained from the granite-bound channel in which it has flowed almost since time began...” (Passenger Dept., 1906: 2). This advertisement, produced by the Denver and Rio Grand Railroad in 1906, promised three things to prospective settlers of the Uncompahgre Valley: free land, virtually free water, and instant agricultural success. Free land was courtesy of the federal government via the Homestead Act. The pamphlet announced, “For the settler of very modest means, there are lands

to be had, free of cost...lands which for fertility and productiveness are not to be surpassed anywhere in the United States” (Passenger Dept., 1906: 2).

Virtually free water could be guaranteed by the Reclamation Service. The pamphlet noted the total cost of the Uncompahgre Project was to be between \$3.5 million and \$4 million. It claimed that since most difficulties in constructing the tunnel had already been realized there would not be “much danger of the total cost exceeding the higher figure” (Passenger Dept., 1906: 10). It explained how each settler’s portion of the payment would be calculated: the total cost of the project divided by the total irrigated acreage. Individual amounts, they predicted, were not likely to exceed \$23.33 an acre, as the total irrigable acreage would likely exceed 130,000 acres. As an added bonus, settlers would not have to pay right away. They had ten years to pay their portion of costs.

If \$23.33 an acre over ten years seemed daunting, the pamphlet was quick to reassure “no settler need be anxious over his ability to meet payments out of his crops, and have plenty of money left on which to live” (Passenger Dept., 1906: 10). Even though current residents owned most of the best land, the available “broken” lands possessed the same fine soil quality. Each settler had the capability to grow “fine fruit” and reap great agricultural rewards.

Local realty companies also contributed to wildly optimistic claims. In 1909, with the tunnel celebration just finished, the Montrose Title and Realty Company announced the Gunnison Tunnel “done” and ready for beneficiaries. It was ready to sell 160 ten-acre tracts of “ideal fruit and farm land” in the valley of “perpetual sunshine, Gunnison Tunnel water and immense crops, [and] opportunities for health, happiness and prosperity” (Montrose Title, 1909: 2). The company announced the cost of the project “will come to about \$5,000,000” and will be divided by the number of irrigable acres (Montrose Title, 1909: 2, 12). With over 150,000 irrigable acres, the amount per acre would be about \$35 and would be paid interest free over ten years. If the prices seemed extravagant, there was no need to worry, for irrigation equaled success. The company proclaimed, “There are No Barren Soils Under Irrigation.” “In every regard this is a country where it is easy to start.” “The Certainty of Crops Makes Payments Easy to Meet.” “For such land, any industrious man can afford to go into debt” (Montrose Title, 1909: 7-12).

The propaganda worked. In 1910, the Reclamation Service reported just 480 irrigated farms on the Uncompahgre Project. By 1920 it reported 1,077 farms (Bruce, 1933: 75). Unfortunately, many who bought into the dream soon became disenchanted. The project was not officially complete until 1925. Many settlers suffered from construction delays, lack of irrigable water, and general agricultural ignorance. They were forced “to leave after having spent their savings in the preparation of their lands” (Bruce, 1933: 45).

Later advertisements were more cautionary. The Montrose Chamber of Commerce and City of Olathe released a pamphlet in 1917 debunking some of the earlier Uncompahgre advertisements in an attempt to give an accurate account of the conditions in the valley, while still attracting new settlers. The pamphlet assured, “The statements herein contained are very conservative. They can be depended upon in every particular” (Chamber of Commerce, 1917: 1). There was an allusion to misrepresentation of construction charges by previous propaganda.

To rectify some confusion on assessments the pamphlet proclaimed, “Charges for water under the Government Reclamation Project have not been announced” (Chamber of Commerce, 1917: 5). When due, they would be paid over ten years with no interest. The operation and maintenance costs would run from \$1.25 to \$2.00 each year.

A leader in the field of Reclamation propagating was the Service’s statistician, C.J. Blanchard, who wrote a series of articles for *National Geographic*. Blanchard praised a paternalistic Reclamation Service and glorified the engineering elite. He said, “Our government is actually loaning money to its citizens and making homes for them, and is loaning it as a father to a son... It is the day of the engineer, and in no previous period in our history has he occupied so prominent a place in national affairs as he does today” (Blanchard, 1907: 217). So certain was the prospect of success on all irrigation projects that wealth seemed likely to come naturally. Blanchard said (1907: 218):

[The] Reclamation Service will reclaim 3,198,000 acres, or a cultivated area equal to the total acreage in crops in the four states of Connecticut, Massachusetts, New Hampshire, and Florida. The diversified crops, enormous yields from irrigated lands, and the excellent prices for all farm products in the West warrant the assumption that this land will return annually an income larger than the farmers receive in the four states named.

Blanchard’s depictions led many to expect Eden on these projects and when they found themselves disillusioned, they naturally complained to the federal government. The Interior Department began taking notice of this misleading propaganda. Interior Secretary Richard Ballinger (appointed by Taft in 1909) strongly urged Blanchard to halt his campaign. Instead of heeding Ballinger’s request, Blanchard’s advertising increased and soon became legendary. He was pivotal in creating publications, such as *Reclamation Record*, and creating motion picture advertisements for the Service in 1911 (Rowley, 2006: 136, 159-161).

Original Legitimate Federal Assurances

There were a number of seemingly *bona fide* information sources available. A news article in 1903 noted A.L. Fellows of the U.S. Geological Survey (and soon-to-be Reclamation District Engineer) as saying, “It is estimated that 175,000 acres can be irrigated” and estimates for construction were \$1,300,000 for the tunnel and \$1,200,000 for the canal system (*Montrose Enterprise*, 1903: 1). In an address to Reclamation engineers, he reiterated these estimates as well as listed \$25 an acre as the maximum charge for construction repayment (USGS, 1904: 161). Fellows had been doing survey work on the Gunnison Tunnel ever since his historic expedition through the Black Canyon and was something of a hero in the Uncompahgre Valley, so he was very likely trusted.

The U.S. Reclamation Service was so sure of easy payment terms and of project success that it could not foresee any difficulties in collecting Uncompahgre repayment charges. In the *First Annual Report* of the Reclamation Service, it assured, “It is probable that there will not be many cases in which the settler will fail to pay for the cost of reclamation, inasmuch as that charge will be small compared with the actual value of the land with water applied to it” (USBR, 1903: 69-70).

Though not in initial agreements, many Uncompahgre Project settlers believed that the production of hydroelectric power would subsidize project costs and that a reservoir would supply additional water supplies. Settlers saw hydroelectric power as a naturally accompanying feature of the tunnel. A 1902 newspaper said, “In the Gunnison Tunnel...there will be developed an immense waterpower which could just as well be sold and the proceeds go to decrease the cost of water for irrigation, and thus save a vast sum of money to the farmers of the Uncompahgre Valley, and at the same time be of vast benefit in other ways” (*Montrose Enterprise*, 1902b: 1).

As early as 1903, the federal government had commissioned surveys for a possible reservoir site upstream from the Gunnison Tunnel (Clark, 1994: 14). Settlers had good reason to suppose the flow of water to the tunnel would be augmented from a storage facility on the Taylor River – a tributary of the Gunnison – with hydroelectric power following. This would have to wait, however, until the tunnel and canal systems could be constructed.

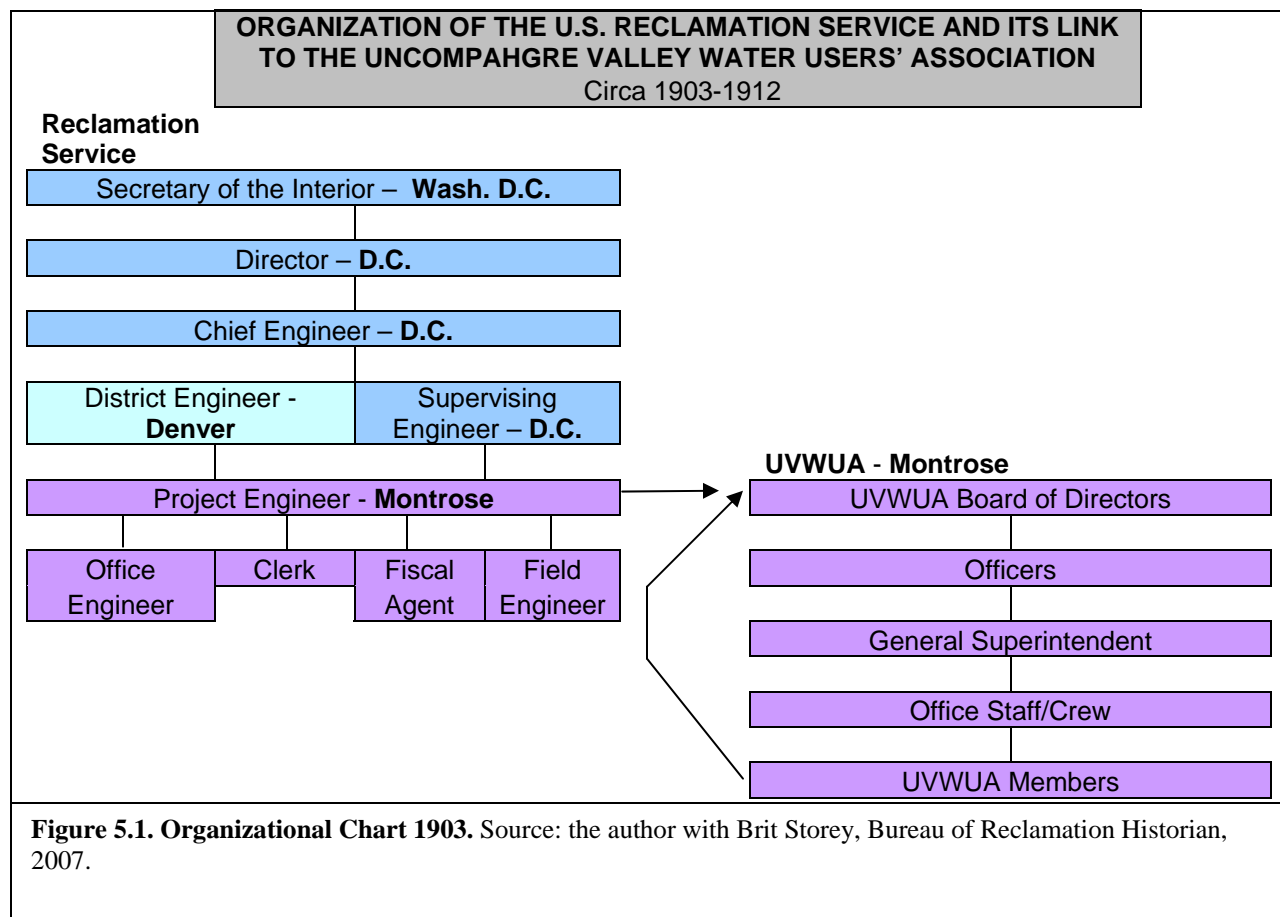
The Organization of the UVWUA and Reclamation Service – 1902-1913

The organizational design of the early UVWUA is clearly laid out in the Articles of Incorporation. With the exception of position titles, the internal design of the UVWUA has not changed during its entire history (see Figure 5.1, lower right). For over 100 years, the chain of responsibility has remained constant (UVUWA, 1903b; Key Informant Interview, 2004a).

Board members of the Association elect a president, vice president, secretary, and treasurer. The Board hires a general superintendent (with the approval of the Secretary of the Interior) to oversee daily business of the organization who may then hire additional personnel as needed. The superintendent and staff are charged to deliver the correct amount of water to members at the proper time (UVUWA, 1903b; Key Informant Interview, 2004a). The chain of command is cyclical as Figure 5.1 illustrates. The Board oversees the superintendent. The superintendent oversees the crew who directly oversee actions of individual members. The members, in turn, oversee the Board of Directors by voting for competent leaders.

Unlike the UVWUA, the organization of the Bureau of Reclamation has changed considerably over the years. Even today, an incoming Commissioner is likely to alter positions, so a new organizational arrangement may appear as often as every few years (Storey, 2007). The only positions that have remained fairly constant over time are the Secretary of the Interior at the top of the organizational command chain, followed by a Director or Commissioner of the Reclamation Service.

The inception of Reclamation’s original organization can be credited to Franklin K. Newell. In the spirit of Progressivism, Newell desired the Service to be efficient. He opined, “Every effort should be made to attain the highest possible efficiency in every branch of the work” (USGS, 1904: 24). He saw dividing the Service into geographic districts as the key. In each of the thirteen western Reclamation states, there would be at least one District Engineer. Newell pronounced, “The district engineer has charge of all of the work in his district and matters are referred to him to report” (USGS, 1904: 29).



Lines of responsibility were clear as Figure 5.1 displays. The Reclamation Service linked to the UVWUA via the Project Engineer. This Reclamation official, during construction, resided in the Uncompahgre Valley and oversaw all aspects of project creation. He attended all UVWUA stockholder meetings and reported the status of project work. Because he was the most visible and accessible Reclamation Service agent, most requests from the Association went through the Project Engineer. The request process could be lengthy. The Board of Directors made a request to the Project Engineer. He sent it to the District Engineer who submitted his report to the Chief Engineer. From there, the Chief Engineer submitted the report to a board of consulting engineers. This group would assess the information to “ascertain all the facts, to verify conclusions, and to approve or disapprove the recommendations” (USGS, 1904: 30). Final approval would come from the Director or Secretary of the Interior. Official information would then trickle back down the chain to the Project Engineer who would inform and advise the Association.

Even in emergencies, this lengthy process had to be followed. In addition, the “top-down” approval process became increasingly problematic as the Reclamation Service began creating more and more projects. In its first five years, the Reclamation Service authorized 25 projects (USBR, 1997: 5). With each new project added, an older system’s priority for “attention” was diminished. The more projects there were the more burdened key officials

became. Because action could only occur after the chain of approvals, many urgent needs were neglected. The decision-making process was anything but efficient.

Conflict Begins

Because requests went from the “bottom-up,” conflict resolutions could be lengthy. One example of this occurred when the Reclamation Service purchased privately owned canals in order to unify the Uncompahgre Project’s distributing system. From the project’s approval in 1903 to 1915, the Service and the Association struggled to obtain the largest five privately owned canals on the system: the Montrose and Delta Canal (the largest on the project), the Loutsenhizer, the Selig, the Ironstone, and the Garnet.

Most of these canals were owned by mutual companies, with farmers as stockholders. To purchase the canal, the federal government had to purchase company stock from each share holder. Sometimes it paid a farmer outright. Other times it offered credit for the farmer’s future construction charge debt. The federal government delegated responsibility to the Association for persuading canal companies and their stockholders (who were almost all members of the Association) to sell their canals. The transactions then had to go through the official Reclamation Service chain.

At the 1906 stockholder meeting, the UVWUA spent most of its time discussing how to obtain the Montrose and Delta and Loutsenhizer Canals. Most irrigators there saw the necessity of unifying the system, so attainment seemed likely (UVWUA, 1906: 178). By 1908, however, the canals were still privately owned. In addition, canals were in increasing states of disrepair. Canal owners assumed the federal government would buy them out quickly and improve the canals itself, so they left them unattended (UVWUA, 1908a: 183).

The bureaucratic system in Washington impeded acquisition. The federal government was forced to “drag its feet” with the canal owners because a new U.S. District Attorney had been appointed. The local Reclamation Project Manager could make tentative contracts, but because the transfer of ownership itself depended on the District Attorney, the issue was stalled until the Attorney had time to assess it (UVWUA, 1908a: 183).

Many Association members – especially those on the two unkempt canals – were frustrated. Apparently, the tentative contracts offered by the local Project Manager, C.T. Pease, on the two canals were not approved by the UVWUA’s Board of Directors. In addition, the canal purchase amounts offered by the federal government did not coincide with previous information given to the Board (UVWUA, 1908a: 183).

In 1910, formerly cooperative ditch companies threatened to withdraw their support of unification because miscommunication had reached a high point. Ditch owners claimed they could not get adequate reassurances from the federal government regarding the protection of their water rights and were generally confused as to what the federal government would provide. T.W. Monell, a stockholder of the Loutsenhizer Canal *and* a Board member of the UVWUA, publicly announced the withdrawal of his portion of the canal until the federal government could provide “satisfactory answers” to four questions (UVWUA, 1910: 194):

First, what will be the amount of water for your land? Second, who will distribute that water and under what ruler? Third, at what time will they give water for ditches taken over? Fourth, when a ditch is sold to the Government, would it deprive the owners of rights in that ditch of their carrying capacity right in case at any time there should not be enough from the tunnel for any reason?

Threats to abandon stock transfer pledges essential to unification spawned factions within the Association. A resolution in 1910 announced, "Notwithstanding the fact that every ditch company has by vote of the company or through its officers agreed to transfer to the Government all its rights under agreements set forth in the contract, certain of these companies seem to be inclined to violate the provisions of this agreement" (UWVUA, 1910: 194). The resolution gave the Board of Directors the authority to take legal measures against such ditch companies. Taking legal action against its own members could have been seen as treachery by someone like T.W. Monell who was both a UWVUA Board member and a privately-owned canal shareholder. At the same time, from an Association standpoint, members who had previously promised unification appeared disloyal when they demanded new terms for canal contracts.

Individual rationality in pursuit of understandable self interest was leading to collective irrationality. On one hand, individual farmers desired the greatest return for their shares as well as adequate reassurance of their water rights protection before agreeing to unify. On the other hand, the organization needed system unification to make the project a success.

In 1911, the Reclamation Service attempted to address matters by inviting Uncompahgre canal owners to a special meeting. The *Denver Post* predicted all ditch owners would attend. In its announcement of the 1911 meeting, the newspaper helped to communicate the federal government's position. It proclaimed "it is now generally understood...that the government cannot lift a shovelful of dirt toward the completion of the [Uncompahgre Project] until it is in control of all the ditches and water rights" (*Denver Post*, 1911: 14).

The meeting was unsuccessful. Reassurances as to water rights and proper compensation were not sufficient to halt this conflict. In fact, holding out for a better offer seemed to make the most sense now because mutual company ditch owners understood that their support could "make or break" the project. Individual rationality began to dominate the discourses to the detriment of organizational mobilization.

By 1913, the conflict was still raging and by then included farmers on the Loutsenhizer and Ironstone canals. At an Association Board meeting that year, a committee for the Ironstone Canal submitted a resolution. In addition to setting a purchase price of \$58,080 and demanding the retention of current water rights, the committee requested each stock holder of the canal be released from Association subscriptions and, instead, be allowed to sign a contract directly with the federal government. The UWVUA Board was astounded. It denied the request, resolving (UWVUA, 1913b: 126-127):

[It] is impossible...to recommend the acceptance of any of the conditions proposed, and [we] believe after three years futile efforts to unify this ditch, we are farther apart today than at the beginning,

BE IT RESOLVED that this Board as a sequel to the whole question, request the Reclamation Service to start at once and build a parallel ditch to said Ironstone ditch.
Unanimously Carried.

As it happened, the Reclamation Service did not have to construct a parallel canal. A “late offer” of \$300 per share to the Ironstone shareholders resulted in half of those settlers signing on for unification. The Loutsenhizer, likewise, finally seemed within reach as the Board of Directors of the UVWUA proposed purchasing water rights at \$800 per acre “to be paid in cash, 30 days after the title to each has been passed and accepted by the Government” (UVWUA, 1914b: 135). After claims of inequality, the federal government agreed to increase the Ironstone offer to \$400 per share. But to receive these offers, 90% of the shareholders had to sign on (UVWUA, 1915b: 206)

These were generous offers and most knew it. Because individual rewards now required the entire group to sign on, neighbors pressured neighbors to agree. This finally began to galvanize cooperative action. It shifted the people’s pursuit of individual rationality toward a collectively rational solution because individual success now depended on collective action. But the conflict was not yet over.

When word of the new monetary offers reached ditch owners who had sold their canals long before this, the Association had an uprising on its hands. Shareholders of the Garnet Ditch Company had sold their rights for \$7 a share and were furious that those who had “held out” received such an enormous amount. According to UVWUA records, “[The] Garnet Ditch and Reservoir Company, in order to assist the Reclamation Service in the acquisition of other ditch systems, made a price less than one third that at which other properties have since been acquired, such as the Ironstone Ditch” (UVWUA, 1915i: 159). Even worse, the Garnet Ditch owners would have to pay for the other canals, as the federal government purchases would be added to project construction costs. The owners demanded they at least be paid in cash since their compensation had been in the form of credit (UVWUA, 1915i: 160).

It was becoming clear that the “top-down” approach to communication and decision-making was contributing to the problem. Misinformation from the Reclamation Service on offers as well as pressure to unify in a timely manner forced the Association into competition with itself. It was simultaneously a farmer advocate and federal government enforcer. Faith in the Association seemed to dwindle as many, even the Board itself, realized the Association was powerless to play either role. To succeed in keeping mutual company canal owners from a full-fledged insurgency, it needed the physical presence of an authorized federal representative. The Board said, “Unification cannot be effected unless someone be present who can speak with authority” and the “government ought to send such a representative to the Project” who could answer questions and remain until unification was established (UVWUA, 1915c: 151).

The Reclamation Service tried to resolve matters. In March 1917, the *Reclamation Record* finally reported all privately owned canals “have been acquired by the United States after

much negotiation.” However, there was “much dissatisfaction over the prices paid and the methods of payment for various canals. Inequitable treatment is alleged in dealing with different owners of canals, etc.” (*Reclamation Record*, 1917: 127).

Even though Garnet owners undoubtedly felt unfairly treated, they soon quieted their complaints. It seemed likely the federal government would at least give them cash instead of credit for their water rights and this placated them enough to let the issue die (UVWUA, 1915i: 161). They knew other matters were fast becoming critical. By 1915, Association members saw the need to unite as a body instead of fighting with each other. Construction charges on the Uncompahgre Project were beginning to increase beyond estimates and soon the federal government intended to collect charges far beyond farmers’ ability to pay.

Conflict Escalates

When members of the UVWUA signed the Articles of Incorporation, contracting with the federal government via the Association, they assumed certain aspects of their dealings to be secure. They were sure of maximum per acre assessments, general land productivity, and liens on land as “low impact.” Within a short while, all three matters became contentious issues.

The Articles of Incorporation stipulated that “corporate indebtedness” of the Association was not to exceed “two thirds of the amount of the capital stock” which was set at 100,000 shares (UVWUA, 1903b: 10-13). Stock was initially issued at \$1 a share. *Article V* stated only an additional \$24 a share could be added to this, so maximum charges could not surpass \$25. These articles set a cap on the total Association liability and assured members that their personal assessment would not be excessive. If the articles did not assuage people’s concerns over personal liability, federal government officials tried to do so. A \$25 an acre maximum had been promised by Reclamation Service officials, such as A.L. Fellows in the *Proceedings of the First Conference of Engineers of the Reclamation Service* (USGS, 1904: 161).

When members signed on to the project, there were few questions about land productivity. From all accounts, the project would include over 100,000 acres of good-quality land (*Montrose Enterprise*, 1903: 1). The abundance of fertile lands meant profit for every farmer and easy repayment to the federal government. The equation for individual repayment charges was: the total construction cost divided by the total irrigable acres. The more productive acres on the project, the less each person would have to pay.

Association members knew that in order to benefit from the project they had to agree to a lien on their lands as collateral for construction charge repayments. Because everyone’s land would contain a lien, it likely did not occur to members that personal credit would be a problem. Credit companies would understand that all lands in the area had this stipulation. In addition, because this was a *federal government* project, how could loan companies deny credit?

It soon became evident that these “certainties” were not so certain. By 1908, Reclamation officials realized their construction estimates were too low. Original construction estimates were reported to be about \$2.5 million, but as early as 1909 the costs of construction had increased to \$5 million (Montrose Title, 1909: 2; Moynihan, 1924b: 14). Unless the

Association had an additional source of revenue, repayment charges had to be increased. This would not be welcomed by farmers. Because the Association's articles capped liability amounts, the Service proposed altering the Articles.

A Reclamation official noted, "The expenditures on the tunnel having exceeded the amount of money that the Water Users Association would be able to assess its stockholders under its articles of incorporation, it became necessary in 1908 to ask for certain amendments to those articles" (USBR, 1901-1912a: 245). At a meeting on Nov. 30, 1908, members voted 67,668 shares in favor and 4,596 opposed. The official continued, the "necessary two-thirds vote having been secured for their adoption, the amendments were declared carried, and were later filed with the Secretary of the State in Denver, Colorado" (USBR, 1901-1912a: 246).

Article XVI was thereby amended to read, "The corporate indebtedness *other than that incurred for the construction or purchase of tunnels, canals, or other irrigation works*, shall not exceed two-thirds of the capital stock" (italics represent amendment) (UVWUA, 1908b: 189). This effectively allowed the federal government to adjust the construction costs as needed, with no cap on the charges. Association liability was now in the hands of Reclamation engineers.

Why would Association members vote to increase their liability? They had no choice. Farmers needed water delivery as soon as possible. Having reached the pre-approved amount, the Reclamation Service could not legally finish the project until their cap on construction charges was lifted. If farmers wanted completion, they had to vote "yes." Reclamation officials very likely threatened to close the entire project unless the articles were altered. Also, members might not have seen how their personal liability would be affected. Given what they knew, their \$25 an acre guarantee was still valid and the large total amount of project land was more than sufficient to cover excess construction costs.

Members *did* understand the situation enough to support a legislative bill that would extend repayment from ten to twenty years (UVWUA, 1909: 191). By 1909, administrators of many Reclamation projects were worried about repayment, and the UVWUA knew it could one day be in the same situation. Many Reclamation farmers not only lacked extra funds to pay back the Reclamation fund, but were losing money. Some had to take out personal "start-up" loans and were heavily in debt before they even received water. Additionally, many project settlers had never farmed before and lacked the agricultural knowledge to make their land productive.

Yet, farmers received little sympathy from the Reclamation Service. Director F. H. Newell was staunch in his belief that if settlers could not support themselves it was due to their own lack of fortitude. They should leave and let more experienced persons take over the land (Rowley, 2006: 156). He stood firmly against extending repayment terms. He assumed if repayment was extended once, settlers would take advantage and try to avoid paying altogether.

Newell (*Hearings*, 1909: 77) said:

In every community and in every occupation there are some men who are habitually unfortunate – who never succeed in making good on any attempt. These men are naturally attracted by the opportunities of government reclamation...They succeed in

making a homestead entry, and perhaps display some energy for a time in trying to cultivate the ground, but not having had any previous experience they fail. They and their families are proper objects of pity, and the most natural thing is to turn to the Government for relief...The majority of men can and will make every payment in ten annual installments...[These men] are far less conspicuous than the one man who...fails. I do not wish to be understood as saying that it would be inadvisable to extend the time of payment in special cases...but at present the reasons do not seem sufficiently weighty for this Congress to take action. In fact, I believe it would be disastrous. The enactment of such legislation at present would probably lead to still stronger demands for extension of time, and finally attempts at repudiation of the payments.

Newell succeeded in convincing Congress that the 1909 repayment extension proposal should be rejected. This did not alleviate the burdens on Reclamation project farmers and did not halt further attempts at extension legislation. The UVWUA supported another bill in 1913 that would have extended repayment to 30 years, but official extension legislation did not occur until 1914 when Newell was essentially relieved of his duties (UVWUA, 1913a: 125; Rowley, 2006: 181).

By 1914, Association members were deeply concerned about repayment. Construction amounts had greatly inflated and the time to start repayment was near. The Association could see that its ability to repay costs would be greatly hindered by previously unforeseen conditions. High freight charges, expensive (but much needed) roadways, and high local interest rates were keeping Uncompahgre farmers from becoming as successful as they hoped to be (UVWUA, 1914a: 204).

Further problems came in the form of seeped lands. Like other projects, some Uncompahgre lands became waterlogged once water was applied. The Reclamation Service had not originally considered drainage. When initially confronted with drainage issues, leaders – such as Director Newell – felt these problems were due to settler incompetence and showed little sympathy (Rowley, 2006: 156). Some unfortunate farmers, who could not produce crops to support themselves let alone finance a drainage system, were trapped by rising ground water tables.

Within the UVWUA, frustration became evident. At a Board meeting, Philip Francone, a project farmer, sought \$105 in damages from the Association. His crops had been ruined due to seepage from an overflow on the West Canal (UVWUA, 1915a: 148). The Association did not know what to do. The entire project was at risk as increasing amounts of acreage were made unproductive due to water seepage. Neither the farmers nor the Association had the means to build drainage works. The Association resolved that because the federal government was in charge of operation and maintenance, finding a drainage solution should fall to it.

Because the Service was still constructing the project, it made the most sense to have it concurrently build the drainage system. Therefore, in 1914, the Association requested the Reclamation Service to investigate building a drainage system and hoped the Service would act fast. Farmers needed crop production to generate revenue so they could support themselves and repay construction costs (UVWUA, 1914c: 140).

The Association renewed its request the next year, but still received no relief (UVWUA, 1915f: 154). The Service had too much on its plate. It was overseeing many projects and could not find a way to address all project issues. Because decisions were issued “top-down” through a long chain of command, there was no way the Service could effectively aid in emergencies. The local Project Manager would no doubt realize the importance of quick action, but ultimately had to await the Secretary of the Interior’s approval to act. Though the problem (seeped lands) and the solution (Reclamation’s construction resources) were intertwined, the centralized bureaucracy of the Reclamation Service dictated their separation until approval in Washington.

Entangled in requests for drainage aid were continuing worries over assessments. The less productive the lands became the greater the financial burden on each farmer. How could water-logged farmers pay assessments? If they did not pay, then others would have to make up the difference to repay construction costs in the ten year deadline. If they sold or abandoned their sodden lands then the total irrigable acres would decrease, also raising assessments on each remaining acre.

Another problem that plagued Uncompahgre farmers (as well as Reclamation farmers everywhere) was that lands were used as collateral for federal liens. Irrigating required more than water delivery. Land had to be prepared. Seeds and machinery had to be purchased. Because many farmers came to the project with little personal wealth most had to take out farm loans. Once a lending institution realized a farmer’s land was already being used as collateral and could be taken over by the federal government, it would not extend credit. All Uncompahgre lands were susceptible to federal takeover. When farmers *were* successful in obtaining a loan, the interest was so high that crop profits often went straight to the banks. Farmers began to panic. Soon repayment charges would have to be paid. How could anyone pay even \$25 an acre when they could not afford to grow crops?

By 1915, UVWUA members knew the credit problem would destroy the project if ignored. In a heated meeting, the Board requested the complete removal of liens on the project. It asserted, “[The] water user is of necessity, in most cases, a borrower and will be greatly assisted in obtaining credit and a lower rate of interest... [It] will tend to improve his financial condition and enable him to attain that degree of prosperity that [will enable him to] meet payments on the water right” (UVWUA, 1915f: 154-155).

The Board resolved that “the Secretary of the Interior be requested to relieve the lands under the project of the lien for projects payments” and that it take place as soon as possible. They also alluded to darkening settler moods. They said “nothing would lend greater to...relieving the present depressing impressions as to the burden of project payments” than removing liens (UVWUA, 1915f: 155). The request was denied (UVWUA, 1915g: 156).

Even if liens and sopped lands had not been an issue, repayment charges were enough to panic settlers. Construction inflation could be seen on every project and many Reclamation settlers were pressed to start payment. In addition, in 1913 the U.S. Supreme Court ruled that the Reclamation Service could now assess operation and maintenance (O&M) charges on projects

(Rowley, 2006: 155). Before this, O&M was financed solely by the Service, but as early as 1905 officials realized the depleted Reclamation fund could no longer bear the burden.

The prospect of increased financial burdens added fuel to a rising campaign against Reclamation policies and practices. Most project members felt unable to repay all their assessments in the ten-year time frame. They also felt deceived by Reclamation officials. In the early years, settler complaints went unheard, but by 1913 the pleas could no longer be ignored. In the face of this discontent, the Service was about to change into what many hoped would be a more “settler friendly” organization.

Reclamation Reorganization

Appointed by Woodrow Wilson in 1913, Franklin K. Lane became the new Secretary of the Interior and took more interest in the affairs of the Reclamation Service than anyone before him. Early in his tenure, Lane visited all the Reclamation projects in order to evaluate conditions. He was astounded by settler problems and was appalled at the levels of miscommunication between Project Managers and settlers. Lane returned with a desire to reorganize the entire Reclamation Service (Rowley, 2006: 173, 180).

It was clear that an organization composed entirely of engineers, whose aim was technological efficiency, was an *inefficient* manager. There was a great deal more to governing common property resources than creating irrigation works. The economic and social issue of settler repayment was proving to be as pressing as constructing new projects. Secretary Lane understood this and took it a step further. According to Pisani, “Lane was the first Interior Secretary to recognize that problems of federal reclamation were psychological as well as economic” (Pisani, 2002: 116).

One of Lane’s first tasks was to address the problem presented by Director Frederick H. Newell. Newell’s hubris left him tactless when dealing with project farmers (Rowley, 2006: 177). He had no qualms in blaming poor project conditions on inexperienced farmers. According to Pisani, “Many farmers, he believed, were simply too lazy to seek professional advice” (Pisani, 2002: 28). Settlers fought back. Their feelings were reflected in local newspaper accounts which berated Newell’s actions and attacked his reputation.

Not surprisingly, Newell felt threatened. He created a confidential “hit list” of uncooperative farmers. On November 12, 1912, Newell directed Project Managers to prepare a list of individual settlers on their projects who complained the loudest. Managers were to scribe a brief message about the settler, along with acres owned and cultivated, and put the letters “KKK” at the top right to signify him/her as a “Known Knocker and Kicker” (Rowley, 2006: 174). Newell asserted that most troublemakers did not even own project land. Having a list of this sort could prove his claim. Also, the list was a precautionary measure to ensure Reclamation’s future, by weeding out those likely to agitate Reclamation inspectors and sympathizers, such as the new Secretary Lane.

The “KKK” list grew steadily over the next year. These engineers now knew who to officially ignore and of whom to be wary. The Manager was now the spy, labeling members as

“socialist,” “loudmouthed,” “defiant,” or “criticizer of reclamation methods” (Rowley, 2006: 175-176). One Truckee-Carson Project settler, Matt Johnston, was a well-known offender. Project Manager D.W. Cole wrote, ““Volumes have already been written about Matt in connection with his refusal to pay charges pending drainage of his land”” (Rowley, 2006: 176).

Not all Project Managers were comfortable “ratting out” their friends. On the Yakima Project, a Project Manager maintained there were no chronic complainers. Newell “sent a scolding letter” to him, “ridiculing” his lack of compliance (Rowley, 2006: 174). He personally knew of many trouble-makers on the Yakima Project and wanted them listed so as to preserve the future of the Reclamation Service. Rowley noted, “The confidential request for names and lists of complainers on the projects reflects the deteriorating relationships between the leadership of the Reclamation Service and project settlers” (Rowley, 2006: 176).

On Secretary Lane’s 1913 trip to Reclamation projects, he discovered many settlers were uneasy with their Project Managers. He returned to Washington, vowing to raise the standards of Project Managers. He wanted them more approachable in order to ease settlers’ burdens. Because Managers were settlers’ direct link to the federal government, their role was “crucial” (Rowley, 2006: 180). Settlers had to be assured their Reclamation contact was trustworthy and would be sympathetic to their concerns. This would be no easy task – for some Managers would have to change from “project spy” to “project counselor.”

Lane’s drive soon produced a massive reorganization of the Reclamation Service that deposed Director Newell (relegating him to a symbolic position) and transferred the Director’s duties to a five-member Board or Reclamation Commission (Newell officially resigned in 1915). The Director (now A.P. Davis) was simply one of the five Board members who collectively ran the Service (Rowley, 2006: 177, 182).

To address the Project Manager issue, Lane took the advice of Sydney B. Williamson, the Chief of Construction, and attempted to increase Managers’ authority by providing direct communication between them and Service officials (Rowley, 2006: 192). Because Managers were physically removed from Washington, it was difficult for them to acquire important information in a timely manner, even though they were the chief bearers of information to settlers. But the chain of command remained lengthy.

Lane divided the Reclamation Service into two offices. The Washington office would still house the Director and serve as an administrative office. A new office would be created in Denver that would oversee project construction. Managers could report directly to the Chief of Construction. The Chief of Construction, as the head of the Denver office, would be appointed by the Secretary of the Interior just as was the Reclamation Service Director (Rowley, 2006: 192). See Appendix A for the 1913 Reorganization Chart.

This was an attempt to reduce the chain of command. In Denver, the chief of construction would takeover many of the Director’s duties in the field by overseeing construction as well as operation and maintenance of projects (Rowley, 2006: 192). He or she would be in direct communication with the Director. Project Managers would be in direct communication with the Chief of Construction, thereby reducing the layers of communication. The Secretary

went further by dividing the Service into four divisions: the Executive and Engineering branch, the Legal Division, the Fiscal Division, and the Supervisor of Irrigation (Rowley, 2006: 192-193).

In the process of reorganizing the Reclamation Service, Secretary Lane wanted to address settler concerns directly. He created a Board of Review, designed to investigate each project's financial situation and perhaps pinpoint expenses settlers should not have to bear (UVWUA, 1915b: 207). The Board would consist of a Reclamation official, a representative appointed by the Secretary of the Interior, and a representative of the water users. They would provide recommendations to the three-member Central Board of Cost Review, of whom Elwood Mead was a member. The Board of Review would pass its recommendations to the Secretary (Pisani, 2002: 119).

In 1915, Secretary Lane included the Uncompahgre Project among those targeted by the Board of Review. At first, UVWUA members were perplexed as to why their project would be included. The project was unfinished and not all costs had been calculated (UVWUA, 1915c: 151). They complied and ended up appreciating the receptiveness of the Board. It seemed they finally had a direct line of communication with Washington, or at least the *image* of such.

By 1915, Uncompahgre farmers felt their promise of a \$25 cost cap per acre was jeopardized. To safeguard their security, they gathered proof of this promise, saying "the evidence before the Board of Review shows clearly and beyond question that the original contract tendered by the Government was not to exceed \$25 per acre by proper officials of the Government" (UVWUA, 1915h: 157). They urged the Board (UVWUA, 1915h: 158):

...that the Government be requested to carry out the original contract of not to exceed \$25 per acre and if that be impossible under the law, that they eliminate the cost of the tunnel and hold this as a Government public work...and apportion the remainder of the charges on the land, or if this be impossible that the Government retain ownership of the project and rent the water at actual cost of maintenance and operation, not to exceed \$80 per second foot.

Their requests were largely unheeded. Though the project's Board of Review included the UVWUA president and other sympathetic listeners, the Board had no valid influence in Washington (UVWUA, 1915e: 212). As Pisani said, "their decisions were purely advisory" (Pisani, 2002: 119). Their recommendations went to others who made recommendations, so little action could be taken. In fact, few of Secretary Lane's designs for reorganization met with success. Most were tragically ill-fated. Settler problems were still ever-present and Reclamation officials became increasingly confused over their roles and responsibilities.

Problems with Reorganization

The first sign of reform distress appeared soon after the creation of the five-member Reclamation Commission. Secretary Lane had seen Director Newell's actions as tyrannical and decided to reduce individual directorial clout by dispersing authority to five persons instead of

just one. Unfortunately, rules about authority within the Commission were not specific enough and the result became an administrative nightmare.

According to A.P. Davis, the new Director, the Commission represented a “plural authority” (Rowley, 2006: 200-201). One member might promise something to project members, but did not have the authority to commit the Reclamation Service. Five different sets of promises could be made, but none could be followed through without full Board approval. The Uncompahgre Project specifically suffered. Rowley noted, “On several occasions, especially on the Uncompahgre Project in Colorado, promises regarding the construction of drainage works were made both orally and in writing by one Commissioner. Those promises committed the Service to spend a million dollars, even though no single Commissioner had the power to authorize appropriations” (Rowley, 2006: 201).

The debacles were numerous and greatly embarrassed Director Davis. He became adamant that the Commission be abolished and the Director be given independence. The need for effective governance was imperative. Lane, realizing this, relented and soon disassembled the Reclamation Commission (Pisani, 2002: 117; Rowley, 2006: 201, 203).

Lane’s creation of a construction office in Denver also created confusion. The increased Reclamation presence in the West was meant to improve Project Managers’ communication with those higher up, but it took time to work out linkages. In the meantime, there were delays in project completion (Rowley, 2006: 196). The Chief of Construction seemed to have too much to oversee. Many Managers, comfortable in the previous system, were unsure who to report to or were unwilling to alter actions.

Delays infuriated settlers. Given previous instructions to spy, current instructions to sympathize, and the chain of command in question, Project Managers and other Reclamation workers became disheartened. In 1915, a former Reclamation official wrote to Director Davis describing the “demoralizing” spirit of the entire organization (Rowley, 2006: 197). The initial zeal of the engineering elite, that envisioned transforming the desert into a paradise, evaporated.

With Lane’s Board of Review being largely ineffective, settlers soon realized their “window” to direct contact with the Reclamation Service constituted a hoax. Communication between project settlers and the federal government during this reorganization further deteriorated. Settlers could not get proper assurances from their disheartened Project Managers, the Board of Review, or the Reclamation Commission. Uncompahgre Project settlers felt their frustration deeply.

In 1917, the Reclamation Service desired to call the Uncompahgre Project “complete” and thereby begin to assess construction charges. Association members were so frustrated that they requested a direct meeting, in person, with the Secretary of the Interior and prepared a letter to him. Members had tried to work with the Irrigation Commission and various officers, but dealings were “unavailing and unsatisfactory” (UVWUA, 1917: 220). The only way to seek redress was to go straight to the top of the command chain.

So distrustful was the Association that it formulated delivery stipulations for the Secretary's letter. The Association would send a copy of its resolution to Colorado Congressman Edward T. Taylor. Members desired Taylor to personally deliver the letter to the Secretary. They hoped the direct communication would succeed as they felt "the gravest of consequences" would occur if the project were opened at that time, "particularly to the poorest people, and the holders of the poorer lands" (UVWUA, 1917: 220).

Tempers within the Association flared to such a degree that Director A.P. Davis himself felt the need to attend a special stockholder meeting in April, 1917. In the meeting, Frank Catlin, one of the Association's founders, felt "the project [was] not ready for opening" nor did the water users have enough information on plans for completion, yet the issue was "of such grave importance as in the minds of water users" that it could mean "future prosperity or adversity for all located" there (UVWUA, 1917: 220).

For his part, Davis did little to reassure the Association. He spoke about the Reclamation Act of 1902, project construction, and construction costs. He agreed to answer questions posed by Association members, but if anyone expected clear answers, they were heartily disappointed. Davis responded only to questions involving technical aspects of the project. He claimed he could not answer any question of a "legal nature," thereby extricating himself from the "line of fire" (UVWUA, 1917: 220). Not even the Director of the Reclamation Service, in the presence of the entire Association, would provide information on which the entire valley depended. The Association did not back down. Members persisted in their demand of accurate information. So fervent was their insistence of proper treatment that even the *Reclamation Record* took notice.

In February, 1918, Davis was to return to the UVWUA and those acquainted with the situation expected "fireworks" at the meeting. But, perhaps in an attempt to alter its image of discontentedness, Uncompahgre irrigators startled outsiders by showering Davis with kindness. According to *Reclamation Record* (1918a: 118):

The much-heralded meeting of the water users' association at Olathe on Tuesday proved to be a veritable love feast between the Government's representative on the one hand and the water users on the other. Those who expected strife found instead peace and good will, and, if any present were not in accord with the majority, they kept silent, and all appeared, on the surface, as pacific as could be.

Davis, himself, was astounded. As he rose to speak, he was greeted with a standing ovation. He announced to the group that he had not expected the applause, but greatly appreciated it. A reporter noted (*Reclamation Record*, 1918a: 120):

A great change was noticeable, I am told, in the attitude of Director Davis over former occasions. And the people appreciated it. Whereas in former times perhaps the water users' attitude might have appeared somewhat like a red flag, Tuesday both parties appeared to be more than eager to meet more than halfway in a conciliatory, cooperative spirit that was good to see and hear.

This time, Davis seemed more willing to respond to Association unease. He said that Secretary Lane sent him to “settle problems on...taking over the project by the Water Users’ Association” and to “explain the situation on the Project from [the] Government point of view.” He had come to bring peace to the Association. Davis reported that Secretary Lane “wished harmony with the Water Users in accordance with the laws made” (UVWUA, 1918a: 222).

He also came with a peace offering. If he received a vote of approval from the members in attendance, he would be able to delay the project’s opening by five years. Davis asked for a show of hands from “those opposed to the extension of the opening of the Project for 5 years,” whereupon no hand rose (UVWUA, 1918a: 222). The extension would also include the Reclamation Service retaining operation and maintenance until the Association resolved to takeover. It also passed unanimously.

Continuing in his role of peace-giver, Davis then sent Project Manager Pyle out of the room and asked the Association if it was content with his work. The body of members said they were happy with him and desired him to remain on the project. The Association meeting ended with members providing a vote of thanks to A.P. Davis for his visit and even referred to him as their “distinguished friend” (UVWUA, 1918a: 222-223).

So ardent were the good feelings toward Davis that the Association offered “peaceful” messages back to the federal government. The U.S. had become involved in World War I, and Association members wanted to show their patriotic support. At a special stockholder meeting, the Association resolved, “We pledge anew our individual and united support to the government...[and] denounce...those propagandists who would sow the seeds of discord in the ranks of farmers of this land...We will...continue to furnish...our industry, our products, and our sons until the deadly germ of world dominion...is destroyed forever” (UVWUA, 1918b: 225).

Most Reclamation settlers were content for a time (Pisani, 2002: 121). This was less due to Secretary Lane’s organizational reforms than to a mix of World War I patriotism and the 1914 Reclamation Extension Act. As with the Uncompahgre Project, Reclamation farmers everywhere subordinated their interests to demonstrate their patriotism. Instead of planting for immediate profit, farmers grew crops with an eye to supporting troops and fellow countrymen in a time of peril.

The Reclamation Extension Act of 1914 was the first piece of legislation extending construction repayment. Instead of ten years, settlers now had twenty years to pay. In addition, payments were graduated with farmers paying only two percent of construction fees their first year (Pisani, 2002: 118). Though many settlers were satisfied with the Act, Reclamation officials had reason to protest. The Act stripped away a great portion of their decision-making power. In fact, the Secretary of the Interior’s authority specifically had been reduced. He no longer had the control over project selection. New projects had to be approved by Congress. Additionally, the Secretary had to send Congress completion estimates and costs of current projects (Pisani, 2002: 118).

A Peak of Conflict – 1923 and 1924

The relative peace between the Reclamation Service and its projects' settlers was merely the calm before the storm. The peak of the conflict occurred in 1923 and 1924. Not surprisingly, the conflict coincided with the repayment of construction charges to the federal government, which were to begin in 1923. The resulting strife endured for decades.

Though appreciative of Director Davis' good will, the Association still struggled with credit problems, seeped lands, and income issues, but trusted its cause was in the right hands. Indeed, by the latter part of the second decade, some Uncompahgre Valley problems had been resolved. All formerly private canals had been purchased and the Uncompahgre Project became a unified system. More people were moving to the valley. In 1918, the *Reclamation Record* reported that an "unprecedented number of mail and personal inquiries" had come in as news of the project's opening date was disseminated (*Reclamation Record*, 1918b: 208).

Association farmers were also benefiting from the presence of an agricultural agent on their project. In 1915, in an attempt to increase the general farm knowledge of many new cultivators, the federal government proposed sending an "agricultural specialist" from the Department of Agriculture to aid settlers. Association members were eager for him to come, and by 1921 he had helped numerous farmers (UVWUA, 1915d: 210). At the annual stockholder meeting, the Association officially thanked him and noted he "is of great benefit and assistance" and requested him to remain (UVWUA, 1921: 233).

The Association may have had the good favor of Secretary Lane and personal assurances from Director Davis, but organizational linkages with the Reclamation Service were still inadequate. When Secretary Lane disbanded his Reclamation Commission during World War I, this effectively put the position of Director back on the second rung of the command chain. In fact, with the exception of the Denver office's arrangement, Reclamation's organization largely returned to its original "Newell" design (Storey, 2007).

Project Managers at least enjoyed their improved communication with Denver's construction engineer, but for water users, the path for approval of their decisions was even lengthier than before. In the 1920's, as the Department of the Interior's size increased, the Secretary often had aides deal with settler issues (USBR, 1997: 143). After the Reclamation Extension Act of 1914, settlers also had to wait for approval from Congress on many issues.

Circumstances began to change around 1921. In 1920, Secretary Lane, one of Reclamation's greatest advocates, retired due to ill health and later died in 1921. The new Secretary, Albert Fall, turned out to have more pressing issues than Reclamation to contend with. He resigned in 1923 due to an indictment he received for accepting bribes from oil companies in exchange for drilling on federal land in Wyoming (Rowley, 2006: 213, 215).

In 1921, the nation, no longer producing for wartime demand, experienced an agricultural depression (Rowley, 2006: 214). This hit the UVWUA hard and members were granted a postponement on water charges that year (UVWUA, 1921: 231). In June, the valley also experienced the worst flood on record. In addition to damaging canals, headgates, roads, and

railroad tracks, the flood hurt many private farms. One report said “it is believed that not a single bottom-land ranch escaped damage” (Foster, 1921: 473-475).

In the midst of settler difficulties, the Reclamation Service had its own troubles. The most pressing issue was fast becoming the dwindling Reclamation fund. By 1921, Reclamation had spent \$130,742,488 on projects and had only received \$10,677,350 from farmer repayments (Rowley, 2006: 214). By 1923, only one out of the twenty-eight projects was in full repayment compliance (*Montrose Daily Press*, 1923f: 1). Rowley noted, “The major problem remained the inability, if not the outright refusal, of project water users to retire their debts to the Reclamation Fund” (Rowley, 2006: 215).

A.P. Davis, with his directorial position reestablished, offered only one solution: make the settlers pay. Davis was beginning to resemble his former colleague, Frederick Newell. With a few exceptions, he felt those who could not afford repayment of charges were “improvident, poor managers, and somehow morally deficient” and should vacate projects if they were not up to the task of making success (Rowley, 2006: 215). His response to the depleted Reclamation fund was that “it was time for the water users to pay up and come to the aid of the Reclamation Service instead of the Reclamation Service coming to their aid” (Rowley, 2006: 218).

Davis’ previous good will for the UVWUA in 1918 seemed to stem largely from Secretary Lane’s insistence of harmony. With Lane gone, Davis was free to show his displeasure. Settlers from projects all over the West began complaining of his treatment (*Montrose Daily Press*, 1924a: 1; Rowley, 2006: 220-221). Davis’ attitude eventually resulted in a call for his resignation just as Newell’s seeming distaste for settlers had forced his expulsion years before.

In 1922, Hubert Work became the new Secretary of the Interior and desired to improve the image of the Reclamation Service. A physician from Colorado and the former Postmaster General, Work’s respected reputation was a pleasant counter to Albert Fall’s record. In the view of irrigators, Work brought decency back to the position of Interior Secretary (Rowley, 2006: 219). Upon his appointment, he was thrust into the arena of Reclamation ills. He had heard numerous settler complaints about promise-breaking and disgust at Davis’ attitude. In October 1923, he created the Fact Finders Commission to investigate each Reclamation project in an attempt to sort out the abundant complaints. In what could have been another powerless Board of Review, Work’s Fact Finders by contrast proved largely effective. The Board reported directly to the Secretary and even appeared before Congress with recommendations. During their investigations, review members held hearings, talked to Project Managers, settlers, and officials, and were unafraid of upsetting Reclamation’s image. In fact, some inside the Service thought the group went too far, referring to it as the “Fault Finding Commission” (Rowley, 2006: 222-223).

Secretary Work wasted no time in ridding the Service of A.P. Davis. When Davis refused to resign, Work terminated the “Director” position and appointed a “Commissioner” to replace it. Like Newell, Davis was relegated to a consulting position and he eventually resigned. Many water users were glad to learn of his departure, and Davis retaliated by blaming water user

associations for his demotion, asserting they thought they could hold out on payments with him gone (Rowley, 2006: 220-221).

With Davis' condemnations ringing in their ears, UVWUA members became highly anxious as the 1923 deadline to begin repayment neared. They had lost a good supporter in Secretary Lane and felt they then had few Washington supporters. Though Secretary Work seemed sympathetic and intended to transform the Service into a more "user-friendly" organization, the UVWUA had little experience with him and did not trust his intentions.

Association members were still very much concerned over how large their repayment amount would be, and Reclamation's change in command only delayed sorting out the figures. The previously established \$25 an acre maximum seemed likely to increase. At this time, Uncompahgre settlers paid around 3¢ an acre per year for internal organizational expenses (UVWUA, 1927a: 6). Even with a \$25 an acre charge to be paid over twenty years, the construction assessments would amount to \$1.25 a year per acre. With many struggling to meet even the 3¢ an acre, the thought of a 416% increase in charges was unfathomable.

Time to Pay

When 1923 arrived, the announced financial burden was stunning. Repayment amounts were fixed at \$70 an acre (*Montrose Daily Press*, 1923a: 1). Neither the five year project transfer delay nor the twenty year repayment extension was sufficient help. The valley was suffering from low crop returns and high production costs. The Denver and Rio Grand Railroad was not providing adequate transportation and marketing of crops (UVWUA, 1923a: 240). The poor financial conditions left many seeking farm loans, but members could not get "sufficient loan assistance" due to federal liens on project lands. Additionally, many acres of project land were still seeped, with no prospect of relief. There was simply no money to pay the federal government.

Water users had no choice but to get their voices heard. Local newspapers started the cry by supporting deferment measures and painting a bleak picture of Reclamation in the Uncompahgre Valley. In 1923, the *Montrose Daily Press* published a report from the State Board of Land Commissioners. The registrar, George Stephan, reported the valley was in a "helpless condition." Many had purchased land in good faith that water charges would not exceed \$18, \$20, or \$25 an acre. They were now abandoning their homes or suffering foreclosure. Stephan noted, the "owner's equity on the land has been wiped out by an increase in the price of water" (*Montrose Daily Press*, 1923b: 4).

Other articles were directly critical of the Reclamation Service. Harry J. Brown, of the *Salt Lake Tribune*, wrote of seven projects – including the Uncompahgre – which were labeled undeniable failures. He said "there are some projects so far on the way to financial ruin that no one, in reasonable probability, can save them now. They can never be saved if the federal government insists on recovering their cost" (*Montrose Daily Press*, 1923a: 1). He continued:

How far the government is to blame and how far the settler for the failure of these projects is up to the Fact Finding commission to determine. It is true that on these

projects, as on most others, the settlers have long complained that they have not been given a square deal from the government and on these seven projects in particular, the settlers have maintained that construction costs assessed against them are not equitably fixed...

How many of these projects would have been authorized and built if the engineers had estimated their probable cost with reasonable certainty? It was the estimates of the reclamation engineers that guided the Secretary of the Interior in approving each of these projects, and the low per-acre cost shown in the estimates made the projects appear more feasible...

Any or all of these projects doubtless would have been generally successful could the costs have been held close to the estimates, but where per-acre costs rose from \$25 to \$70, as on the Uncompahgre...some reason for the complaints of settlers is apparent...

In a series of *Denver Post* Articles, reporter Louis Ludlow added to the UVWUA's claims of abuse. Ludlow had gained access to formerly secret Interior Department files which had recently been "opened" by Secretary Work. He specifically pointed to former Director A.P. Davis as the source of many troubles. Ludlow concluded that "water users had every reason to believe that the cost of construction would not exceed \$25 an acre and entered into contract with the United States on that basis." He had documented evidence from the Reclamation Service which declared, "The cost of the project can not exceed \$25 per acre and doubtless will be considerably less." When it became clear to Reclamation officials that this amount would need to increase, they allowed and encouraged the "wrong impression...to prevail" for years (Ludlow, 1923: 7).

When increasing settler liability could no longer be kept secret, the Service forced the Association to alter its Articles of Incorporation upon threat of project closure. The Association's coerced compliance resulted in "water users assuming an obligation which [was] three times as much as they originally contemplated" (Ludlow, 1923: 7). The federal government's disregard of their contract's inviolability effectively altered their formerly good-natured relationship.

Complications in the tunnel's construction added to the liability. Ludlow reported that "the increase in cost was due to the failure of the Reclamation Service, when estimating cost, to anticipate difficulties ordinarily experienced in underground work, necessitating the duplication of much of the work" (Ludlow, 1923: 7). Additionally, the tunnel was driven through a geological fault (visible to all on the surface) that increased the expense. Ludlow also noted the project's relatively diminished irrigated acreage had contributed to the price increase. When the project was first considered, the Service believed it could irrigate 140,000 acres. That sum was later revised to 100,000 acres. In actuality, the project had only irrigated 64,730 acres, "less than two-thirds of the most conservative estimate" (Ludlow, 1923: 7).

The Reclamation debacles – sparked by the \$70 an acre repayment charge – mobilized Uncompahgre water users. With each person's land at risk of foreclosure and with no means to pay, members panicked. People attacked the Board of Directors for failure to attain proper results. People attacked each other. Many were so overwhelmed they did not know whom to attack. At a special meeting in November, the Association seemed like a rudderless boat. Each

item of concern was “rehashed,” “but nobody suggested a single course of action which would bring about any results” (*Montrose Daily Press*, 1923c: 1).

The member meeting was ripe with anger, but all speech halted with one announcement. After an irate farmer finished his tale, a Board member announced the presence of “Mr. Brokaw,” a federal government investigator who was documenting all complaints. The Board cautioned Association members to “be careful what they said” (*Montrose Daily Press*, 1923c: 1). The announcement of a “government spy” terminated “free expression.” There had been an “open forum” scheduled at the meeting’s end, but “none of the farmers join[ed] in the discussion” (*Montrose Daily Press*, 1923c: 1). Distrust of Reclamation officials ran deep and would take years to surmount.

Charles Moynihan

Association members sought a leader to fight its cause – one distanced from the Reclamation Service. It found him in the form of local attorney, Charles Moynihan. Moynihan made brief Association appearances in 1913 and 1915, but did not become a key player until 1923 (UVWUA, 1913c: 128; UVWUA, 1915e: 212). Moynihan took note of the Association’s disgruntled state and advised unity. Moynihan “emphasized the necessity of absolute harmony and the elimination of discontent, unrest, and petty bickering, which would, he felt, gravely retard the progress of the campaign” (*Montrose Daily Press*, 1923d: 1). Appreciating his logic, members took note of Moynihan’s broad perspective and elected him as “Campaign Head” to present their case to the Interior Secretary. He went straight to work.

In December Moynihan returned from Washington carrying a report from Secretary Work to the Fact Finders Commission. Having met directly with Moynihan, Work was moved by the grave state of the Uncompahgre Project. This report contained his intentions to “do right” by the water users. Work must also have been influenced by the Ludlow article, for a good portion of the report centered on Ludlow’s accusations (*Montrose Daily Press*, 1923e: 1).

The report first stated that Secretary Work would “deal squarely with the reclamation water users and that he expects and will demand that [they] deal squarely with him” (*Montrose Daily Press*, 1923e: 1). Specifically, Mr. Work wanted the Association to show a commitment to repayment and never request a complete abrogation of its liability. Work then proclaimed he believed the Uncompahgre settlers had been mistreated by the Reclamation Service; they had been “coerced” into altering their Article of Incorporation, that the Service only spent two days on the “geological examination” of the tunnel site, and that the total irrigated acreage was far below the promised 100,000 acres (*Montrose Daily Press*, 1923e: 1).

Moynihan was on his way to becoming a local hero. In the process of pleading the Uncompahgre case in Washington, he had secured the good favor of the Secretary. But Moynihan was not done. By the end of December, 1923, Moynihan also had assurances from U.S. Congressman Edward Taylor (the local representative and a member of House Appropriations Committee) that he would fight for the Uncompahgre people (*Montrose Daily Press*, 1923g: 1).

In January 1924, Work's Fact Finding Commission was to begin its visit to the West and Moynihan was preparing his case against the Reclamation Service. Each project's representatives were to travel to Salt Lake City and apprise the Commission of their circumstances. Many settlers hoped this would finally be a forum for direct communication with the federal government and felt no other issue was as paramount. Newspapers echoed this by saying, "This conference will be the most important ever held in the west to consider government reclamation policy, and the facts produced at that conference will have great bearing on the future reclamation policy of the government" (*Grand Junction Daily Sentinel*, 1924a: 5).

Moynihan's plan was to spread the message of the Uncompahgre plight as best he could before the committee hearing by publicly releasing his most devastating evidence against the Reclamation Service. He published a series of articles in the *Denver Post* echoing many of Ludlow's claims and blasting the Reclamation Service. In the first article, entitled "Uncompahgre Project Branded Giant Farce," Moynihan related the story of the Uncompahgre region and how water diversion became a necessity (Moynihan, 1924a: 14). He then discussed the Articles of Incorporation and how they capped per acre charges at \$25 an acre. The assurances of this amount were so strong that settlers finally agreed to put liens on their land. Moynihan noted, "It required the strongest kind of influence and pressure to get the pioneer landowners to sign up and thus mortgage their lands" (Moynihan, 1924a: 14).

Moynihan then noted that as the project's work commenced, the Service had made serious mistakes. When the federal government took over construction of the tunnel in 1905, it asked for a new set of bids from companies. They received three bids ranging from \$1,541,100 to \$2,123,300 and rejected them all. The Service's rejection of bids was confounding. According to Moynihan (1924a: 14):

The engineers of the reclamation service, and, as a matter of fact, the official hierarchy of the reclamation service, in deciding to reject these bids, did not call a meeting of the Water Users association and get its approval for rejecting the bids, or for continuing the work by the government on open force account.

In spite of the fact that the government engineers estimated the Gunnison tunnel would cost \$1,000,000, and in spite of the fact that these same engineers thereafter rejected a bid which would have insured the construction of the Gunnison tunnel for \$1,500,000, the actual cost of the tunnel to date has been \$3,038,395.52.

Moynihan's next article was more accusatory. Entitled, "U.S. Files Scathingly Indict Bureaucracy of Uncompahgre Project and Reveal Lies," Moynihan hinted at a cover-up of misdeeds by Reclamation officials (Moynihan, 1924b: 14). Secretary Work had uncovered theretofore "hidden" Reclamation documents and given copies to Moynihan. They related specifically to the \$25 an acre promise.

He told that when Reclamation officials realized the \$25 an acre promise would not suffice, and the Articles of Incorporation had to be altered, they resorted to cruel measures. A telegram from Secretary of the Interior Garfield dated November 7, 1908 to I.W. McConnel (Project Engineer on the Uncompahgre) read, "I understand that the Uncompahgre Water Users association is not disposed to make necessary amendments of articles. In view of the great

demand for funds for other projects where conditions are satisfactory, you are instructed to close down work on Uncompahgre Project if necessary amendments are not promptly made” (Moynihan, 1924b: 14).

At a special 1908 meeting, when Uncompahgre settlers heard this telegram they felt they had no choice but to alter the Articles. What they did not know was that Service officials would never have closed the project. It was simply a scare tactic. Moynihan found a letter from Director Newell, dated April 6, 1907 stating, “It is apparent that the cost will continue to increase. The amount of money invested is so large that under no conditions would it be wise to discontinue work.” Moynihan reflected, “It is sad to say the Reclamation Service ‘put one over’ on the poor farmer again” (Moynihan, 1924b: 14).

As time progressed, the number of original settlers who could claim personal assurances from officials regarding the \$25 an acre cap began to dwindle. The Service had taken advantage of this. Newcomers on the project were confused. They had “old timers” swear by the \$25 an acre promise, but the official word of Reclamation officials was that these promises never were made. Moynihan noted (Moynihan, 1924b: 14):

We new-comers found ourselves in a dilemma. From two apparently reliable sources came statements that were diametrically opposed to each other. Not until Secretary of Interior Work recently dug into the mass of correspondence and data on file in his office in Washington, were we permitted to know unequivocally the truth. The following presents a sad commentary on the weakness of human nature, the willingness of high officials to deliberately lie in order to save their faces and the most scathing indictment of Bureaucracy that has ever been exposed to the eye of the general public from its supposedly hidden and concealed source.

What Moynihan found was correspondence from high officials advising all Service employees connected with the issue *to deny* ever having made these promises (Moynihan, 1924b: 14):

“Mr. Davis is in the west and Mr. Fellows is not in this office, but Mr. Bien authorizes me to state that he will deny most positively that he ever stated to anyone on the Uncompahgre Project what he thought the estimated cost was, and certainly never made the statement that it was about \$18 or \$25. He also states that he never heard Mr. Davis or Mr. Fellows make any such statement.” – F.H. Newell, director, June 27, 1913.

There was documented evidence in the *Proceedings of the First Conference of Engineers of the Reclamation Service* that A.L. Fellows specifically guaranteed \$25 an acre (USGS, 1904: 161). Moynihan was able to cite numerous documents by other officials guaranteeing \$25 an acre to settlers, including a letter from F.H. Newell that contradicts his own previous statement. “‘I note that you have placed the total acreage cost at about \$25 per acre and that the total cost will be nearly \$2,500,000. This is the amount which I have given in my estimate to the secretary.’ – F.H. Newell to Arthur P. Davis, May 18, 1904” (Moynihan, 1924b: 14).

Moynihan's last article, entitled, "Uncompahgre Project Farce is Forcing Ruin among Farmers," discussed more evidence of Reclamation cover-ups – one which involved the proposed creation of a reservoir on the project (Moynihan, 1924c: 8):

A.P. Davis, former director, definitely, by letter and by testimony before congressional committees, included the construction of the so-called "Taylor Park" reservoir as a work necessary to be done by the Reclamation Service to supply the water needed for the irrigation of lands under the Uncompahgre Project. The construction of this water [project] was included in the \$2,500,000 estimate by Reclamation engineers. Mr. Davis afterward denied that there was any promise or expectation that a reservoir was to be built by the Reclamation Service. This in face of the fact that the United States government, thru the Reclamation Service, filed, or caused to be filed, an application in the local land office for the land comprising Taylor park as a reservoir site.

Moynihan had no qualms painting a picture of Reclamation Service officials as morally deficient thugs. At one point he asked, "Is it any wonder the Bureaucrats with a Jesuistic adroitness that would challenge a Machiavelli, confide in each other secret situations...[?]" (Moynihan, 1924c: 8). Moynihan countered this image with that of the hard-working settler, whose trust in the federal government had led to destitution (Moynihan, 1924c: 8):

They have raised tremendous crops. They have been the victims of the economic depression in agriculture thruout the country. In their present plight, to impose upon them an additional overhead will ultimately result in making disgruntled citizens of them, and for this they cannot be blamed. For once they can hold an agency of the United States government culpably liable for the distressful condition in which they now find themselves.

Though Moynihan concluded his article with an appeal for aid via reevaluation of construction charges, he also ended with an overreaching vote of approval for Secretary Work. He said, "Secretary Work, to date, has proved to the farmers of the west to be the single greatest benefactor that ever occupied a cabinet position in Washington." He advocated transferring authority from Congress back to the Secretary, so that aid could come faster to the project, for unless aid came fast, "one of Colorado's substantial assets [would] be lost to her" (Moynihan, 1924c: 8).

Fact Finders Investigation

Charles Moynihan's indictment of the Reclamation Service incited Uncompahgre settlers as never before. Suddenly, everyone seemed to have stories of Reclamation mistreatment. A local newspaper reported A.P. Davis had verbally attacked early resident F.D. Catlin in an address to the appropriations sub-committee because Catlin never wavered in his insistence at the \$25 an acre promise. Davis' attempt to discredit Catlin's reputation resulted in nearly all early residents coming to Catlin's defense (*Montrose Daily Press*, 1924b: 1).

Others reported that Davis had in the past threatened to shut off the tunnel water and the Montrose and Delta Canal. This was to "punish certain water users who were alleged to have

interfered with the head gates, and the unreasonable plan of shutting off all water users was adopted to correct irregularities by less than 5 per cent of the farmers.” Davis had also been unfair with canal owners when trying to unify the system. Settlers claimed “Mr. Davis and his organization [had tried] to absorb the vested water rights without fair compensation...” (*Montrose Daily Press*, 1924b: 3).

Attacks against Reclamation’s operation and maintenance of the system also surfaced. Uncompahgre crops suffered tremendously from the continuation and spread of seeped farm land. Nothing had been done to alleviate the water logging and drainage was still left to financially-strapped individuals. The following letter to Project Manager L.J. Foster reveals the desperate condition of drainage (reproduced as written; UVWUA, 1923b):

Delta, Colorado, May 19 – 1923

Mr. L.J. Foster
Montrose, Colo.

Dear Mr. Foster:

I am going to ask you if there is not some way you can help me with the water proposition in our county. The ditches are running so full they cannot carry the water and there is more water running to waste than the farmer can use – In the Peach Valley country it is washing out our culrests and bridges, on Cal. Mesa the culizsts will not carry the water that goes thru with a sual. If we hear to replace all these culists with larger ones it will cost us thousands of dollars and I don’t believe it is necessary. On Garnet Mesa some of our roads are impassible – caused from overflow of Gov’t ditches. It is almost impossible and prohibitus to keep them in repair. If you can do anything to help relieve the situation it will certainly be appreciated.

Thanking you for any co-operation in the matter I am

Very Respy Yours
J.E. Beckley

There were also problems with delivering water appropriately from ditch heads to tails. The Project Manager had reported that in the past, to ensure irrigators at the tail end of the system received adequate water, the system’s water flow had been run continuously. Those receiving too much water nearer the head of the system had “suffered materially” (*Montrose Daily Press*, 1924c: 6). In addition, not all water could be delivered to those who needed it at crucial times. This was mainly because too many farmers with similar crops all wanted water at the same time.

These long standing issues resurfaced at the Fact Finders Hearings. Composed of John A. Widtsoe (irrigation studies professor at what is now Utah State University), Thomas E. Campbell (former governor of Arizona), Julius Barnes (National Chamber of Commerce president), Julius E. Bradfute (American Farm Bureau president), James R. Garfield (former Secretary of the Interior), and Elwood Mead (a well-known and respected irrigation expert), the

Fact Finders Commission first met on October 15, 1923 (Rowley, 2006: 222-223). Their official task was to “study new directions for Reclamation,” but they essentially served as judges for a trial against Reclamation (*Grand Junction Daily Sentinel*, 1924b: 1; Rowley, 2006: 222).

On January 18, 1924, with the meeting room filled beyond capacity, the Commission (minus Barnes and Bradfute) met in Salt Lake City to hear accounts from Reclamation settlers. Almost all Reclamation projects were represented with many Reclamation officials present as well. The first hearing began with the Minidoka Project in Idaho whose representatives explained how their project was “hopelessly bankrupt.” Though their plight was pitiful, the Minidoka representatives were weary of blaming the Reclamation Service. They even “endorsed” the federal government, “expressing their complete satisfaction” with the Service (*Grand Junction Daily Sentinel*, 1924b: 1).

This was not the case with the Uncompahgre. On the January 21, Charles Moynihan, F.D. Catlin, and a number of other UFWUA members appeared before the Fact Finders Commission with rhetorical guns ablaze. They stated unequivocally that the Reclamation Service was responsible for their present woes, due to the agency’s mistakes with construction estimates, and they demanded the federal government reassess the project’s construction charges to reflect original estimates. Unless the charges were altered to original amounts, the Uncompahgre settlers would demand the U.S. federal government take back its project. Settlers wanted no abrogation of debt and wanted no extension of repayment. They desired that the federal government hold to its original promises.

Judge F.D. Catlin, who had previously been attacked for his unwavering insistence of the \$25 an acre promise, had a chance to retaliate against his opponents (*Montrose Daily Press*, 1924d: 1):

F.D. Catlin, who for many years has been fighting for a settlement on the basis of the original estimate, made a forceful indictment of the agencies responsible for the costly errors in the project construction and stated no compromise would be countenanced and that the only panacea for the project was settlement on the basis of twenty-five dollars per acre, maximum.

He told the *Denver Post* that “he did not really criticize the employees of the service” for they were “mere puppets who had to jump when the higher-ups in Washington called” (*Denver Post*, 1924: 12).

Catlin’s claims may have greatly embarrassed one Fact Finding member – James R. Garfield. As the Secretary of the Interior under Theodore Roosevelt, Garfield, according to Moynihan’s articles, had instructed all Reclamation personnel to deny the \$25 an acre promise. Now with Catlin’s allegations, Garfield would have had to account for his actions with the other Fact Finders members. It is unknown whether his former acquaintance with the Uncompahgre ordeal influenced the Fact Finding report.

Back home, Uncompahgre settlers applauded their representatives – especially Moynihan, naming him “Montrose County’s favorite son and popular citizen,” (*Montrose Daily*

Press, 1924g: 1). The stockholders were so impressed with Moynihan that they voted unanimously to turn their entire case over to him. He offered to take control of the situation at no charge, unless an adequate resolution with the federal government was reached. He reported that the Fact Finders Commission would make a report and submit it to Congress. Congress would assess the report and vote on relief measures. A decision of their fate would likely be reached before the next Congress adjourned in September. He had great faith that Congress would allow Secretary Work to provide all needed assistance (*Montrose Daily Press*, 1924e: 1, 3). He also stressed the importance of maintaining group cohesiveness (UVWUA, 1924).

After having heard accounts of misery from nearly every project, the Fact Finders signaled that the Reclamation Service needed change. They noted, “the human side of reclamation [had] assumed greater importance than engineering” (*Montrose Daily Press*, 1924f: 1). They realized the umbrella rules enforced by the Service were greatly inefficient, because each project’s conditions were unique. Therefore, each project should be evaluated in its own setting and then be given relief.

In March, Uncompahgre settlers received the news that the Fact Finders supported their case. The local paper read, “A conference of senators from the reclamation states were yesterday assured that the Interior Department’s fact-finding commission will recommend the writing off of all construction charges against the water users on the government projects which exceed those under which they made their original contract” (*Montrose Daily Press*, 1924h: 1). There was even discussion of some operation and maintenance charges being “wiped out” completely in some cases (*Montrose Daily Press*, 1924i: 1).

As this news reached settlers, people openly expressed joy (*Montrose Daily Press*, 1924i: 1):

When the news was printed in The Daily Press on Saturday the telephones were made exceedingly busy carrying the glad news to all parts of the valley to the farmers and little knots of people could be seen everywhere on the streets earnestly discussing the question, and a general air of optimism was quickly replacing the depression that has been felt for the past several years....

The official Fact Finders Report was issued on April 3, 1924 with sixty-six recommendations (Rowley, 2006: 225-226). Among the most significant were (Pisani, 1989: 140):

1. Before construction could begin on new projects, land should be classified and per acre assessments be derived from the land’s productive capabilities rather than the strict construction amounts. Repayment periods should be extended up to 40 years.
2. Reclamation should take a more active part in guaranteeing the success of new farmers. First, the amount of capital a farmer needed to begin on a new project should be evaluated. Then potential farmers should undergo a screening process to ensure they had the necessary initial capital, essential farm know-how, and drive to succeed. Finally, an agricultural expert should be placed on each project to teach new growers proper techniques.

3. Reclamation should have control of private lands to reduce speculation.
4. Before new project approval, a study of the area's markets should take place.
5. The federal government should create a farm loan program to allow new farmers to purchase equipment, build houses, etc.

The Fact Finders also recommended that all delinquent charges on current projects be transferred to each project's total construction debt to alleviate mounting interest charges. Water user groups should have one year with no operation and maintenance charges to get their finances in order and farmers with non-productive lands should be given the option of trading up for better land tracts (*Montrose Daily Press*, 1924j: 1).

However, as additional specifics became known, settler excitement diminished. In a telegram from Congressman Edward Taylor to F.D. Catlin, settlers learned that their request for a strict \$25 an acre maximum had been denied. Instead, the report recommended the \$70 an acre maximum. Taylor reported, "[The Fact Finders] recommend for Uncompahgre Project a reclassification and say that probable loss to the government of \$1,500,000, but they specifically say that your claim that charges be established at \$25 per acre is unjustifiable by the records. While this is unsatisfactory, yet many of the general recommendations are good" (*Montrose Daily Press*, 1924k: 1).

Settlers were aghast. The *Montrose Daily Press* reported, "The partial report of the Fact Finding Commission regarding the irrigation projects, seemingly adverse to the Uncompahgre Project, threw our people generally into a panic Friday." Association Board member Judge John C. Bell pointed out the Fact Finders Report was merely a recommendation. He felt settlers should "continue to fight until justice [was] done, regardless of anybody's recommendation" (*Montrose Daily Press*, 1924k: 1). The local press attempted to mollify settlers (*Montrose Daily Press*, 1924k: 1):

We have the land, with the greatest fertility; the water right, the best to be had; the climate, all that could be asked; and a productiveness of soil, exceeded by none. Something good is going to come out of the report. Congress is yet to act. Complete justice will prevail for our people in the end. It is no time now to get discouraged. Now is the time to look to the East. Now is the time to be hopeful. The day for brighter things is just ahead. The Uncompahgre Valley is yet the best place for a home in the world.

Charles Moynihan offered his words of comfort, pointing out that, if nothing else, the Fact Finders' recommendations would essentially remove Reclamation's greatest foe from its organization. A.P. Davis, who had been relegated by Secretary Work to a consulting position, would soon be gone for good. Moynihan stated, "The elimination of A.P. Davis as a factor in Reclamation was worth all the work and effort the Fact Finding commission expended" (Moynihan, 1924d: 1).

On December 5, 1924, Congress acted on the Fact Finders' recommendations. With "slight modifications," Congress supported most suggestions (*New Reclamation Era*, 1925b: 49). Under the new Reclamation Act of 1924, the Secretary of the Interior now had the authority to write off erroneous construction charges and as well as some administrative costs for which

projects had been responsible (Pisani, 1989: 141). Construction repayment would be based on land productivity – annual charges would be 5% of the area's gross income. The Reclamation Service could now screen potential settlers on projects and must conduct numerous studies of an area before a new project could be authorized. Congress did not approve farm loans or educational programs (Rowley, 2006: 226).

In the Uncompahgre Valley, the Service faced the challenge of restoring its legitimacy. Given that Congress and the Fact Finders had officially denied the \$25 an acre demand, it is no wonder the federal government attempted to generate optimism. With the wind knocked out of them, depressed settlers awaited their fate as a newly authorized Board of Survey and Adjustments began studying their project. Its mission was to conduct detailed surveys of current projects in order to reassess each project's liability (*New Reclamation Record*, 1925a: 33-34).

Despair Returns

During the height of conflict in 1924, Secretary Work made a decision that would drastically alter the Reclamation Service. He appointed Dr. Elwood Mead as Reclamation's Commissioner. As a respected irrigation expert (he had advised on systems in Australia and the Middle East, was a Colorado Agricultural College professor, and an author), Mead's appointment was a relief for many Davis-and-Newell-weary settlers. Mead was a "salt-of-the-earth" type from the Midwest who had acquired much irrigation knowledge in Colorado and Wyoming. He was a great supporter of farmers and felt strongly that Reclamation should help the small farmer as best it could. He prized both local knowledge and scientific knowledge, having studied extensively both in the classroom and the "field" (Rowley, 2006: 233-235).

Right from Reclamation's birth, Mead had recommended organizational alterations for the Service and now he could finally attempt to put his ideas to into effect. Together with Secretary Work, Mead tried to create a new Service and drastically alter its image. According to Secretary Work, "...Dr. Mead is the keystone to the new policy of Federal reclamation" (*New Reclamation Era*, 1925b: 49). More than anyone before him, Mead saw the benefits of substituting rural sociology and economics for Reclamation's technological over-dependence. His irrigation experiences across the globe showed him that creating a successful irrigation project meant creating a successful irrigation community (Rowley, 2006: 225, 234).

One of his greatest organizational contributions was his desire to provide local irrigation organizations greater autonomy. He recommended all finished projects be turned over to their water user organizations for operation and maintenance (O&M) as soon as possible. Removing Reclamation from the O&M equation would relieve the federal government of its burden of collecting these assessments and reduce criticisms of slow or inadequate action when problems arose. Greater local control of projects would allow the settlers themselves to establish their own O&M assessments as well as allow emergencies on the system to be addressed faster. The federal government would still own project structures and the project title, but would serve mainly as an inspector of safety compliance (Rowley, 2006: 257).

Mead's goals for Reclamation included incorporating a "type six" land classification where permanently unproductive land would forever be except from payments. He also

advocated low interest farm loans, some extensions in repayment of construction charges, and cooperation between agricultural buyers and sellers (Rowley, 2006: 259). Organizationally, his largest ambition was regionalizing the Bureau of Reclamation. Most of Mead's goals (such as the type six classification) did not come to fruition during his lifetime, but Mead did succeed in getting people to start thinking differently about Reclamation.

Mead had specific intentions for the Uncompahgre people. He said, "On the Uncompahgre Project there are thousands of acres that are not being cultivated and never will be. The cost of the canals to cover these areas should be written off" (*New Reclamation Era*, 1925c: 89). But good intentions did nothing to diminish settler unease. Settlers had received many such assurances in the past and knew federal government promises meant nothing. The Bureau of Reclamation would have to prove its intentions with significant action and action in the large bureaucracy was slow to materialize.

Even as Mead professed his desires for local aid, settler moods were hardened as they waited for the Board of Survey and Adjustments to complete its reassessment of the project in 1925. Officers of the UVWUA attempted to curb feelings of anger and lessen the valley's image of being disagreeable. They said there was hope with Congress' December 1924 announcement because *some* relief was likely to come. Additionally, local men were assisting the federal government's reassessment and could convey the project's conditions to listening ears. At the 1925 stockholder meeting, all those who spoke advocated cooperating with the federal government – especially in the reassessment effort. Cooperation was now their only hope of relief. Even Colorado Governor Campbell advised, "We must all unite on all matters presented" and lay all cards on the table to be open and honest (UVWUA, 1925: 249).

In January 1926, the Board of Survey and Adjustments published its recommendations for the Uncompahgre Valley. It suggested assessments be fixed at \$51.98 per acre. It also advised that 24,918 acres of unproductive land should be written off the project. This would reduce the total liability by \$1,295,237, which the federal government should consider a "definitive loss" (*Montrose Daily Press*, 1926: 1). The \$51.98 per acre charge was based on the total liability of \$6,693,199 divided by a total productive acreage of 129,770.

The Board took note of the valley's dark mood. It expressed sympathy for the settlers, and suggested swift action to improve spirits. The Board reported, "On several of the projects real or fancied errors in the fixing of acre costs cause[d] distrust and dissension. An early settlement of all matters will hasten the development of good feeling[s] and constructive efforts on the projects" (*Montrose Daily Press*, 1926: 5). Work complied and quickly submitted the recommendations to the U.S. House of Representatives.

Uncompahgre settlers anxiously awaited Congress' verdict, but that wait seemed interminable. The line of decision-making in the current Bureau organization made delays inevitable. "Emergency" aid was taking years. The experience on the Uncompahgre had so far been:

1. A 1923 plea for financial assistance from the UVWUA as settlers were asked to pay \$70 an acre that year.

2. Secretary Hubert Work's creation of the Fact Finders Commission in 1923 and the UVWUA's hearing in 1924.
3. The Fact Finder's report submitted later that year and the decision by Congress in December to allow the Bureau to reassess construction charges.
4. Work's creation of the Board of Survey and Adjustments and its investigation during 1925.
5. The Board's recommendations.
6. Work's submittal of the Board's recommendation to Congress in December 1925.
7. Congress' decision on aid to projects in 1926.

What did a bureaucratic process mean when crops suffered from seepage, all money went to high interest loans, and homes were in danger of foreclosure if impossible assessments went unpaid? At the 1926 UVWUA stockholder meeting, member frustration was evident. The Board of Directors advised members to "proceed cautiously [and] await calmly the verdict you will get from Congress" (UVWUA, 1926: 2).

A good portion of Uncompahgre settler unease came from confusion over important details. Effective linkage with federal governmental decision-makers was lacking. Members of the UVWUA could not get their questions answered. No one yet knew the specifics on his/her own liability, for the Board of Survey and Adjustments had merely provided a recommendation. Settlers could not adequately budget the year's expenses. C.J. Moynihan had explained to Commissioner Mead, "the people here want to know how much they will be expected to pay per acre, the terms, etc., etc., and that until this information is at hand, there will be a more or less chaotic condition" (*Montrose Daily Press*, 1926: 5). These sentiments were echoed at the 1926 stockholder meeting. Members passed a resolution: "[The Association should] be informed without delay the exact amount of their annual construction costs repayment. It is furthermore the sense of this meeting that until information is obtained the lack of morale which has existed on this Project for several years... will continue" (UVWUA, 1926: 2). Frustration turned to outrage during the course of the meeting. When the Board of Directors offered a resolution to "employ counsel" in the form of C.J. Moynihan and pay him \$565, many members became irate (UVWUA, 1926: 4). Moynihan's fee would be the greatest single expense that year. This was a peculiar amount for someone who declared he would work for free until an adequate agreement between the water users and the federal government was reached (most felt they were far from a proper agreement).

Moynihan rose to defend his position. He admonished, "It is time to quit personalities and get down to the fundamental things" (UVWUA, 1926: 4). He assured his employment was quite "regular" as those on the North Platte were also hiring him. Moynihan's request was supported by others. One Board member "pleaded for the resolution to allow the Board to employ counsel" because they had been at a disadvantage for many years without it. Reluctantly, members passed the resolution.

The next year's meeting was a bit more harmonious. On May 25, 1926, Congress had authorized the Bureau of Reclamation to enter into a new contract with the UVWUA based on Work's recommendations. The Board of Directors began the 1927 meeting by praising Moynihan's "wise counsel" (likely defending their previous insistence on his employment) and

felt “their cause [had] been fully represented” (UUVWUA, 1927a: 6-7). It then explained to members what the new contract with the federal government would entail. The 1927 contract involved many significant changes (UUVWUA, 1927b: 12-16):

1. The total “net construction cost,” as of Dec. 31, 1926, was set at \$6,699,485.55.
2. The total project acreage was set at 128,770, with 25,357 permanently unproductive acres and 27,629 temporarily unproductive acres, leaving the total productive acreage at 75,784.
3. In regard to assessments, the Association would be responsible for all construction charges on productive land and would pay over a thirty-five year period (soon after this, it was extended to forty years). The Association would also be required to pay penalties on all delinquent payments up to Dec. 31, 1926, with interest at six percent per annum. If formerly unproductive land were to become productive, the land owner would pay \$52 an acre on construction charges.
4. The transfer of the project to the UUVWUA for general operation and maintenance would take place on January 1, 1932. The transfer of operation and maintenance on the Gunnison Tunnel and various canals would take place on or before January 1, 1937. All property titles were to remain with the federal government.
5. The Association would be required to pay O&M charges to the Bureau on the tunnel and remaining federal government-run canals until they were turned over to the Association.
6. No major changes to the project could take place without the “written consent of the Secretary” of the Interior. Additionally, if the Secretary were to see any part of the system as “unfit for service,” he could turn off project water until the problems were fixed.
7. Until the project was paid off, the Association would have to hire a competent project Manager and Treasurer. These two candidates would have to be approved by the Secretary. Except for these two positions, the Association could hire whomever it desired.
8. The Association could not enter into any contract regarding the project without the approval of the Secretary.
9. In regard to drainage and other improvements (such as lining the tunnel with concrete), land owners of prosperous as well as seeped lands would be required to repay the federal government for the amounts expended (the Association dictated the drainage not exceed \$500,000 and the tunnel not exceed \$400,000).
10. The responsibilities of the Association included remaining the fiscal agent of the U.S. federal government by collecting repayment fees, maintaining proper repayment accounting books, keeping accurate crop numbers, recording water supply amounts, and recording and reporting anything else the Secretary deemed necessary.
11. The Secretary would make or have made periodic inspections to ensure the Association was complying with contract provisions, and the Association would be responsible for inspection expenses.
12. Liability to the federal government would be *non-personal*, meaning “no landowner shall be liable beyond the loss of the land owned by him....” The Association would be given the authority to enforce liens.

13. Finally, the payments to the federal government would supercede all other Association payments.

The new contract provided some relief by stipulating liability and “non-personal” and by wiping off construction charges on unproductive land, the \$52 an acre fee was far in excess of the \$25 an acre settler demand asserted in 1924. Additionally, settlers would be responsible for delinquent fees from years past. Costs were still too high. Project control remained invested in the Interior Secretary. No changes to the system could be made without his consent.

With the \$52 an acre to be paid over a forty year period, the UVWUA had one of the most generous repayment plans of all the Reclamation projects. On October 2, 1927, the *Denver Post* reported the conflict was now over. “The long-standing controversy between the water users of the Uncompahgre Project ended Saturday when a largely attended meeting...voted unanimously to negotiate a new contract with the government...This contract gives perfect water right at the lowest cost of any project in the west and puts new heart into the farmers of the Uncompahgre region” (*Denver Post*, 1927: 2).

The Relationship Reaches Its Nadir: 1930-1932

To outsiders, the UVWUA’s new contract with the federal government signified the end of conflict. To Uncompahgre settlers, the contract meant little as it soon became clear that not even “the perfect water right at the lowest cost” could save them from destitution. As was the case before, slow bureaucratic processes demoralized settlers as they waited for promises to be implemented. Many of the 1927 contract’s aspects had yet to be approved by Congress. Additionally, Reclamation alterations in personnel and organization left Uncompahgre settlers waiting for Bureau attention. During the wait, pervasive project troubles worsened and new dilemmas emerged.

The drainage issue was still unresolved. In 1929, the aggravated Association noted that even though drainage had been guaranteed in the new contract, “there [had] been no improvement to this situation over a number of years;” seeped lands were still unable to produce (UVWUA, 1929: 28). The following correspondence illustrates the frustration (reproduced as written; UVWUA, 1930b):

May the 7th 1930.

Mr. Taler, Our Congressman.

Dear Sir:

I have been thinking I would rit you for some time in regard to my ranch going to seep I had 1 of the best ranches in the valley and I had 2 fee of water and the government men com and wanted me to sine up for the tunnel to Buport there so they could get water an som mor land and I sined up then they put 2 ditches on 2 shale riges up above both of my east 40 and that seeped my land til I couldent rase anything but seep weeds so I spent \$24 putting in tiling and dident doo eny good so I want you to see if you can get the rit

authority to do something to help me I think the government out to pay me what I paid for dreaning I am going to leave it to you to present this leter to the proper one.

C.E. Suttle

Lack of drainage was materially damaging the entire project. The Association reported that land was being lost to production at a rate of 2,000 acres per year. As each acre became unproductive, the ability to collect its assessments disappeared. In 1930, the Association calculated that lack of drainage was causing a \$100,000 revenue loss to pay to construction charges each year (UVWUA, 1930a: 30).

A second long-enduring project problem was the lack of proper credit. The removal of “blanket mortgages” in the 1927 contract proved useless. Settlers were still suffering from their neighbor’s delinquencies due to a “joint liability” clause passed by Congress. The clause made “all lands [in a project] liable to the federal government for all charges that may become delinquent” (Hayes, 1930: 8). Essentially, a farmer who was up-to-date on assessments could not secure a personal loan because the entire Association was delinquent in payments to the federal government.

According to Charles Moynihan, the joint liability issue was the “cause of more complaint among farmers than any other single thing.” Good, hardworking people were suffering. To illustrate his point, Moynihan recounted the story of an unfortunate Uncompahgre settler “whose lands [were] clear of government charges to date and fully paid for as to title...[who] wanted \$600 for hospital and medical services for his wife and was unable to borrow a dollar from any source” (Hayes, 1930: 8).

Also during the early 1930’s, the Uncompahgre Project was suffering from a new problem: speculation. Though speculators had been on the project from its early years, the difficulties of the 1920’s had forced many settlers to abandon their farms, leaving large tracts of cheap land available for the individual profit-seeker. Speculators would then sell the land for what settler viewed as inflated profits. What infuriated project settlers most was that speculators were not using the land and were thereby exempt from contributing to assessments. While speculators held out for high profits, formerly productive acres went untilled. By reducing the total number of productive project acres the remaining members’ assessments grew. The poor physical conditions, joint liability clause, and increase of speculation all combined to make the project a continued problem for angry irrigators.

The Great Depression added damage to valley farmers. In 1929 crop revenues were so low that the Association worried even normally well-off farmers would not be able to meet current assessment charges (UVWUA, 1930a: 46). The economic slump further reduced prices for agricultural commodities (*Denver Post*, 1930a: 19). Additionally, the Association felt the Bureau was reporting inflated crop amounts – a large problem for the Association because each year’s construction payment was partially based on the valley’s productiveness. The Association reported, “The reports showing the crop returns of this valley have been greatly misunderstood and misleading and have mitigated against the water users in their efforts to secure relief from

the payment of the water charges” (UVWUA, 1930a: 46). Members resolved that the Association should peruse crop reports *before* the Bureau acted on them.

By 1930, the Association was nearly 50% delinquent on its construction payments (*Denver Post*, 1929: 13). The late penalties on construction and O&M were proving disastrous for settlers. By law, the Bureau could shut off the project’s water because of the Association’s delinquencies; many farmers did not know if they could even water their crops that year. The financial burdens of Uncompahgre farmers were so great that the UVWUA resolved to cancel all current plans for increased liability. Specifically, the Association told Commissioner Elwood Mead that they opposed drainage construction by the federal government even though seepage problems were worsening (UVWUA, 1930a: 47).

Given the intensifying problems, Charles Moynihan once again interceded on the Association’s behalf. He advocated another reassessment of the project by the federal government and proposed a meeting of key officials to discuss the matter (Chapin, 1930: 4). The plan had the backing of various politicians as well as Commissioner Mead. Through Moynihan’s action and Mead’s goodwill, the UVWUA was able to secure its own conference in Denver to discuss the desperate project conditions. A “joint state and federal conference” was scheduled for February 25, 1930 at the state capital. Financial representatives, railroad representatives, local officials, state officials, Reclamation agents, and even Elwood Mead himself attended the conference (Hayes, 1930: 8).

Mead opened the meeting by announcing his desire for cooperation on all fronts in order to secure a “final settlement” on the Uncompahgre Project. Moynihan then spoke of the Association’s desire for cooperation and laid out the organization’s viewpoint. It did not want construction charges to be wiped out; it wanted a “relinquishment of the delinquent charges” and “a rescinding of the ‘joint liability’ clause in the law by which the government really takes a lien on all the acreage and makes the prosperous farmer responsible for failures” (Hayes, 1930: 8).

Moynihan then proposed that a board (similar to the Fact Finders) be created to examine the project. He felt it should consist of Charles A. Lory (president of the Colorado Agricultural College), the president of Denver National bank, the president of the Denver and Rio Grand railroad, and at least one UVWUA leader (UVWUA, 1930a: 45). Moynihan felt that, “Unless a plan of refinancing is devised, farmers on 40,000 of the 67,000 acres of land included in the project will lose their land” (Chapin, 1930: 4).

Moynihan’s proposal was supported. Those present unanimously agreed to a reevaluation of the project by the investigators Moynihan desired. They also agreed that temporary relief was imperative. They declared water would be provided to the valley regardless of current delinquencies. The Secretary of the Interior would decide on a satisfactory amount and due date for 1930 assessments (*Denver Post*, 1930b: 4).

After the meeting, Elwood Mead appeared before the U.S. House’s Committee on Irrigation of Arid Lands in order gain official authorization for the proposed changes to the project. The Uncompahgre Project, he declared, was financially one of the worst projects in the West and needed immediate assistance (*Hearings*, 1930: 11-12). Mead had to prove this claim.

On the surface, the committee saw no reason to extend aid. The chairman said, “In view of the small cost, and the small operation and expense, the fertility of the soil, it is rather difficult to understand why they can not pay, when it is remembered that people on other projects are paying where the cost is twice as much, and where the operation is twice as much” (*Hearings*, 1930: 7). Mead countered that speculation and high interest personal debt made the Uncompahgre’s case significantly different.

Mead’s request to Congress was quickly approved – less than a month after the Denver conference (*Denver Post*, 1930c: 1). By April, President Hoover had approved the “emergency aid” and Uncompahgre settlers were at last recipients of that assistance (*Denver Post*, 1930d: 4). For a time, Uncompahgre settlers were able to focus on watering crops without the fear of water shut-downs. They could work to pay off their local debts (*Denver Post*, 1930e: 14).

However, the new “fact-finding” Board – pushed by Moynihan and adopted by Mead – was far from helpful in the view of settlers. Its major suggestion was that the federal government should transfer its operation and maintenance (O&M) of the project to the Association as soon as possible. The 1927 contract had already dictated the eventual transfer, but not for years to come. Additionally, many things had changed since 1927 – such as the economic depression and the continued state of burdensome personal debts. The Association needed time to prepare itself for the transfer. Settlers said they “could not understand the recommendation that the project be turned over to them, in view of the fact that they do not have sufficient funds to pay even the salaries of ditch riders for one month and lack banking credit or other resources” (*Denver Post*, 1930f: 7).

Another Commission recommendation was that the Association should hire an agricultural expert. Members “attacked the proposal to name a high-salaried adviser to ‘show them how to grow two blades of grass where but one grew before when we cannot even dispose of the one blade’” (*Denver Post*, 1930f: 7). Having an outsider come to “improve” local farming techniques had the potential to cause resentment and anger. As testament to the poor relations between the Association and the Bureau is the fact that in 1915 an agricultural agent aided Uncompahgre settlers and was much appreciated; yet after years of distrust, the idea of “outsider” meddling had become highly insulting (UVWUA, 1921: 233).

Glaringly absent from the Commission’s recommendations was any mention of removing the joint liability statute. The blanket mortgages and failure to secure proper credit were handicapping every person on the project. To settlers, the disregard of such an imperative issue was unfathomable.

To Association members, it was clear the Commission was composed of members too far distant from the situation. These cosmopolitans had been “biased” and were so unacquainted with the valley that their recommendations made no sense (*Denver Post*, 1930f: 7). The recommendation of a farming expert, in particular, was viewed as the epitome of cosmopolitan arrogance.

And what of the “local” Association leaders on the Commission? William P. Dale, the president of the UVWUA, and George W. Bruce, a Delta county judge, had both been members

of the investigative committee. In signing and supporting the fact-finding recommendations, the two “local” men’s actions amounted to betrayal. Inner turmoil in the Association raged as UUVWUA members “shouted from the floor” of a special meeting, demanding President Dale’s resignation (*Denver Post*, 1930g: 42).

The bureaucratic agenda continued to penetrate the Association. Though members voted for Association representatives, the Bureau and its cosmopolitan leaders had ultimate control. Local leaders were left with the conflicting duties of catering to member needs while enforcing the federal government’s agenda.

Communication Catastrophes

In 1931, the Association was scheduled to renew construction payments to the Bureau and members were uncertain how much they would have to pay for construction charges. In the 1930’s the Bureau of Reclamation entered its most renowned historical period. The world marveled at its engineering prowess on the Hoover Dam initiative. Meanwhile, the new Bureau seemed to have little interest in ensuring farmers on existing projects understood the technicalities of new assessment arrangements.

Disinterested Washington bureaucrats were relegated to the position of “farmer communicator” and the UUVWUA soon felt the effects. At the 1931 meeting, the Association noted no one – not even Board members – could adequately understand the terms of the year’s construction payments. Members resolved to request the Bureau simplify water payment notices “so that [they could] be understood at least by those who study it carefully” (UUVWUA, 1931a: 57).

In August 1931, lack of proper communication precipitated another in a long series of crises. Seemingly out of nowhere, the Bureau created an amended contract with the UUVWUA without consulting the Association. The directive came from the Assistant to the Interior Secretary – a man who had little information and concern about the Uncompahgre situation. He threatened to turn off the project’s water on August 15th unless the Association signed the new contract (UUVWUA, 1931c: 62). Members panicked. If water were shut off, irreparable damage would occur. The valley would die as marketable crops disappeared. The relationship with the Bureau would disintegrate and the Association would lose all standing before Congress. The UUVWUA felt, “the acceptance of the challenge recklessly issued by the Reclamation Bureau would result in chaos and confusion” (UUVWUA, 1931b: 63).

The new contract dictated the Association takeover the *entire* project on January 1, 1932. There would be no easing into the O&M challenges as the 1927 contract had permitted. The new contract also seemed to counteract the 1930 emergency legislation. It said, “All construction and operation and maintenance charges...were due... on December 31, 1930” (UUVWUA, 1931c: 66). If charges went consistently unpaid, the Association must foreclose on the land (UUVWUA, 1931c: 65-68).

To members, the directive amounted to raw coercion. The threat was “without authority in law, illegal and [could] not be enforced” (UUVWUA, 1931c: 63). Additionally, they felt their

“friends” had turned on them. Was it not just a year previous that Commissioner Mead had defended the Uncompahgre case to Congress? Where was their great advocate now? He was likely too busy overseeing the construction of Hoover Dam. The new Secretary of the Interior, Ray Wilbur, had been a respected ally, but was now visibly absent in negotiations. The lack of direct contact with Reclamation administrators weighed heavily on Association spirits. Members noted, “No opportunity for a private conference with Reclamation officials has been permitted the members of this Association” (UVWUA, 1931c: 62). Of Secretary Wilbur especially, the members lamented. They resolved (UVWUA, 1931c: 63):

[We] express to Secretary of the Interior, Wilbur, our sincere appreciation of his courtesy and consideration at all times to us and our representatives. Our regret is hereby expressed at his inability to consider in detail our various requests. Had he been able to do so, instead of being compelled to have a subordinate act for him, we are confident every difference could have been ironed out without any feeling of resentment whatsoever, and that every refusal of his to accede to our requests would have been accepted by us as a decision based upon an honest effort to do justice between the Government and this Association.

The UUVWUA felt it had no choice but to approve the new contract under protest.

Chapter 6 – Organizational Change, Time Period 2, 1932-1949

The first two years of the 1930's were a time of "great depression" for the Association – not just economically, but also in terms of organizational degradation. It had been bullied into operating and maintaining a problematic irrigation system. It had been abandoned by its former Reclamation allies. The relationship between the Association and the Bureau was at its nadir.

Yet, the cloud of the nation's economic distress, ironically, produced a silver lining. Through President Franklin D. Roosevelt's New Deal measures, the Uncompahgre and other Reclamation projects were given new life. The federal government created the Public Works Administration (PWA) to help rehabilitate the nation's economy. Utilizing the large unemployed population, the PWA spent large sums on improving local resources, such as roads, schools, and irrigation systems. The PWA appropriated \$103 million for Reclamation endeavors (Rowley, 2006: 309- 312). This represented a huge supplement to the Bureau's dwindling Reclamation fund.

In 1932, the UVWUA assumed responsibility for operation and maintenance (O&M) of the Project. The Association was granted the authority, along with the autonomy, as project sponsor to fulfill all O&M requirements. Though a great deal of work had to be done, including restructuring O&M assessments, Association members seemed pleased to finally have official control of their project (UVWUA, 1932: 75). The system may have been in poor shape and the Association may have been forced into the takeover earlier than it had planned, but at least members could run the system their way.

Organizationally, the Association made only one change – it altered the Project Manager position. The tasks of the Association's "Manager" and the Bureau's "Project Superintendent" were now combined into one position. The new "Project Manager" supervised all Association staff as well as managed operation and maintenance. Most importantly, the Manager was now strictly an *Association* employee. Former Project Managers may have been local men, but still had to report to the Bureau. The new position resolved problems of conflicting loyalties. The Manager would now only report to the Association's Board.

There was a lot of work to do. The Gunnison Tunnel was in desperate need of rehabilitation; specifically it needed lining. The ever-present drainage problem took on greater importance as more and more productive tracts of land became waterlogged. In addition, lands were now suffering from an infestation of noxious weeds (UVWUA, 1933: 96-97). The Association advised members to control weeds as best they could, but financially and technically strapped farmers could not keep weeds at bay.

Furthermore, the 1931 water supply had been low and members, more than ever, needed their promised Taylor Park Reservoir. Though feelings of resentment still abounded, the Association resolved to ask the Bureau for aid. In accordance with the 1927 contract, the UVWUA requested the federal government to construct a drainage system, rehabilitate the tunnel, and construct Taylor Park Dam. This seemed the only solution because no lending institution would consider loaning the Association such funds (UVWUA, 1932: 76-80).

In 1933, the PWA allocated \$2,400,000 to the UVWUA to have the Bureau of Reclamation build Taylor Park Dam, line the Gunnison Tunnel, and repair canals (*Denver Post*, 1933: 1; UVWUA, 1934: 105). In 1935, the PWA extended its allotment to \$2,725,000 so that drainage could be constructed on the project (*Reclamation Era*, 1935: 176). The Association was still required to repay the new construction amounts, but members hoped a well-functioning system would help secure sufficient revenue to repay costs. In addition, the new reservoir could be equipped with power production facilities to defray expenses.

The Association received additional New Deal assistance in the form of the Civilian Conservation Corps (CCC). Composed of young, single men in need of work, the CCC was suited to tackle operation and maintenance issues on many irrigation projects (Rowley, 2006: 321). The Association created a CCC camp in Montrose, and by 1937, CCC workers had completed about \$200,000 worth of work at no cost to the Association (UVWUA, 1937: 142-143). Workers of the CCC helped with drainage, canal improvements, and with the burdensome noxious weed epidemic.

The PWA funds and the CCC presence represented a turning point in UVWUA history. So useful were the CCC workers that the Association pleaded with the CCC Director in 1938 to allow the camp and its workers to remain. Members said it would be “inopportune to discontinue these camps at the present time” because the corps was doing so much to aid their project. The CCC was integral to the noxious weed control program. Workers were also a critical force in combating soil erosion in canals – which problem “seemed insurmountable until the advent of the CCC” (UVWUA, 1938: 3). The federal government acquiesced. Not only did it allow Camp BR-23 to remain, but it created another CCC camp on the project (BR-71) in 1938 (UVWUA, 1939: 12).

Association members could see the advantages of controlling their own project. The CCC men answered directly to the Association – not to the Bureau of Reclamation – and Association workmen were in the field supervising CCC workers. The Association could now tackle emergencies in rapidly adaptive ways. An example of this occurred when “serious flood conditions...endangered the headgates of three of the large canals” in 1938 (UVWUA, 1939: 13):

...the CCC Camps were called out on emergency work and put in heavy riprap that prevented the river from cutting around and leaving these headgates without water...

...conditions were such that had the river left these headgates, it would have taken weeks and possibly months to have diverted the river back into the original channel, thereby causing a partial, if not a total loss of crops on the 25,000 acres involved.

This was a notable change from when the Reclamation Service operated and maintained the project. Previously, especially during the project’s initial construction, the Service had greater manpower than the Association’s CCC workmen, but it could not utilize its force when emergencies arose. The chain of command and organizational linkages with the Association were too rigid and approval for action took too long. For example, in 1914, the project’s greatest emergency was seeped lands and the Association made its first drainage request to the Reclamation Service that year (UVWUA, 1914c: 140). The great inefficiency of the federal

government's operation and maintenance of the system is evidenced by the fact that it took twenty-one years for drainage construction to commence. With the Association now in control, emergencies, like flooding, could be acted upon instantaneously.

Not all of the Association's ills had been purged. Construction assessments and lack of credit were still great encumbrances. In 1939, the Association noted, "the present economic condition of the farmers of this valley is worse at present than in the immediate previous years..." (UVWUA, 1939: 14). Farmers could now grow adequate crops, but could not sell them. Markets were suffering. In addition, labor and farming operation costs were high and farmers lacked the means to acquire reasonable personal loans.

Uncompahgre residents were still in need of assistance. Again, there was simply no available capital for construction costs. When Taylor Reservoir was created, it was designed to eventually produce power, but that potential was never exploited. Members were desperate for power production revenue to ease their liability and speculated about numerous canal and tunnel points that could be tapped (UVWUA, 1939: 15-17). In 1906, Congress had authorized that electrical power revenue on Reclamation projects could be applied toward repayment commitments. Projects like the Salt River were benefiting from the decreased assessment burden that power production provided (Rowley, 2006: 118). From the project's inception, the federal government had intended the Uncompahgre to produce power, but nothing had become of the promise (*Montrose Enterprise*, 1902b: 1). The Association would attempt to tackle the power issues.

But power production turned out to be too great a challenge. As of 2004, there was still no power producing facility on the Uncompahgre Project (though this may change soon)¹ (Key Informant Interview, 2004a). Consequently, in 1940, the Association was left to request extensions and moratoriums on payments as power revenues did not materialize.

The requests for further assessment relief disturbed federal authorities. For decades the UVWUA had requested relief. How could further extensions help? In 1940, Under Secretary of the Interior, A.J. Wirtz, sent a scathing letter to the Association expressing the federal government's frustration (UVWUA, 1940: 24):

...I have determined that the Uncompahgre Valley Water Users' Association can pay without great hardship the ...construction costs which are due and payable...

The situation existing on the Uncompahgre Project has given me a great deal of concern as there seems to be no well considered effort to collect charges from individuals, and it is understood that notwithstanding the provisions of existing Federal statutes and of the several repayment contracts, water had been delivered to areas where construction and operation and maintenance charges are delinquent for a period of more than twelve months. I trust that your Association will appreciate the seriousness of the present situation and will pay promptly the charges now due and payable...It is my

¹ It appears the Uncompahgre Project may finally produce power. In 2009, the Association was in talks with the Delta-Montrose Electrical Association to capture power from the tunnel for use on the South Canal (O'Hare 2009, p. A1).

earnest hope that it will not be necessary for the Government to consider exercising the rights reserved to it....

The Association stood by its position. There was no way to pay construction charges. Particularly because they had been coerced into amending the contract of 1927, the water users desired a new contract with the federal government. In 1941, the UVWUA reported, “it is not possible to meet the terms of the several repayment contracts now existing and...no substantial progress can be made on the project until a practical repayment contract has been drafted” (UVWUA, 1941: 12).

Members desired the new contract to consolidate or replace all previous ones. The Association was operating under numerous repayment contracts and could no longer decipher what aspects of the contracts to act upon (UVWUA, 1941: 10). Before the new contract, members needed their project examined in its own context. The Association desired one more grand evaluation of its project that would produce one final construction cost repayment mandate.

World War II and the 1944 Reclamation Reorganization

The new contract and project evaluation would have to wait. The country had, in December 1941, entered World War II; national patriotism soon outweighed local assessment squabbles. At the 1942 UVWUA annual meeting, President W.J. Dodd made a “stirring address” (UVWUA, 1942: 58):

Today we are engaged in the most titanic struggle that has ever taken place in this world... As I look at you, fellow-farmers and neighbors, and stockholders of this project, I see grim determination in your faces. We are all of us determined to do our utmost to bring about this victory. We are united as a people and shall use every facility as producers of these farm products that are necessary for the winning of our cause.

The advent of World War II helped advance the Association’s agenda in many ways. Farmers now had a customer for their produce in the federal government. Many things began to improve on the project. By 1944, Taylor Park Reservoir was in full operation and the resulting water supply was more than sufficient. The CCC camps, though discontinued in July 1942, had done a tremendous job aiding the Association with weed eradication and canal improvements (UVWUA, 1942: 2-3; Rowley, 2006: 383). Drainage problems were reduced. In 1944, Association members were able to farm 4,000 to 5,000 more acres of land than the previous year (UVWUA, 1944: 80). The 1942 collection of operation and maintenance charges was “the best in history” and Association O&M accounts were “in the best condition they [had] ever been” (UVWUA, 1943: 1, 4).

War had its negative aspects. It took many local laborers from their farms and sent them to the front lines. At first, the Association hoped many of its farmers would qualify for a draft deferment, but eventually most able-bodied young men left home to fight (UVWUA, 1943: 2). Also, farm equipment costs increased and fuel for machines had to be rationed (UVWUA, 1942:

9). Items such as wire and timber could only be purchased in small quantities (UVUWA, 1944: 81).

For the Bureau, the issue of construction cost assessments was only marginally significant. Members of the UVWUA reported in 1942 that they had met with Bureau officials to discuss a new repayment contract, but were “reluctant to push [the] matter very closely” (UVWUA, 1942: 5). In 1945, the Association felt “nothing further can be done until the war is over” (UVWUA, 1945: 87). There were more important matters and the Bureau had a new set of responsibilities to worry about. It was involved in producing power for the war effort through its major hydropower plants and also was involved in national defense through securing dam sites from possible invaders (Rowley, 2006: 375).

The Bureau’s informal “reprieve” from repayment burdens was welcomed. In fact, during the war period, Bureau officials seemed to rethink their organization. Not since Franklin Lane’s reorganization of the Reclamation Service in 1913 had the Bureau been so willing to consider change. In the wake of Elwood Mead’s death, his reorganization ideals could have been forever lost, but, in a wise move, Reclamation officials now decided to give Mead’s suggestions a try (Rowley, 2006: 387).

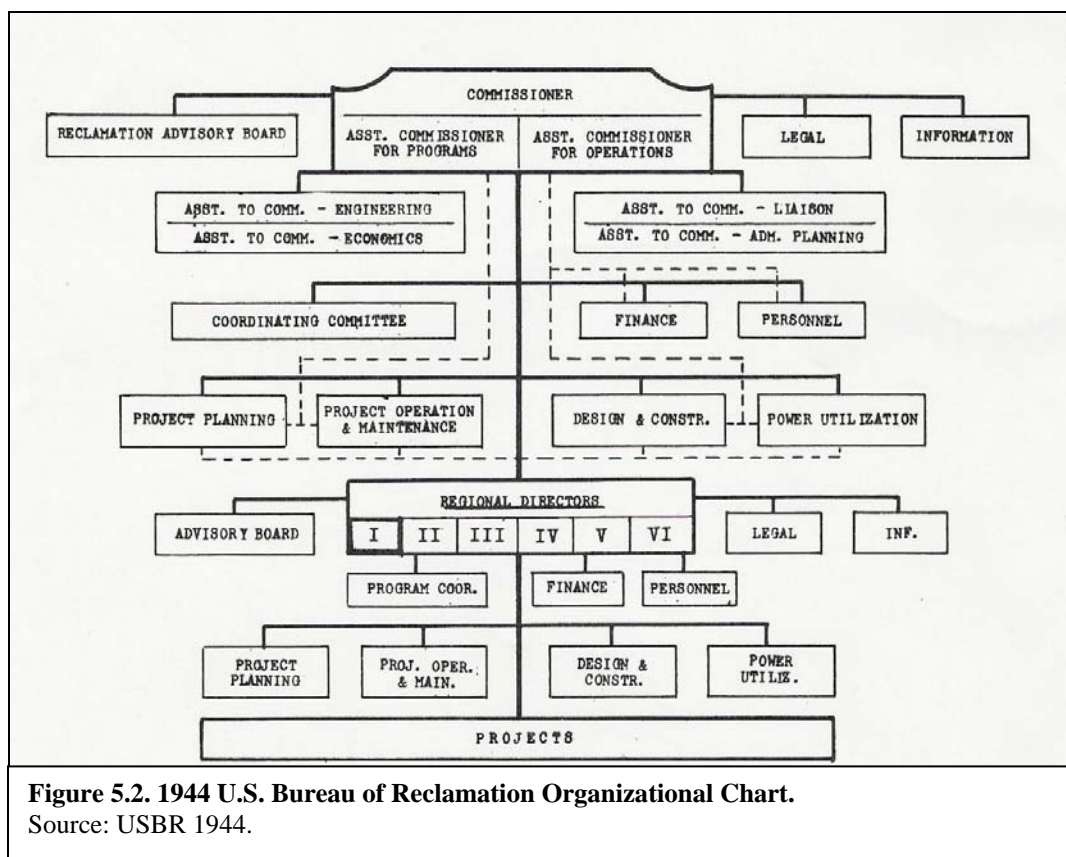
Mead’s grandest organizational desire was to regionalize the Bureau. Frederick Newell had created Reclamation’s original organization as partially regionalized. Project Managers reported directly to District Engineers who were relatively close by, but lacked a great deal of authority. Franklin Lane’s reorganization had centralized the Service to a large degree. All Managers in the West reported to one consolidated office in Denver. Not only did the system remove the Bureau presence from most western areas, but the increased influence of the Denver office had reduced the linkage of water users to the Washington office – where the big policy issues were to be confronted.

Mead wanted Denver-like offices all over the west. He saw the problems of having Washington bureaucrats make “local” decisions. The West should be divided into regions and each region should contain an office whose authority was on par with Denver. This way, each project would receive increased attention by decision makers close to project locations.

On September 9, 1943, the new Secretary of the Interior, Harold Ickes, proclaimed the Bureau would undergo a “regional administrative decentralization” (Rowley, 2006: 389). By 1944, Ickes had divided the West into seven regions: Region 1 – the Pacific Northwest with an office in Boise, ID; Region 2 – the Mid-Pacific with an office in Sacramento, CA; Region 3 – the Lower Colorado with an office in Boulder City, NV; Region 4 – the Upper Colorado (the Uncompahgre Project’s home) with an office in Salt Lake City, UT; Region 5 – the Southwest with an office in Amarillo, TX; Region 6 – the Upper Missouri, with an office in Billings, MT; and Region 7 – the Lower Missouri whose office would remain in Denver. Each office would oversee its projects’ operation and maintenance, plan new projects in the region, and interact and negotiate directly with water users (Rowley, 2006: 389).

Figure 5.2 shows the new Bureau of Reclamation organization chart. The 1944 changes mark the last *major* reorganization of the Bureau. Various positions within the Bureau have been

created or deleted since then, but the regional design has not been altered. Appendix A displays the 1944 reorganization in more detail by describing various positions within the regional arrangement as well as the Washington administration.



The Denver office did not lose all of its authority during the reorganization. In addition to housing the Region 7 office, it maintained its Design and Construction branch. It could now focus most of its talent on engineering. The reorganization effectively separated the “glamour” of massive project creation from the routine operation of current projects. This way, the Bureau could still aim to impress the entire world with its latest achievements *without* abandoning water users on older projects. This split worked well for the Denver office which soon caught the world’s attention as it brought to completion its construction of astonishing projects such as the Columbia Basin Project and the Central Valley Project (Rowley, 2006: 389-390).

Mitigating Conflict: The Contract of 1948

When World War II ended, the UVWUA was in good shape as compared to the early years. Its operation and maintenance of the project was much improved. In 1946, Association members applauded their Project Manager, Jesse Thompson², for his amazing work. The past season “was the best in the history of the Association...[with] no major breaks or disasters”

² Jesse Thompson had been a Bureau employee until the project’s transfer in 1932. He then worked for the Association. He managed the project from 1938 to 1956 (Thompson, 1956: 101-102).

(UVWUA, 1946a: 1). Water delivery service to middle and tail sections of the system improved. There was no mention of such problems in Association minutes as compared to Time Period One. Young farmers were returning from battle and the people of the valley looked to a brighter future.

The federal government began taking notice of the project's success. Though there were many areas of concern remaining between the Association and the Bureau, muted respect and legitimacy were starting to improve. As early as 1946, the Bureau began to see the Association as more cooperative. The Bureau noted, "It is a pleasure to know...this desirable harmonious relationship exists" (UVWUA, 1946b).

The Association could now resume its negotiations with the federal government for a new repayment contract. It would likely be different from all before it. The Bureau had dramatically changed internally. In addition, other Elwood Mead recommendations were to be implemented, including Mead's commitment to introduce extensions for construction repayment.

In 1939, Congress had passed its last major piece of repayment legislation. The Act provided for "variable payments of construction charges" (USDI, 1972: 634). Each project would be assessed as its own entity and be given a repayment schedule based on site specific agricultural conditions. If a project needed longer than forty years to pay, the Secretary of the Interior could grant it. Additionally, the ability to implement contracts with water users was transferred back to the Secretary of the Interior. With greater authority transferred to the Interior Secretary, settlers depended less on Congress and suffered fewer delays when action was imperative. Because the Bureau had effectively halted all discussions with water users during World War II, it had not had a chance to put the new legislation to use. Only after the Bureau came back to the negotiating table could it implement the 1939 Act. With the war over, and the Bureau restructured, Bureau officials were ready to see their new modes of operation implemented (USDI, 1972: 641, 663).

Soon after World War II, the UVWUA authorized the Bureau to reclassify its land. The Bureau sent employees to the project to produce a large-scale evaluation of lands and conditions. By the annual February meeting in 1946, Reclamation workers were already assessing land productivity, costs of production, crop yields, market prices, weed control, water quality, and drainage (UVWUA, 1946a: 2). The next year, data were compiled and sent to Charles A. Lory for review. It was then sent to the Bureau of Reclamation Commissioner and the Secretary of the Interior. After the latter's approval, the federal government officially began negotiations with the Association (UVWUA, 1947: 105).

At the February 1948 annual Association meeting, President William J. Dodd reported the reclassification and economic study was "complete" and shared results with members. The Bureau adopted one final Mead recommendation when it renegotiated contracts with water users. It included a Class Six type categorization of project land. Class Six lands were deemed "permanently unproductive" and would forever be except from repayment obligations. Combined with Class Five temporarily unproductive lands, an unproductive land total of 33,367 acres was written off the project (USBR, 1948: 4). The number of "paying acres" was set at 62,474 (UVWUA, 1948a: 109).

The maximum per acre repayment charge was set at \$51.98 with the total amount of debt to the federal government changed to \$6,000,000 to be paid over 100 years (UVWUA, 1948a: 109). The Association was to collect payments from its members totaling \$60,000 a year, subject to modification. The Interior Secretary could reevaluate the payment each year based on annual crop returns. Individual assessments would range from \$.20 to \$2.00 each year depending on the quality of the land (USBR, 1948: 5, 11).

Federal liens were not relinquished, but the new contract reiterated that the Association's liability was non-personal. It said "no landowner shall be liable beyond the loss of the land owned by him and subscribed to the Association..." (USBR, 1948: 31). In addition, unproductive project lands were released from the stock subscription and liens no longer applied to them.

Most seemed pleased with the federal government's offer. Later in 1948, when the contract was ready for approval by the water users, a large notice was put in the newspaper explaining the importance of attending the special meeting. The meeting was "vital" to the valley's success, for the new contract was "a proposition the water users [could] not afford to pass up." If the new contract was passed, the Uncompahgre settlers would finally "be on the way to peace of mind" (*Montrose Daily Press*, 1948: 1). The contract was approved by a vote of 39,870 in favor and 1,285 votes opposed. Even an aging Charles Moynihan was present to provide his support for the contract (UVWUA, 1948b: 115-116). The attorney no doubt saw this moment as reward for many years of hard work on behalf of the UVWUA.

The 1948 contract is the last major contract between the federal government and the Uncompahgre Valley Water Users' Association and it constitutes the governing document that stands today. Much of the contract was worded like others before it. The federal government retained the title to the project. It reserved the right to take over the project should the Association "default in any of the obligations to the United States" (USBR, 1948: 24). The Association must still pay for the Bureau to make periodic inspections of the project and keep adequate books to ensure proper contract compliance. The Bureau retained authority to dismiss a Project Manager it finds to be unfit. The difference between the 1948 contract and all previous contracts was the land reclassification, repayment extension to 100 years, and clarification of capital cost repayment liability.

Many problems were resolved. With 100 years to pay on productive lands only, the Association could focus its assets on creating a viable irrigation system. Members could afford to pay an adequate operation and maintenance fund. This way, the Association itself could one day afford its own construction of project improvements without becoming more indebted to the federal government. Furthermore, given a productive project, banks would loan money regardless of the presence of a lien.

Chapter 7 – Current Organization, Time Period 3, 1950-Present

The next decade was comparatively uneventful. The biggest problem was the lack of member attendance at stockholder meetings – an indication of general contentment. Between 1950 and 1959, only two annual stockholder meetings drew a quorum. By 1954, attendance figures were so low that the Board increased efforts to get people to meetings. “It has been extremely difficult for a number of years to get stockholders of the Uncompahgre Valley Water Users’ Association to attend annual meetings, or submit proxies, in a sufficient number to constitute a quorum...” (UVWUA, 1954: 25).

The Bureau and the UVWUA routinely conducted business. In fact, there is no mention in the UVWUA minutes of a Bureau official present at any Association annual meeting following the 1948 contract until 1959 when the Grand Junction, CO office was created as an extension of Region 4’s Salt Lake City office (UVWUA, 1959: 45; Key Informant Interview, 2004e). In following years, a member from the Bureau’s Grand Junction office was almost always present at meetings. Being only sixty miles from the UVWUA office, the Grand Junction branch was specifically suited to handle immediate Association concerns. The Bureau officials from this office were viewed more as an aid than a burden.

The relationship with the Bureau steadily improved in the 1960’s as the Bureau helped construct Dallas Creek Reservoir on the Uncompahgre River. The reservoir holds additional storage water for the Uncompahgre Project. The federal government did such an extraordinary job on Dallas Creek that the Association resolved to send official letters of gratitude to the Bureau’s Region 4 office, the Denver office, and the Washington office. Association members described Bureau officials as “highly cooperative and friendly” (UVWUA, 1961: 53). This was a marked change from the fighting of the 1920’s when the Reclamation officials were viewed as enemy agents.

The Uncompahgre Project became a crop production leader. In 1959 the project produced a “near record winter wheat crop” (*Montrose Daily Press*, 1962: 1). In 1962, Montrose County out-produced all other area counties. It surpassed the others with sugar beet harvests, barley, potatoes, and dry beans. The valley was finally fulfilling early century visions.

By the 1970’s, the project was transformed in the view of the federal government. In 1972, the Bureau of Reclamation stated the project was producing over \$8,000,000 annually and was sufficiently supporting its population. A Bureau report said, “Despite its many problems, the Uncompahgre Project has, in many ways, been a highly successful development” (USBR, 1972: iv). Some within the Association report that the 1970’s was when the relationship with the Bureau began to solidify as highly functional (Key Informant Interview, 2004a). The relationship between the Bureau and the Association has continued to improve and is now typified by cooperation and mutual respect. Newcomers hardly believed what older members remembered well – i.e., that a massive feud had once existed. As proof of the increasing goodwill, the Bureau, in 2002, chose to begin its 100 year birthday celebration on the Uncompahgre Project (Clemens, 2002a). This coincided with the Association’s 100 year birthday, and the two groups were proud to celebrate each other’s longevity.

The Association deals with the Bureau's Grand Junction office on everything except contract issues that are handled at the Salt Lake City office. As owner of the project's title, the Bureau sends Grand Junction employees to the project every year to do an inspection and ensure the Association is complying with contracts and Bureau rules (Key Informant Interview, 2004a; 2004b).

Periodically, the issue of ownership transfer comes up between the UVWUA and the Bureau. The Bureau has hinted it would transfer project ownership if the Association desired it. There would be both positive and negative impacts. If the Association owned title to the project, members could put water on as many acres and they wanted. As a private project, Bureau inspections would cease and the Association could operate in any manner it chose (Key Informant Interview, 2004e). The Association, however, has decided that the negative aspects to private Association ownership outweigh the positive ones. The project is well protected by the federal government. If a massive accident occurred, the federal government is ultimately liable. The Bureau also offers many low or no interest loans that would be difficult for local capital sources to match. In addition, because the Bureau owns the Montrose office building, the Association does not have to pay property taxes on it (Key Informant Interview, 2004e).

Members of the contemporary Association are, in general, content. They are served by an Association that exercises control over day-to-day operations. It calculates and assesses its own O&M charges and organizational expenses, and sends stipulated repayment collections to the Bureau. Today, the UVWUA incorporates a minimum assessment – mainly for someone who may need water for only a few acres of land. It costs the Association the same amount of money to provide water to small tracts as it does larger ones. Therefore, if a small farmer paid only the per acre amounts, larger irrigators would subsidize small ones (Key Informant Interview, 2004b).

Since gaining autonomy and taking over its own budget, the UVWUA repaid numerous loans to the federal government including the original construction amount as obligated in 1948. On June 1, 2002, the Association not only completed repaying the formerly conflict-ridden original \$7,000,000 liability, but did so fifty years ahead of schedule. This feat was celebrated by both Association members and Bureau officials at their 100 year anniversary party.

Whereas the Association overlooked delinquent payments during the first time period, today there is no question that one's water will be turned off should a delinquency occur. As further incentive for members to pay on time, growers receive a 3% discount on charges if they pay early. Assessments are collected in two installments. The first half of charges is due in April and the second is due in July. Current assessments (as of 2006) average \$27.75 an acre per year for mesa lands and \$22.60 an acre for adobe/shale (Key Informant Interview, 2004a; 2006).

Members also have full understanding of their rights as stockholders and have access to swift resolution in conflicts. They have multiple venues to get their voices heard to settle disputes. When a complaint arises, the member usually informs the ditch rider. If the dispute involves the ditch rider, it can be taken to the Manager. If the complaint is of a policy nature, it goes to the Board of Directors. If it is a physical issue, the Manager makes a decision. If the member remains dissatisfied, the complaint can be sent to the Association's grievance committee

who will investigate and report to the Board. The process is quick, normally taking less than one week for a decision (Key Informant Interview, 2004b; 2004d).

The Uncompahgre Project is seen as a success by many people within and external to the Association. One outsider stated “it is hard to find a better system” (Key Informant Interview, 2004c). Local Bureau officials have called the UVWUA one of the best organizations that they work with. They claim it is because of the people. Leaders go above and beyond their duty and know how to “run a project right” (Key Informant Interview, 2004e). According to one local Bureau official, “The UVWUA is a first-class organization and they [members] have their act together” (Clemens, 2002c).

PART IV: ANALYSIS AND CONCLUSION

Chapter 8 – Analysis

It is now possible to answer the research question: to what extent are the two ideal type theoretical models supported, refuted, and/or found in need of modification? The first conceptual model abstracts properties of successful local common property resource (CPR) organizations (the UVWUA in this case). What does the Uncompahgre experience suggest? The other model abstracts specific attributes of the linkages of CPR organizations to a central authority (here, the Bureau of Reclamation). What lessons of Uncompahgre Project linkage can inform improvement of this model?

Internal Organizational Form – Time Period One (1902-1931)

Freeman's (1989) ideal type conceptual model of local level organizational form addresses entities *internally*. In essence, the findings from the observed historical experience indicate that attributes from Time Period One largely correspond with variables configured for failure, as posited in the theory (see Figure 1.1.).

The first variable to evaluate is the source of leadership. Within the Association, leadership was nominally local. Association Board members had to own project land and be members of the organization in order to qualify. However, during 1902 to 1931, a great portion of Uncompahgre Project leadership also came from the U.S. Reclamation Service. The Project Manager, who oversaw operation and maintenance, was a Reclamation employee, hired and fired by officials in Washington. These cosmopolitan leaders may have lived locally, but were not members of the Association. Their supervisors were certainly cosmopolitan, living either in Denver or Washington, D.C. In addition, most project employees, such as ditch riders and clerks, were Reclamation employees selected and promoted according to central bureaucratic criteria. The cosmopolitan agenda from Washington was in compelling conflict with the agenda of local settlers.

The bureaucratic agenda took precedence over the local agenda. Most far-reaching was the bureaucratic objective of replenishing the Reclamation fund that trumped local financial relief agendas. In the struggle over payment caps, the Reclamation agenda superceded and eventually coerced Association members to alter their Articles of Incorporation. The cosmopolitan agenda of acquiring privately owned canals swiftly collided with the local agenda of ensuring equitable compensation. In this case, the UVWUA was pressured to accomplish both competing agendas, resulting in settler resentment and external delays.

What authority defined success or failure in task completion? Was it the local membership or the central bureaucracy? Association Board members and their employed staff were simultaneously responsible downward in the organizational hierarchy to Association members and upward to Reclamation officials (see Figure 1.1). They reported directly to members at annual meetings, but also had to report to the Reclamation Service via the Project Manager. This Reclamation employee was marginally responsible to the Association, but

ultimately reported to Service officials. He attended Association meetings, but if a conflict arose he enforced the will of the Service over that of the Association. Ditch riders recruited from the pool of local settlers were Reclamation employees who ultimately answered to the central bureaucracy.

The issue of acquiring privately owned canals illustrated the difficulties of this early arrangement. During the negotiations period, Project Manager C.T. Pease reported only to the Service – not the Association. This was problematic because the Association had likewise been charged to conduct negotiations. Soon, the Association discovered Pease's purchase offers on certain canals were dramatically different from its offers. The resulting confusion and delays could have been avoided had Pease been required to report to the Association.

The next area of comparison centers upon the distributional share system. Freeman asserts that an organization has a greater chance of success if it incorporates a three-sided share (See Figure 1.1). Since its inception, the UVWUA has always maintained a proportional share system. This system was arranged by the Reclamation Service when it helped create the Salt River Valley Water Users' Association and the UVWUA subsequently adopted it. As dictated in the Articles of Incorporation, each share of Association stock represented one acre of project land, entitled its owner to the one proportional amount of water tied to an equivalent assessment and one vote. Therefore, the formal structure of the UVWUA fulfilled the requirements of the model from the outset. However, problems arose in respect to two critical dimensions.

First, water delivery was frequently not dependent upon obligation fulfillment. The federal government required the Association to terminate water deliveries to all members who were delinquent on assessments, but though the Association threatened water shut-off to members, the evidence reveals the UVWUA largely refused to follow through. One reason was because nearly everyone on the project was delinquent due to the poor financial conditions. Also, as conflict increased on other issues (e.g. drastic increases of assessment charges and drainage problems) and the Association saw the Reclamation Service as tyrannical, the refusal to halt deliveries seemed a proper message of defiance.

Second, there were noted occurrences of an inadequate organization to overcome the large differences in water service between irrigators located toward the heads and tails in the delivery system. Some members at the head received more water than those at the tail as compared to the amount promised. Additionally, many at the head received too much water in an attempt to get adequate water amounts to those at the tail, a significant contributor to the problem of high water tables and seepage.

Did members have the technical tools to implement share system rules? Member resource control was lacking (see Figure 1.1). The federal government ran the project both administratively and the field. Those in direct control of the water were local workers hired by the Bureau. They received their daily orders from the Bureau and, consequently, were insufficiently flexible to adjust available water supply to demand. For example, they did not have the technical wherewithal to prevent rising groundwater tables that were causing severe damage to settler crop production.

Member propensity to support the local organization varied. There was a great deal of internal fighting during the early years, beginning with unequal purchase amounts for private canals and culminating with the demand for President Dale's dismissal in 1930. But during the years of greatest conflict with the Service (1923 and 1924); member support of the organization was high in the sense that members were willing to put aside local differences and stand united in order to secure relief.

The final variable, the sustenance of democratic rights, due process, and responsiveness was very poor. Rights of members were stunted because of the Service's presence on the project. The fear of federal "spies" at meetings kept many members from voicing concerns. Due process was difficult for the Association to offer because action depended too much upon the federal government's approval. For example, when the Garnet ditch owners demanded a more equitable price for their canal than previously offered, the Association could propose fair compensation, but such matters ultimately had to be approved by Reclamation officials. In terms of responsiveness, the long chain of command undercut communication and citizen/Bureau discourse.

Internal Organizational Form – Time Period Two (1932-1949)

This time span reflects an important shift toward the attributes posited to be critical to successful, long-enduring CPR organizations. The source of leadership became significantly different. Leadership officially changed in 1932 with the transfer of the project to the UVWUA. The most visible cosmopolitan leader on the Uncompahgre, the Project Manager, was replaced with a local Manager.

Control over the project's resources was given almost completely to the Association in 1932. With Bureau penetration into Association matters diminished, staff reported to Board members who took their agenda directly from settlers. Now ditch riders were strictly Association employees and reported to the Association Manager instead of a Bureau official. There were no longer people "on-site" responsible "up" to cosmopolitan bureaucrats. The Bureau still oversaw the project, mainly with regard to contract compliance. The Association's Board still had to submit to investigations and keep records for the federal government, but because of the Bureau's 1944 reorganization, the federal officials to report to were in either Grand Junction or Salt Lake City – making them more "local" than before.

The formal distributional share system remained intact, but could be better implemented because two new sources of revenue became available. First, water delivery was more dependent on fulfillment of assessment obligations. Also, because local irrigators could effectively sanction each other, the head-tail water delivery distinction was diminished. Each acre of irrigated land produced increased revenue for O&M. The majority of members, having met their financial obligations and given greater autonomy to address local agendas, were able to acquire greater technical control over their water delivery system. Furthermore, technical improvements were made possible by the infusion of assistance from the federal Works Projects Administration and Civilian Conservation Corps. Organizational rules were better served by technological tools that accompanied improved drainage, noxious weed control, water delivery, and measurement tools. Once the O&M was transferred to the Association, its employees had

direct control over the water resource. Member propensity to support the local organization thereby increased.

The final variable, sustenance of democratic rights, due process, and responsiveness, increased. When the Board members heard a complaint, they could address it with greater assurance on follow-through because they did not need approval from the federal government on most day-to-day matters. In addition, the Association could respond to its members more effectively than before because they were on-site and possessed authority to act. Member morale was higher. In addition, due process and responsiveness to member needs were enhanced. Membership meetings were conducted in more productive ways.

Internal Organizational Form – Time Period Three (1950-Present)

After adoption of the 1948 Contract with the Bureau, the organization became arranged in a manner CPR theorists have posited as essential for successful resource commons management. Leadership recruitment has remained local since the Association took over O&M in 1932. Leadership and staff were directly responsible to members. Though the Association still reports to the Bureau on some matters, but the Bureau no longer provides the definitions of success or failure for daily operations and management.

The three-sided proportional share is a key aspect of the UVWUA that has remained constant over all three time periods; however the capacity to implement the share system has improved markedly. Self governing members ensure that water is not delivered unless assessment obligations are paid. Over the past fifty years, the Association has followed through on its word to terminate member water supplies when there are delinquencies. There is no significant head-tail water distributional problem on the system today. Quality of water service at tail locations is, for the most part, of the same quality as at the head. When a farmer desires water, s/he calls the ditch rider. The ditch rider opens and closes major headgates and instructs the farmer when to open his/her personal headgate. Members are more than adequate enforcers of individual water use. If someone attempts to break a headgate's lock or water at the wrong time, it is seen as stealing from a neighbor – and all Association members – and neighbors pressure each other accordingly. If members have difficulty enforcing neighbor compliance, the Association can intercede and call the local sheriff if needed (Key Informant Interview 2004b). Member support of the Association is high. The 100 year Association anniversary in 2002 reflected much pride.

Internal Organizational Form – Conclusions

The UVWUA's internal organization, post-1949, came to implement the attributes the model posits as important. Although the organization was always populated by locals, in Time Period One they were subjected to serious conflicts imposed by inherently different agendas. The need for rapid adaptation on the part of settlers could not be met by a remote central bureaucracy populated by cosmopolitans. Local settler authorities on the Board and staff were compelled to adhere to the agendas of the Bureau at substantial cost to the needs of Association compatriots. Although there was always a three-sided share system in place, it could not be implemented given three factors: 1) cosmopolitan penetration deep into the UVWUA decision-

making, 2) both locals and cosmopolitans were accountable for definitions of success imposed by the central Bureau authorities, 3) lack of capacity to connect water deliveries to assessment collection, and 4) the lack of sufficient resources and technical capacity to control water in a manner that could provide high quality delivery to all segments in the system (head, middle, tail). This, in turn, meant member propensity to avoid assessment payments and led to withdrawal of support for other Association business as the Bureau would define it.

The conceptual model succeeds in capturing critical dimensions on which organizational change occurred. When the Association was most troubled, virtually all of the organization's attributes were arranged in such a manner that would predict CPR organizational failure. After 1932, the Association's greatest alterations shifted the organization toward the alignment that would predict greater success. Finally, after the changes were installed that were incorporated in the Bureau-Association contract of 1948 the contemporary organizational attributes are those that the model would predict essential to smooth Association functioning.

One dimension missing from Freeman's conceptual model that would further aid the UVWUA evaluation is that of Ostrom's (1992: 71-72) "graduated sanctions." Ostrom asserted that, in the enforcement of organizational rules, the greater the extent to which the local CPR organization possesses an array of potential sanctions that can be fitted to the nature of the offense, the greater the capacity of the organization to enforce rules. UVWUA history reveals many instances of inappropriate sanctions for rule-breaking that merit mention.

The issue of liens on project lands presents an example of an inadequate sanctioning system. Those who wanted water had to first agree to mortgage their land to the federal government. Though the threat of punishment of land takeovers remained constant over time, circumstances have altered the appropriateness of the sanction. During Time Period One, project conditions were poor and there were few people who were *not* delinquent on construction payments. Taking over nearly all project lands would have been a highly inappropriate punishment for farmers on a new, struggling project. The threatened sanctioning hammer was too heavy to employ.

In addition, the threatened sanction produced a highly negative secondary problem. Simply having a "first mortgage" with the federal government discouraged lending institutions from providing personal loans to struggling farmers. These first-generation farmers desperately needed start-up capital for any chance of success. This propelled the project into a cyclical sequence. Liability would never decrease if conditions did not improve and conditions would never improve if the liability penalties included mortgaged land. Mortgaged lands hindered adequate personal loan acquisition and the absence of adequate start-up capital hindered the ability to pay off the liability. All this is to say that the federal government had a sanction that Bureau authorities dared not employ. This fact reminds the analyst of the importance of sanctioning devices carefully graduated to the nature of the offense.

Linkage to Federal Bureaucracies – Time Period One (1902-1931)

A second conceptual model has specified more and less effective systems for linking a local organization to a central bureaucracy. In this case, the linkage is between the UVWUA and the U.S. Bureau of Reclamation. Figure 1.2 displays the variables.

The linkage arrangement between the two organizations originally resembled the unitary model. Most control over the resource rested with the central bureaucracy at the top. Money flow was arranged to be “bottom-up” with the Association sending operation and maintenance and construction payments to the federal government. There was a small amount of money kept within the Association was to reimburse Board members and pay employees, but the bulk of the Association’s funds were to go Washington.

The federal government retained most of the decision-making powers and agendas were crowded at the “top.” Decisions were made by Washington bureaucrats largely ignorant of, and divorced from, local conditions. Even when the Service decentralized and sent a great deal of authority to the Denver office in 1913, the most important decisions (such as repayment amounts) were still made by the Reclamation Commissioner and the Secretary of the Interior whose mandates were largely “umbrella” policies for all Reclamation projects. Furthermore, the Denver office also operated with incompatible agendas and considerable distance from the UVWUA locality.

Delays were common and disastrous, as the drainage and assessment issues revealed. As early as 1915, Uncompahgre lands were heavily seeped and farmers desperately needed a drainage system. Drainage construction did not even begin until the 1930’s. Many good tracts of land lost their productiveness during the delay. The Reclamation Service had been in charge of the project’s O&M and had a large construction force on site, but drainage required approval from Reclamation officials who were bogged down with a multitude of other concerns. With the 1913 Reclamation reorganization, approval grew even more out-of-reach as new construction contracts required an Act of Congress.

An absolute declaration of construction charges was critical for Association members. They waited years while the issue went from various Reclamation personnel to recommendation Boards, to high level officials, and to Congress. By the time one assessment pronouncement made its way to the Association, conditions on the project had changed to such a degree that the pronouncement was no longer applicable. While waiting for proper assessment decisions, some farmers left the project, speculation rose, and feelings became increasingly antagonistic.

There were also problems with “leadership overlap.” The Reclamation Service’s Project Manager and his employees penetrated deeply into the UVWUA, carrying colliding agendas. The Project Manager worked and lived on the project. He made his annual report at UVWUA meetings and was very much a part of the Association’s organization. But he was also a Reclamation employee and his first loyalty was to the bureaucracy. Conflict emerged on issue after issue. This compromised local adaptability because Bureau leaders were responsible “upward” and controlled distribution of funds so that central bureaucratic agendas trumped local ones.

There was a lack of clear organizational lines of authority. During the early years, Reclamation's organization and personnel were altered many times. It was difficult to understand the chain of command – especially when Secretary Lane created the five-member Reclamation Commission in 1913. The Association received promises of action from varying Commission members who each thought he had the authority to act, but did not ultimately possess it. Few people locally and in Reclamation understood how the Commission's command operated. Many became frustrated. Those who had made promises could not follow through and Association members felt betrayed.

By the latter part of the twentieth century's second decade, neither the Association nor the Reclamation Service saw each other as legitimate. Inter-organizational legitimacy suffered due to: 1) unequal purchase amounts on private canals, 2) repeated unfulfilled promises of construction costs and per acre assessments, and 3) empty promises of drainage and water storage. Culminating with the Fact Finders hearings in 1924, the Association made it very clear that it distrusted the Service and questioned its legitimacy in overseeing its project.

When the Service demanded the UVWUA alter its Articles of Incorporation on threat of project closure in order to charge greater construction assessments, it implied the Association was incapable of running itself effectively. The Service may have appeared to support the local organization during early negotiations, but when the federal government desired specific action, the façade fell. By utilizing scare tactics, it proved it had little respect for the Association. In addition, Newell's Known Knockers and Kickers list is a strong piece of evidence showing the Service's lack of respect for settlers on all of its projects. By instructing Project Managers to compile secretive lists of problematic settlers and sanctioning Managers who refused, the Service showed its distrust of locals.

Linkage to Federal Bureaucracies – Time Period Two (1932-1949)

The nature of linkages between the UVWUA and the Bureau shifted in the direction of those found in the federal model. Changes began with the project's transfer of operation and maintenance to the UVWUA. The transfer ultimately gave greater local autonomy and decision-making authority to the Association. More money remained with the Association. The transfer of O&M permitted the Association to calculate and assess its own operation and maintenance charges. Once collected, it could start building up its own construction force and rely less on the central bureaucracy. Instead of sending all assessment collections to the Bureau, the Association only sent up the original capital cost repayment assessments.

The Bureau's lengthy decision-making process was reduced. The Reclamation Project Act of 1939 made contract negotiations with settlers no longer dependent upon Congress. This helped a great deal during the negotiations leading to the 1948 contract. Regionalization of the Bureau put many federal decision-makers close to projects. This way, officials could easily discuss current decisions with members. The Association's policy-making power also removed unnecessary umbrella mandates from the federal government. With most decision-making power held only by those involved, only applicable standards and decrees were made.

Control over operation and maintenance greatly reduced the delays during emergencies. When a canal needed repair, the new Association could act immediately without waiting for approval from Washington. It could likewise begin preventative care on its system through relining the tunnel and storing water in Taylor Park Reservoir for times of drought.

The transfer of operation and maintenance gave the Association greater clarity regarding its role within project's framework, but confusion over the project's grand organizational design was present. The Association had seen numerous organizational alterations within the Bureau of Reclamation and felt the regionalization of 1944 was simply another "experiment" that would soon pass. It would take years of organizational stability to reduce confusion over the new arrangement.

Legitimacy between organizations improved. During World War II, with the Bureau occupied by other priorities, the Association proved to the federal government that it could handle its own operation. The Association began to incur respect from the Bureau. The contract of 1948 created common socio-political ground upon which greater mutual legitimacy could develop between the Bureau and its project sponsoring organization. After a thorough investigation of project conditions, the federal government finally offered reasonable assessment amounts on productive land only.

Linkage to Federal Bureaucracies – Time Period Three (1950-Present)

There were no major organizational alterations after 1950. The observed attributes of the linkages reflect those of the federal model. Only minor alterations toward greater federal model resemblance have occurred.

The Association has increased financial control today because the initial construction charges to the federal government have all been paid. The Association still makes payments to the federal government for charges on other system components, but most of the budget is committed to internal operations.

Leadership does not overlap between linked organizations. A leader in the Association is not a leader in the Bureau of Reclamation. Decisions regarding the Uncompahgre Project are largely made by the Association. The Bureau retains some decision-making power with contract compliance. When decisions are made by the Bureau, local Bureau employees are readily available to discuss the implications for the Association. In addition, because those making decisions on the Uncompahgre Project are nearly all "local," most decisions – even those from the Bureau – are site-specific.

Delays are not common on the project today. Because the Uncompahgre Project is a federal project, there will always be a number of bureaucratic provisions to be satisfied, but most of the major impediments to smoothly running the irrigation system have been eradicated. The Association responds quickly to emergencies. Bureau officials can arrive quickly if they are needed. Members can visit officials in Salt Lake City if they need urgent assistance.

Legitimacy has increased. With over 100 years experience together, the Association and the Bureau have come to regard each other with mutual respect. There have been numerous successful joint efforts and with each one, each organization's roles have been clear and rights of each have been sustained.

Linkage to Federal Bureaucracies - Conclusion

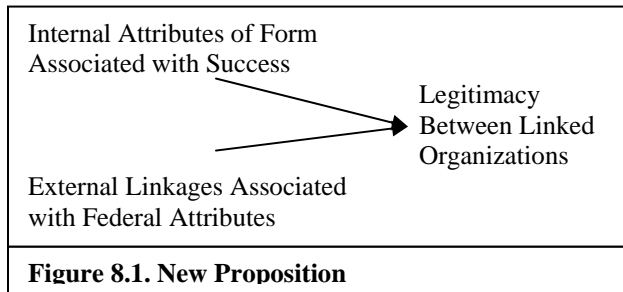
Based on the case study evidence of the Uncompahgre Valley Water Users' Association, Freeman's (1989) theory of linking to central bureaucracies finds support. When linkages were those of the unitary type, serious problems quickly arose and could not be expeditiously resolved. Uncompahgre Project productivity, stability, and water management required a shift to federal inter-organizational attributes.

During the next time period (1932-1949), when major changes occurred, the bulk of decision-making power was transferred to the local organization. Coupled with the Bureau's regionalization in 1944, the decision-making process was markedly decentralized and rested largely with the Association. Most funds were allowed to remain with the UVWUA which lessened the dependency on the Bureau. Delays were reduced and legitimacy began to sprout.

New Proposition

How does internal organizational structure interact with linkage as between local level organizations operating in the interface between individual farmers and the central federal bureaucracy? The assembly of attributes represented in each of the two conceptual models together is in all likelihood essential to the explanation of organizational success or failure. However, only because both internal structural elements *and* external linkages improved could the Association's success become possible.

Revised proposition: the more the local CPR organization possesses attributes associated with organizational success, and the more the linkages between a local CPR organization and a central authority reflect attributes of the federal model of linkage, the more the two organizations will grant each other legitimacy. Figure 8.1 illustrates this proposition. Legitimacy, as it is utilized here, can be defined as the "formula by which individuals accept a power and consider their obedience as a just commitment" (Weber, 1964: 130-132; Badie, 2001: 8706). Both Freeman (1989) and Ostrom (1990) utilize the notion of legitimacy in their theories. Ostrom's "minimal recognition of the rights to organize" dictates that external authorities must recognize local organizations as legitimate in order for the local CPR organization to function smoothly (Ostrom, 1990: 101). In Freeman's federal model of linkage, he contends that the more each linked organization sees the other as legitimate, the greater will be the likelihood of a strong, sustainable relationship between the two entities (Freeman, 1989: 40).



When the Association lacked attributes of successful CPR organizations, legitimacy between the two organizations was low. Unitary-type linkages with the Bureau predominated. As attributes within the Association reflected more of what theorists posit as successful, and as the linkages with the Bureau became more federal in type, legitimacy between the two organizations grew.

It is unlikely that internal changes in the CPR organization *alone* would have led to the current high level of legitimacy. If leadership became local and was responsible to members, problems with the Bureau would still have remained. The Association's lack of autonomy within the framework of the project would have kept the two organizations at odds – for one organization would be running the project without the power to make decisions and the other organization would make decisions without the hope of enforcement. It is also unlikely that *only* shifting the linkages to a federal arrangement would have led to today's higher legitimacy levels. If the Association were given greater decision-making power, but had its internal leaders mainly responsible to Bureau officials the two organizations would likely still be in serious conflict. Only because *both* kinds of organizational change occurred does contemporary legitimacy run high.

Chapter 9 – Conclusion

There are many histories of the Bureau of Reclamation, but not as many investigations of individual projects. The case of the Uncompahgre Project provides insight into a significant history of local farmer/settler interaction with a powerful central federal bureaucracy. As one of the first five Reclamation experiments, its story demonstrates the interplay of technical, political, and social organizational phenomena. To have a detailed record of the area's irrigation system and to read an account of how the UVWUA has transformed into a successful common property resource manager establishes a path for describing and analyzing the resource commons. The Uncompahgre Project has a rich history that contains lessons for those who wish to learn about how people come together to produce a large-scale water foundation for communities of an entire valley that has thrived for over 100 years.

The UVWUA's organizational attributes hypothesized to be essential to the diagnosis of success and failure. Organizational changes made during Time Period Two were critical to the successful organizational construction of the current UVWUA. The conceptual models could be improved in two ways. First, any revised conceptual model should include the presence/absence of Ostrom's (1990) "graduated sanctions." Ostrom's variable became critical to comparing the divergent influence of the Association's liens over time. Secondly, models could be improved by including inter-organizational legitimacy as a variable to be analyzed in conjunction with both conceptual models: internal organizational form and external linkages.

It is important to note that in no way do these theories assert causality. Shifting values of a single variable cannot *cause* an organization to be successful. It would not be defensible to claim that a unit change in a share system dimension can cause a fraction of a unit of change in organizational success. The set of variables, taken together however, can represent key parameters to examine when seeking to explain success and failure of local CPR's. Tracking such parameters cannot predict specific events, but they each represent important benchmarks against which prospects of CPR organization can be evaluated.

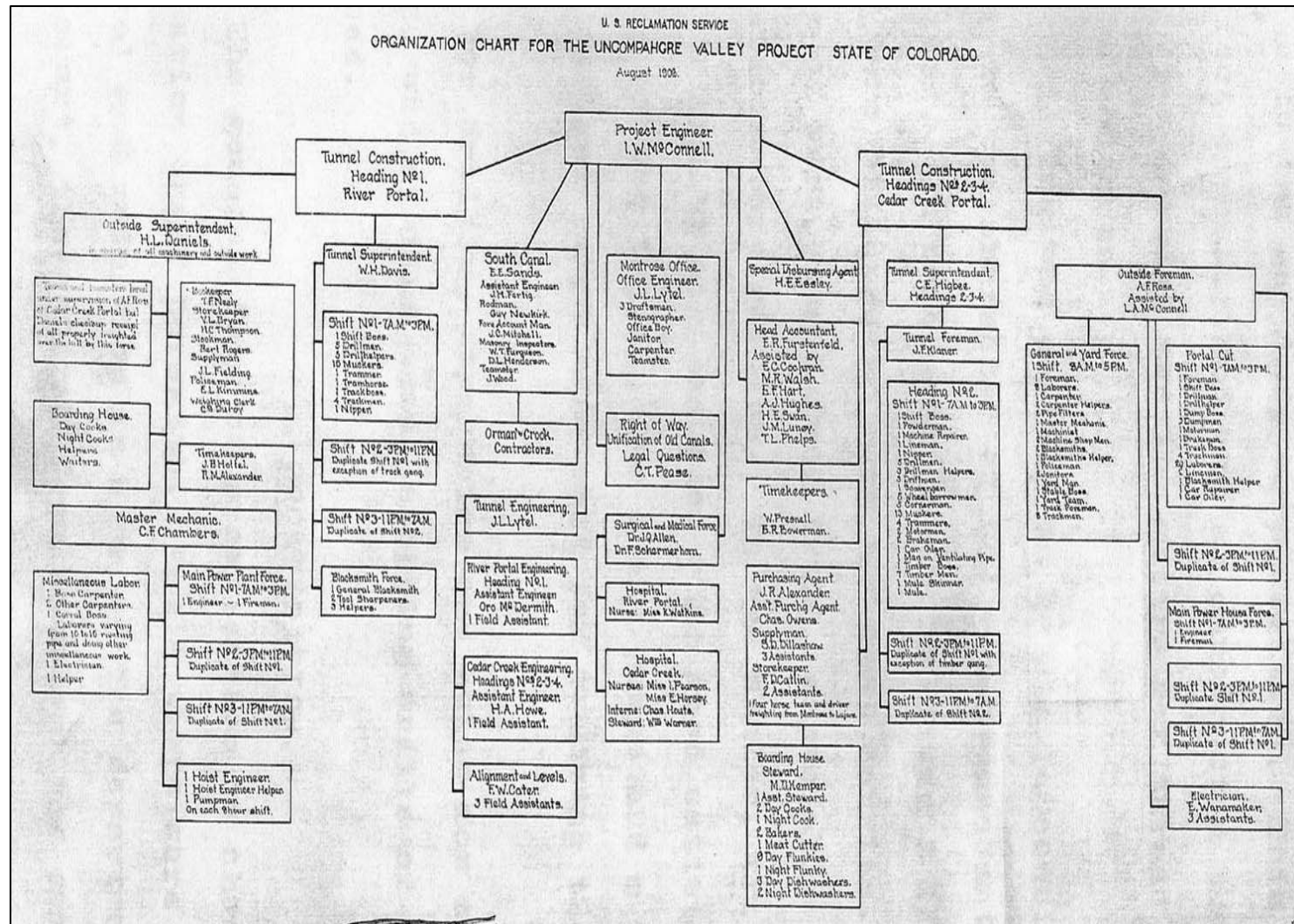
It is possible to contend that essential organizational dimensions in the early years were configured in ways that impeded success. During the time period encompassing 1902 to 1931, there were times of cooperation, but the evidence suggests the two organizations were mostly adversaries. Largely due to a unitary-type linkage between the two organizations, the federal government held most of the control over the Uncompahgre Project and did not see the Association as the legitimate manager of the system. Members, over the years, withdrew legitimacy from federal authority.

Association linkage to the federal government improved during 1932-1949. The transfer of operation and maintenance to the Association and adoption of a revised repayment contract in 1948 provided the Association with greater autonomy. This reduced the friction between the Association and Bureau. After 1949, the Association functioned smoothly and manifested attributes of a successful CPR organization. Its internal governance was democratic and members supported the organization. The linkage to the federal government is now marked by cooperation. The two organizations have functioned for six decades as effective allies in management of their common property irrigation water.

Sociologically, the case of the UVWUA provides evidence that the social organizational aspects of any CPR program are just as important as technical aspects. When the Bureau penetrated deeply into the local irrigation community with an organizational model of a unitary type implemented by its engineering elite, results were disastrous. When, after decades, the Bureau became willing to grant greater autonomy to local CPR organizations in a manner more reflective of the federal model, many aspects of the CPR management rapidly improved. But the local organization, to be effective in CPR management, also required the hypothesized changes in the attributes of internal form (see Figure 1.1). The case of the UVWUA suggests that effective management of a water commons is a product of two kinds of organizational phenomena – the structuring of linkages between localities and central bureaucratic authorities, and the structuring of internal organizational form. Of the two, in the case of the Uncompahgre, the form hypothesized to engender success was essentially in place from the beginning. But those attributes could not produce effective control over the water commons until constraints imposed by the unitary system of linkage were dissolved by a shift to a federal model of linkage.

There are implications of this research. In terms of policy, planners in central bureaucracies would be well advised to consider the high price paid by local people when they are tied to organizational structures with attributes associated with failed CPRs. The shift toward local CPR models that provide for local leadership that is accountable downward, viable share systems, and other dimensions can potentially pay big dividends for improved CPR management. There are also theoretical implications. The UVWUA could be compared to other U.S. Reclamation projects using the conceptual models. What are the differences between projects that could account for varying degrees of success or failure? What would careful comparisons across Bureau projects suggest for improving theory of organizational functioning?

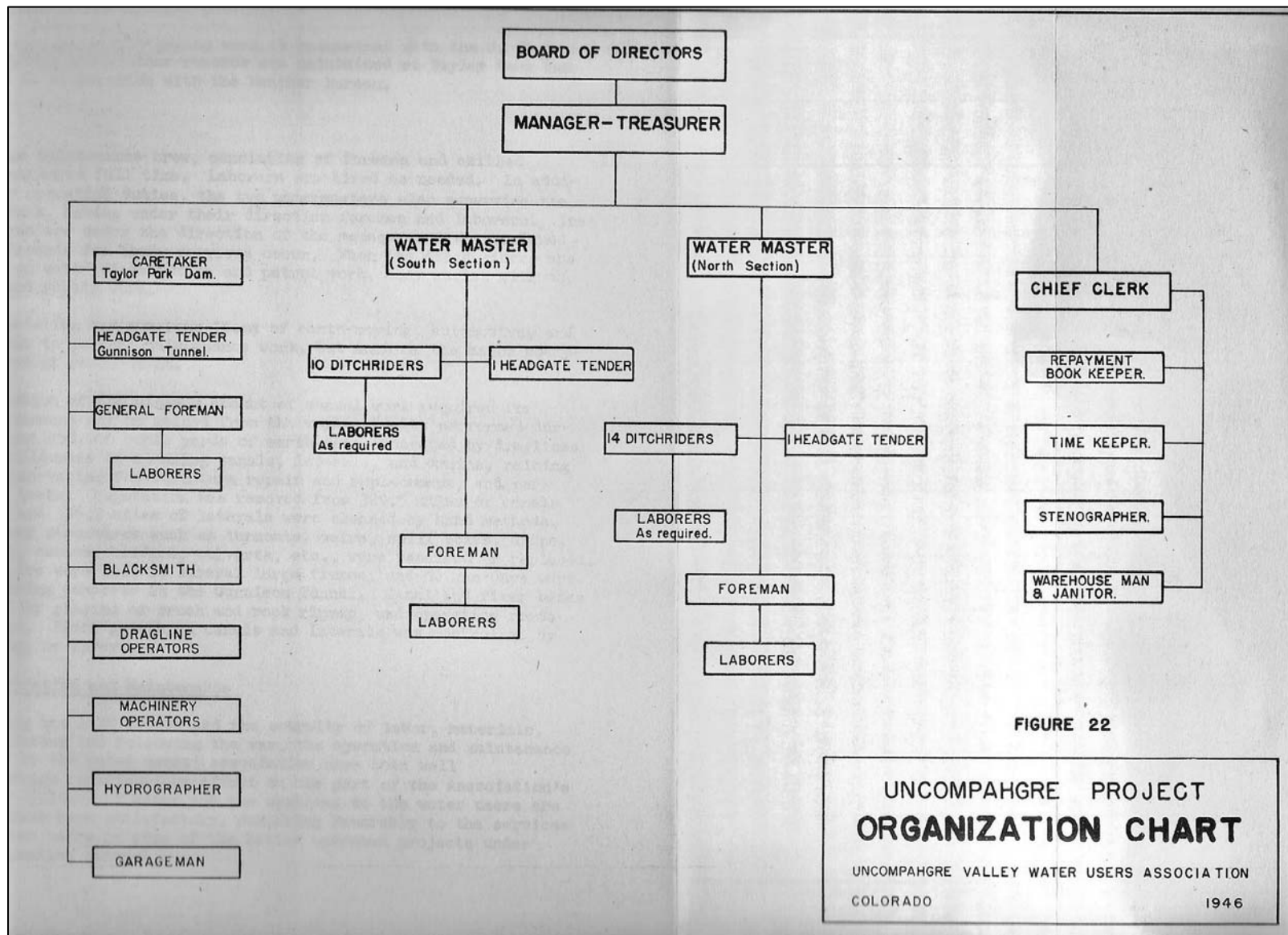
Source: U.S. Bureau of Reclamation 1901-1912b.



Appendix A – Organizational Models

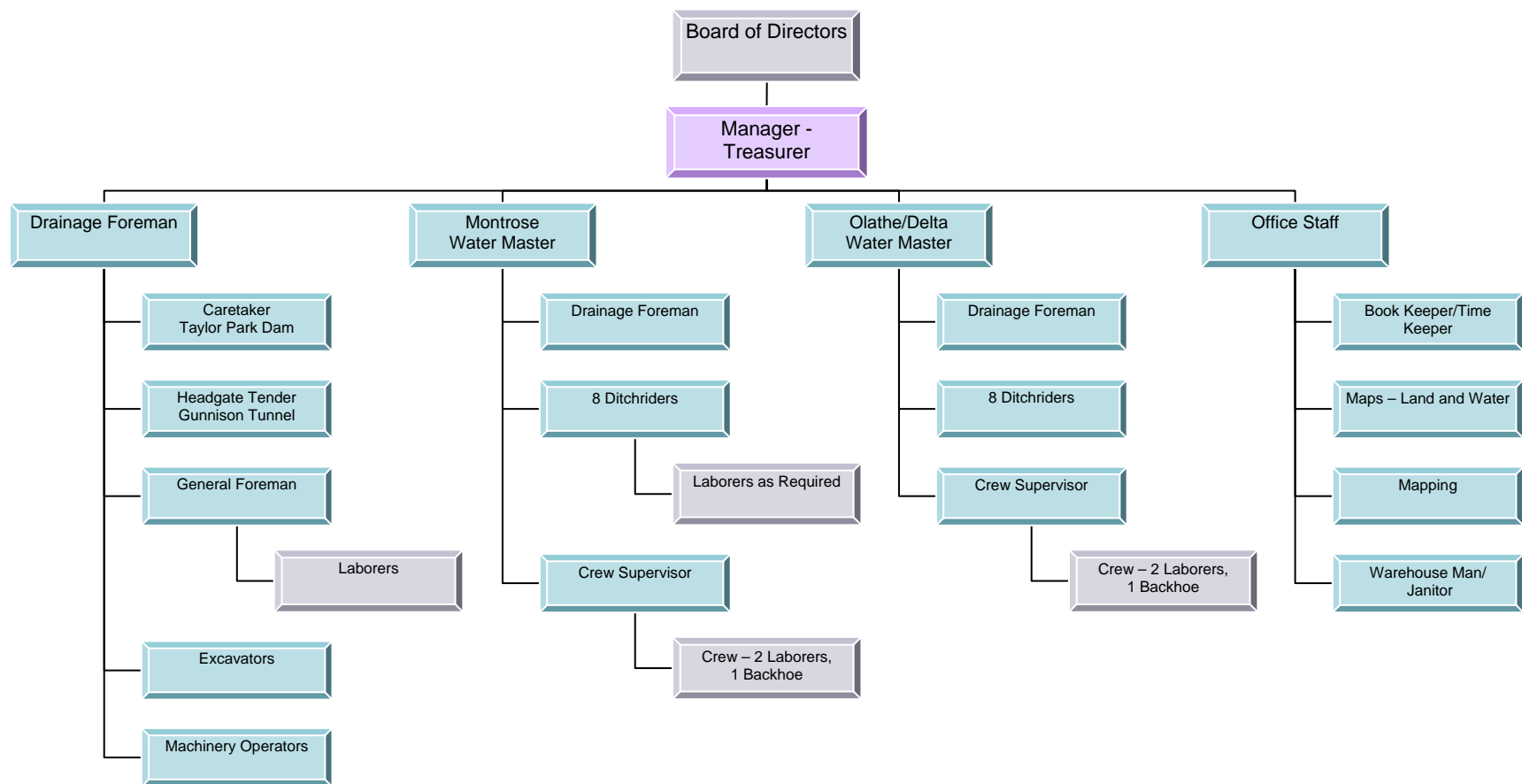
Uncompahgre Valley Water User Association Operation and Maintenance Organizational Chart, 1946

Source: U.S. Bureau of Reclamation ,1948: 67

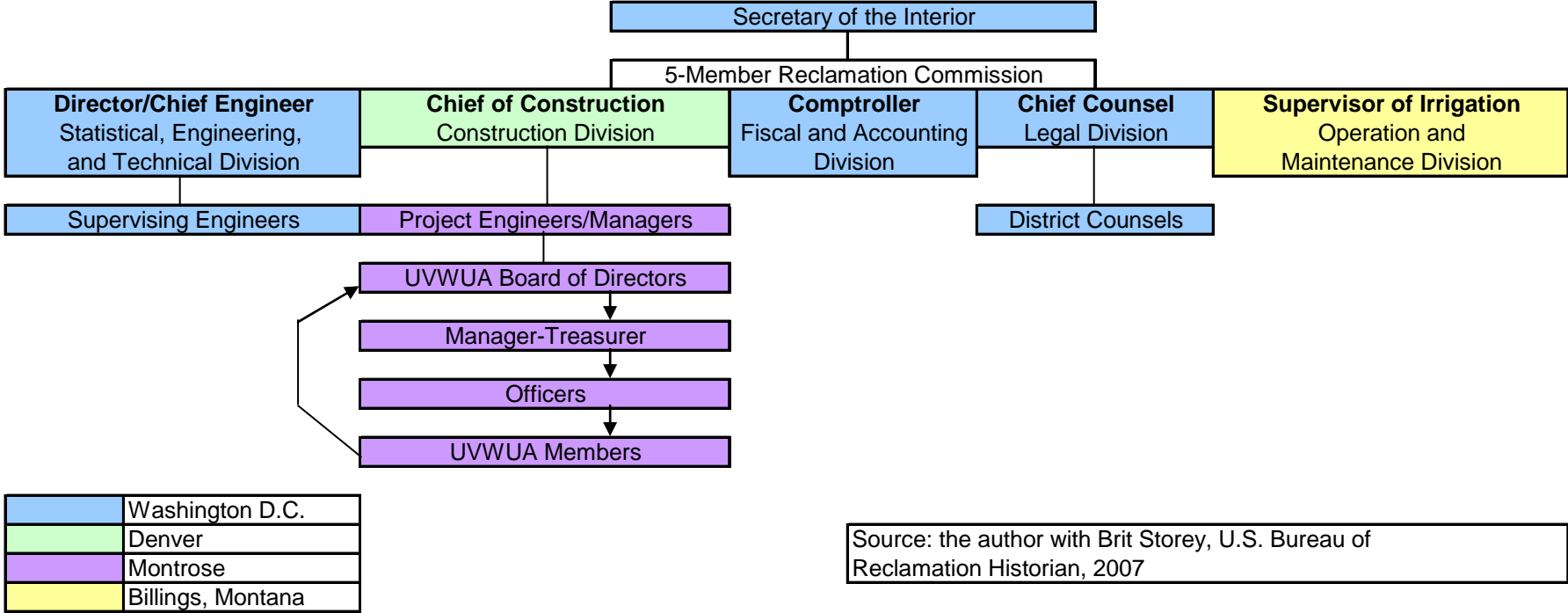


Current Uncompahgre Valley Water Users' Association Organizational Chart as of 2006

Source: UVWUA

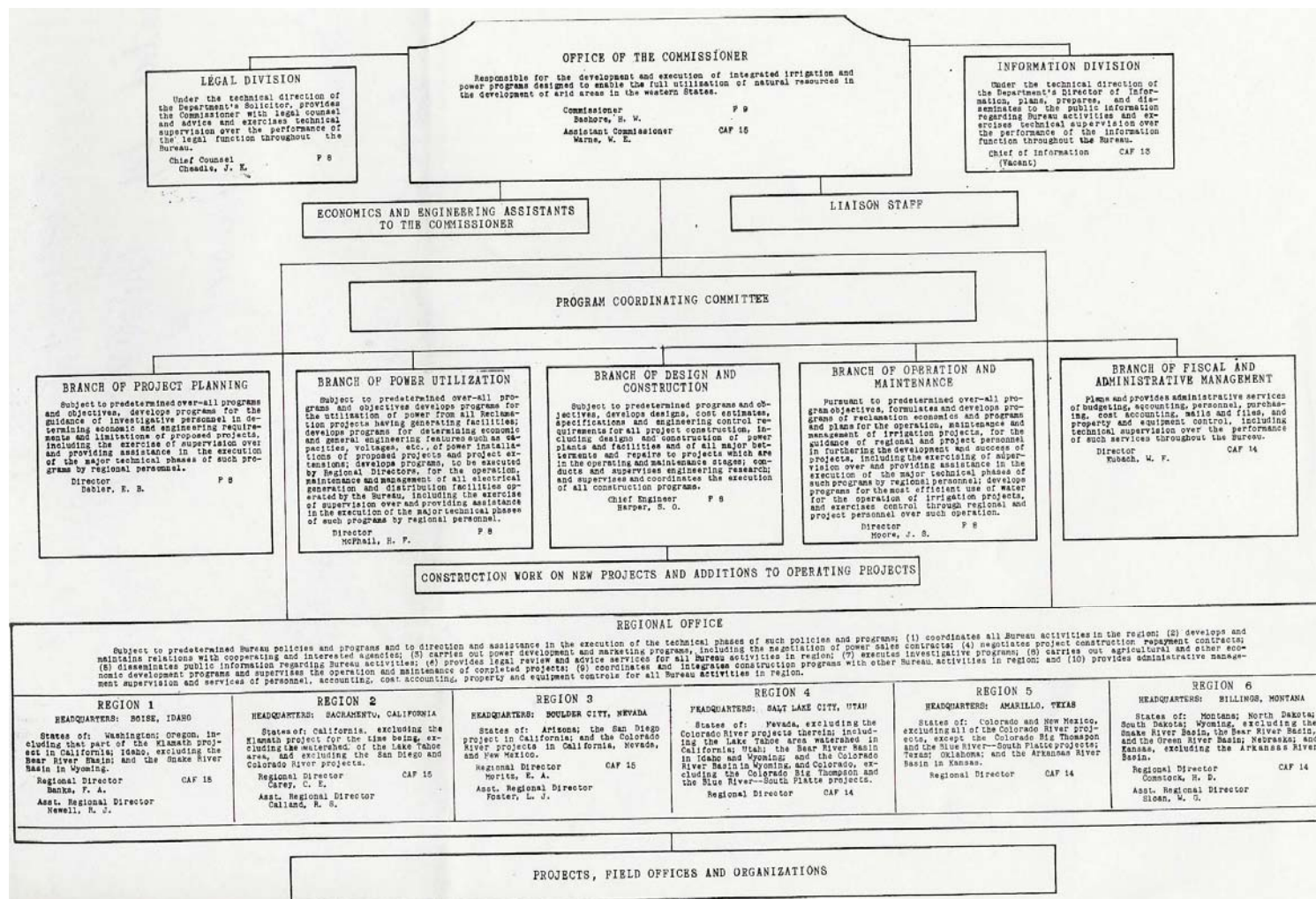


1913 Reorganization of the U.S. Reclamation Service



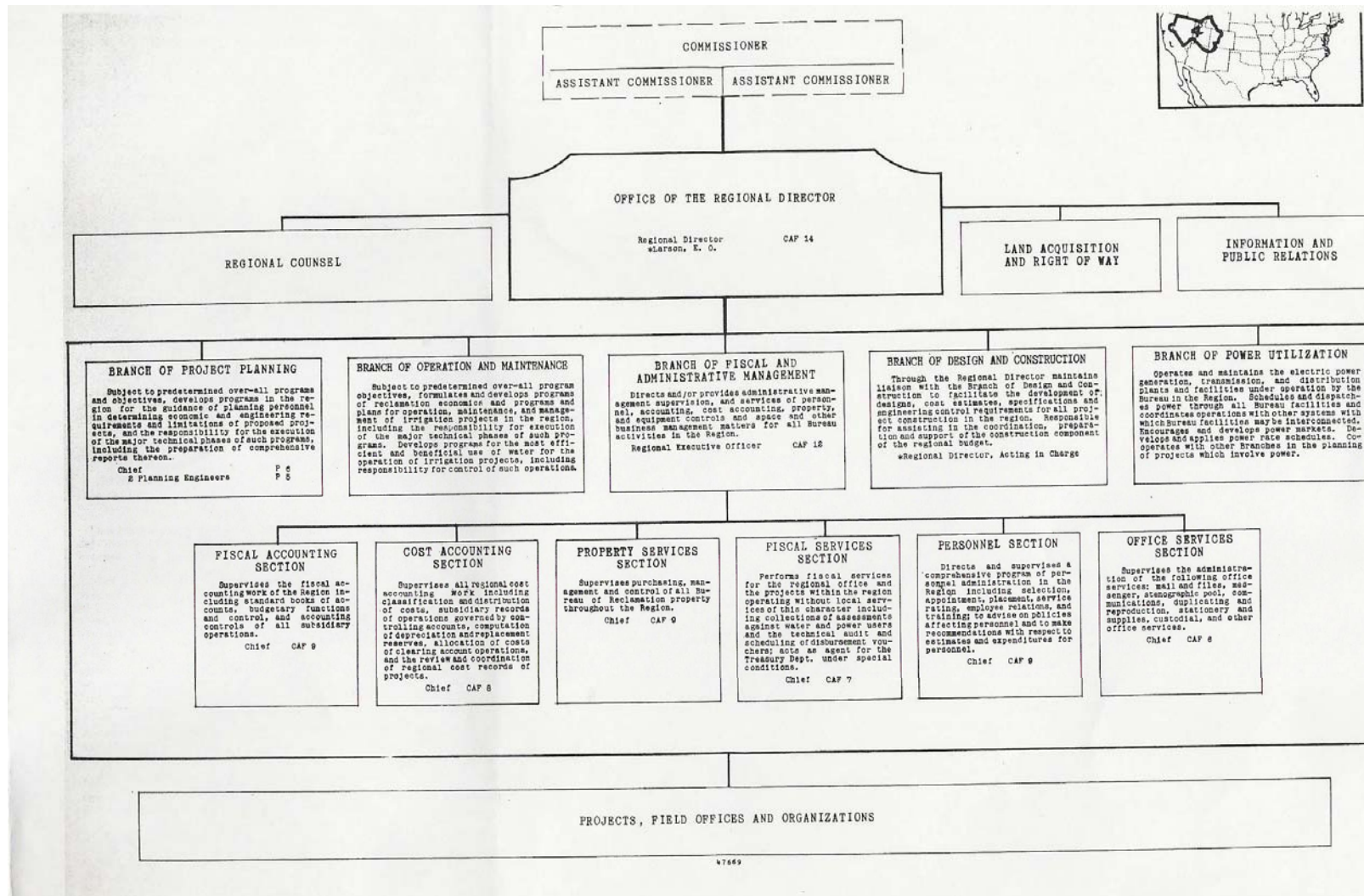
1944 U.S. Bureau of Reclamation Organization Chart A

Source: USBR, 1944

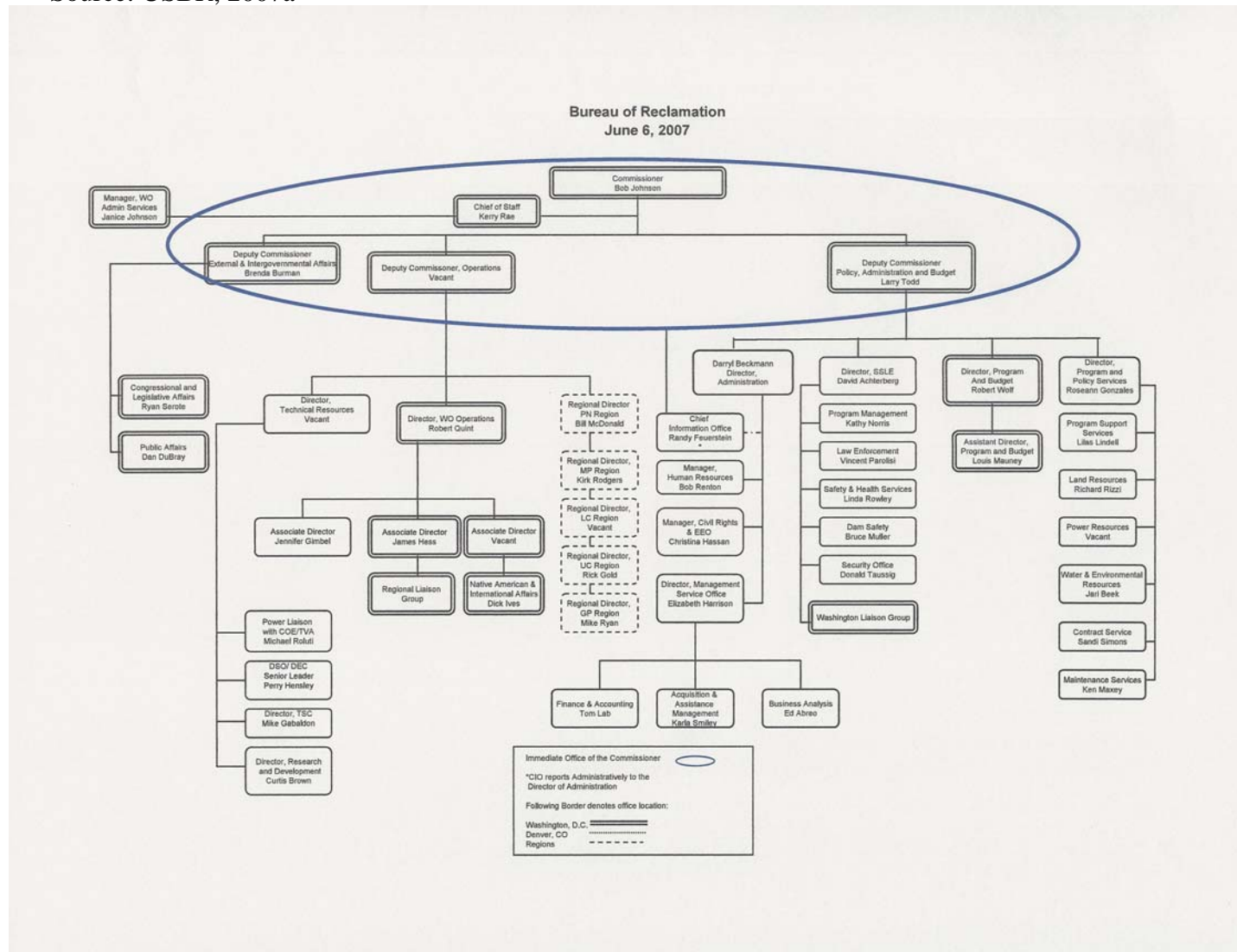


1944 U.S. Bureau of Reclamation Orgaization Chart B

Source: USBR, 1944



Source: USBR, 2007a



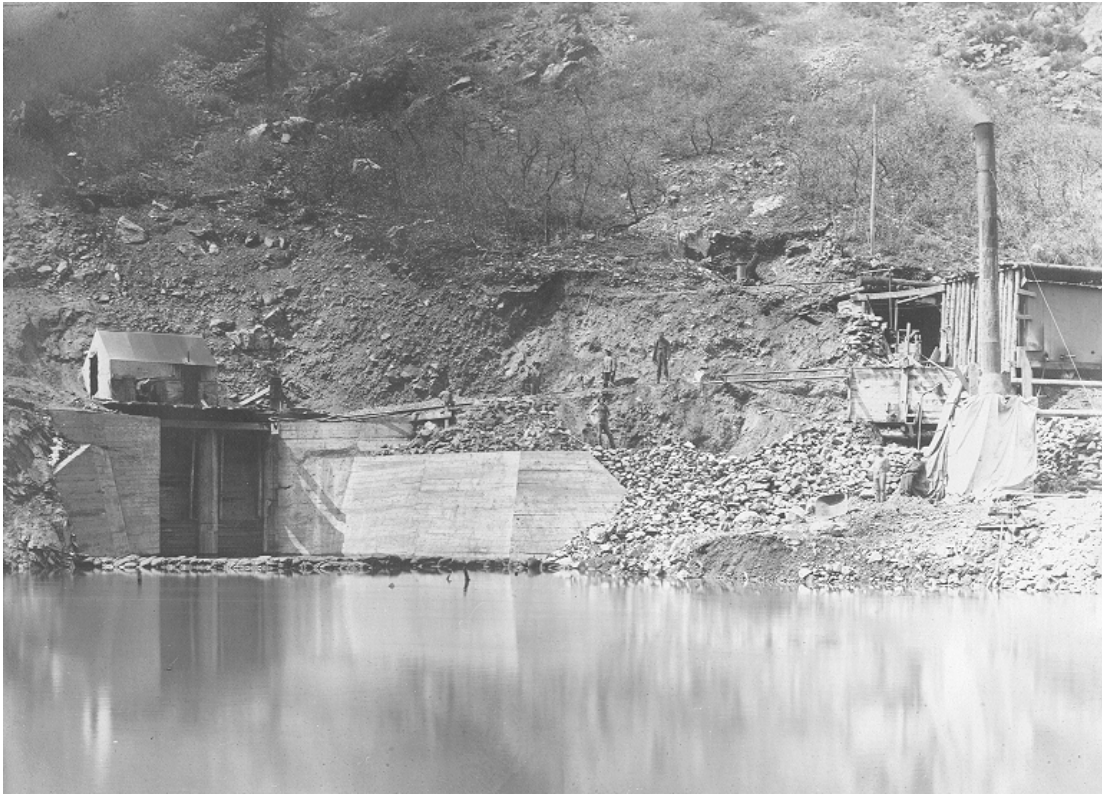
Appendix B – Photos



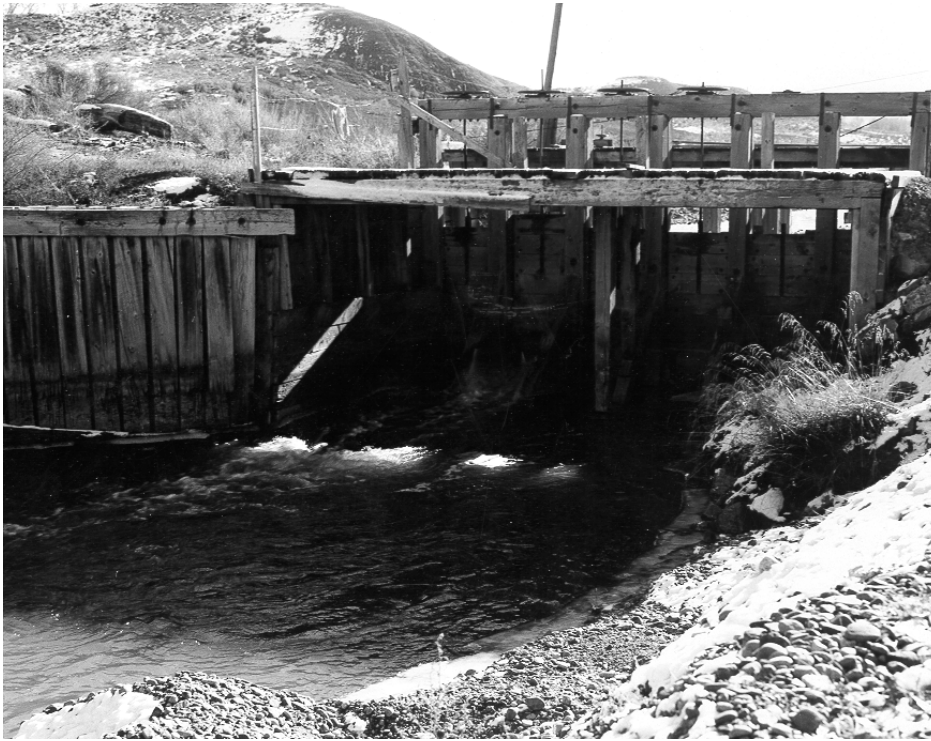
The UVWUA office is one of the best preserved examples of the reclamation presence in the west. It was built by the Bureau for its employees and soon housed the UVWUA office. At over 100 years, the building still serves as Association headquarters. Above: the office in 1908. Below: in 2007. Source: UVWUA and the author.



Gunnison Tunnel construction (above) and tunnel workers (below) early 1900's
Source: UVWUA



The Loutsenizer Canal, early 1900's
Source: UVWUA



A ditchrider checking “tapbox and spillbox diversons” on Spring Creek Lateral, early 1900's,
Source: UVWUA



Gunnison Diversion Dam, 2006
Source: The Author



The East Portal of the Gunnison Tunnel in the Black Canyon, where water enters the tunnel, 2006, Source: The Author



The West Portal, where water exits the Gunnison Tunnel, 2006
Source: Pete Feddersen



Appendix C – Informed Consent

COLORADO STATE UNIVERSITY INFORMED CONSENT TO PARTICIPATE IN A RESEARCH PROJECT

TITLE OF PROJECT: *State and Locality: A Case Study of the Uncompahgre Valley Water Users Association's Management of its Water Commons*

NAME OF PRINCIPAL INVESTIGATOR: *David Freeman, Ph.D.*

NAME OF CO-INVESTIGATOR: *April Pratt*

CONTACT NAME AND PHONE NUMBER FOR QUESTIONS/PROBLEMS: *April Pratt* (contact information), *David Freeman* (contact information)

PURPOSE OF THE RESEARCH: *The purpose of this research effort is to gain a thick and rich description of the Uncompahgre Valley Water Users Association, both in its early years and present-day, and apply the description to two theoretical models of common property resources in order to evaluate their ability to explain aspects of irrigation organization.*

PROCEDURES/METHODS TO BE USED: *As a participant of this research endeavor, you are asked to contribute by being interviewed. Each interview should not exceed two hours per day with no more than two interviews in any given week.*

RISKS INHERENT IN THE PROCEDURES: *There are no known risks to you as a participant. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks. If at any time in the interview you feel uncomfortable or unable to proceed, the interview will be immediately terminated.*

BENEFITS: *There are no known benefits in participating in this research, but we hope this research will enable you to gain a feeling of worthwhile contribution to a general, university-sanctioned research effort, the community's cultural heritage through uncovering and presenting significant historical events in the area, and the improvement of irrigation organization through theory application. Your aid is invaluable!*

CONFIDENTIALITY: *As a participant, your confidentiality is guaranteed. We will not divulge your identity either to other individuals or in our publications. Documents (such as this Consent Form), notes, and any other identifying materials will be held in secure university files until such a time (not before three years after the research has concluded) as they can be destroyed. While it is expected that only the principal investigators will view identity-revealing materials, documents could also be viewed by the Human Subjects Committee and other human protection bodies.*

LIABILITY: *The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.*

Questions about participants' rights may be directed to Celia S. Walker at (970) 491-1563.

Page 1 of 2 Participant's initials _____ Date _____

PARTICIPATION: *Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.*

Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing 2 pages.

Participant name (printed)

Participant signature

Date

Witness to signature (project staff)

Date

Thank you for your participation!

Page 2 of 2 Participant's initials _____ Date _____

References

- Badie, B. 2001. "Sociology of Legitimacy." *The International Encyclopedia of the Social and Behavioral Sciences*. Vol.13. Editors: Neil J. Smelser and Paul B. Baltes. New York: Elsevier.
- Beidleman, Richard G. 1959a. "The Gunnison River Diversion Project, I." *Colorado Magazine*, Vol. 36, pp. 187-201.
- .. 1959b. "Gunnison River Diversion Project, II." *Colorado Magazine*, Vol. 36, pp. 226-285.
- Blanchard, C.J. 1907. "Millions for Moisture." *National Geographic Magazine*. Vol. 18, No. 4 (April): pp. 217-243.
- Bruce, Caroline Ann. 1933. *History of Federal Reclamation and its Accomplishments on the Uncompahgre Project, Colorado*. Master's Thesis: Western State College, Gunnison, Colorado, August 19.
- Burchard, Duncan R. 1982. "The Black Canyon of the Gunnison." *A History of Montrose Colorado 100 Years: 1882-1982 Centennial*. Great Western Printing and Binding: Grand Junction, CO, pp. 114-118.
- Burger, Joanna, Elinor Ostrom, Richard Norgaard, David Policansky, and B. D. Goldstein. 2001. *Protecting the Commons: A Framework for Resource Management in the Americas*. U.S.A.: Island Press.
- Cernea, Michael M. and Ruth Meinzen-Dick. 1992. "Design for Water User Associations: Organizational Characteristics." *Developing and Improving Irrigation and Draining Systems: Selected Papers from World Bank Seminars*. Ed. Guy Le Moigne, Shawki Barghouti, and Lisa Garbus. Washington D.C.: The World Bank.
- Chamber of Commerce of the City of Montrose and the Town of Olathe. 1917. "The Story of Farming Under Irrigation from the Great Gunnison Tunnel," Smith-DeVinny Printing Co., Montrose, Colorado.
- Chapin, L.A. 1930. "Refinancing of Uncompahgre Project Urged." *Denver Post*, February 3, p. 4.
- Clark, David. 1994. *The Uncompahgre Project (2nd Draft*)*. Bureau of Reclamation History Program. Denver, Colorado. Research on Historic Reclamation Projects. Wm. Joe Simonds, ed. Obtained at Denver Public Library. *Communication with Bureau of Reclamation Historian, Brit Storey, revealed there is no further draft, making this the final version.
- Clemens, Caitlin. 2002a. "UVWUA Marks 100 Years with Community Party."

- Montrose Daily Press*, May 29. Obtained online: <http://montrosepress.com>.
- , 2002b. "Bureau of Reclamation Kicks off Celebration in Montrose." *Montrose Daily Press*, June 7. Obtained online: <http://montrosepress.com>.
- , 2002c. "100 Years Strong." *Montrose Daily Press*, June 7. Obtained online: <http://montrosepress.com>.
- Colorado Department of Natural Resources. 2005. *NAIP Imagery*. Obtained from Heather Hicks, former GIS Coordinator.
- Creswell, John W. 1998. *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*. U.S.A.: Sage Publications.
- Currie, G. 1968. "Methodological Individualism: Philosophical Aspects." *International Encyclopedia of the Social Sciences*. Vol. 16, pp. 9755-9760. Editor: David L. Sills. U.S.A.: The Macmillan Company and the Free Press.
- Denver Post*. 1904. "To Divert the Gunnison by Tunnel," September 25, p. 2.
- , 1909a. "Completion Brings Joy," July 7. Reprinted in the *Colorado Prospector*, September 1989, pp. 1-8.
- , 1909b. "Wm. H. Taft Opens Tunnel that Will Make Desert Bloom," September 23. Reprinted in the *Colorado Prospector*, September 1989, pp. 1-8.
- , 1911. "Ditch Owners to Hold Conference," February 19, p. 14.
- , 1924. "Inefficiency Charges Hurlled at Reclamation Service in Uncompahgre Tangle," January 22, 1924, p. 12.
- , 1927. "Uncompahgre Water Users Settle Long Dispute on Rates," October 2, p. 2.
- , 1929. "\$195,882 Paid on Uncompahgre Water Project," January 31, p. 13.
- , 1930a. "State Farmers Demand Relief from Reclamation Assessments," February 5, p. 19.
- , 1930b. "Relief Plans Outlined for Uncompahgre," February 26, p. 4.
- , 1930c. "Uncompahgre Relief Plan Wins Approval," March 20, p. 1.
- , 1930d. "Water Assured in Uncompahgre Irrigation Area," April 14, p. 4.
- , 1930e. "Settlement of Relief Issues Aids Uncompahgre Farmers," April 21, p.

14.

----- . 1930f. "Uncompahgre's Settlers Seek Governor's Aid," September 24, p. 7.

----- . 1930g. "Uncompahgre Plan of Mortgage Scored at Meeting in Delta," September 26, p. 42.

----- . 1933. "State Reclamation Plan Gets \$2,725,000," November 29, p. 1.

Denver Republican. 1900. "First Trip through Black Canyon of the Gunnison: Colorado Men Brave Dangers and Hardships between the Frowning Walls of Rock," December 9, p. 16.

Dolson, John. 1982. *The Black Canyon of the Gunnison: A Story in Time*. Boulder, Colorado: Pruett Publishing Company.

Engineering News. 1905a. "Gunnison Tunnel Caved In," June 8, p. 606.

----- . 1905b. "Cave-In of the Gunnison Tunnel," Vol. LIII, No. 26. June 29, pp. 680-681.

Folke, Carl, Thomas Hahn, Per Olsson, and Jon Norberg. 2005. "Adaptive Governance of Social-Ecological Systems." *Annual Review of Environmental Resources*. Vol. 30 (July): pp. 441-73.

Foster, L.J. 1921. "Uncompahgre River Flood, June 1921." *Reclamation Record*. October, pp. 473-475.

Freeman, David. 1989. *Local Organizations for Social Development: Concepts and Cases of Irrigation Organization*. Boulder, CO: Westview Press.

----- . 1992. *Choice Against Choice: Constructing a Policy-Assessing Sociology for Social Development*. Niwot, CO: University Press of Colorado.

Grand Junction Daily Sentinel. 1924a. "Fact Finding Board to Meet in Salt Lake," January 9, p. 5.

----- . 1924b. "Reclamation Hearing on in Salt Lake," January 19, p. 1.

Griffiths, Thomas M. 1984. *San Juan Country*. Boulder, Colorado: Pruett Publishing Company.

Hanna, Susan, Carl Folke, and Karl-Goran Maler (eds). 1996. *Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment*. U.S.A.: Island Press.

- Hardin, Garrett. 1968. "The Tragedy of the Commons." *Science*. Vol. 162, No. 3859 (Dec. 13): pp. 1243-1248.
- Hayes, Albert E. 1930. "Uncompahgre Settlers Urge Rescinding of Joint Liability." *Denver Post*, February 25, p. 8.
- Hearings before the Committee on Irrigation of Arid Lands of the House of Representatives*. 1909. Washington: Government Printing Office, Feb. 1-11.
- , 1930. Washington: Government Printing Office, March 6.
- Huber, Thomas P. 1997. *Colorado Byways: A Guide through Scenic and Historic Landscapes*. Niwot, Colorado: University Press of Colorado.
- Jerman, Donald. 1938. "Construction of the Taylor Park Dam Uncompahgre Project, Colorado." *Reclamation Era*. May: pp. 84-89.
- Kennedy, Erica Lewis. 2007. "Farm to Plate: Montrose Agriculture Comes Full Circle." *Destination Montrose*. Fall/Winter: pp. 32-48.
- Key Informant Interview. 2004a. July 12.
- , 2004b. July 13.
- , 2004c. July 14.
- , 2004d. July 15.
- , 2004e. August 2.
- , 2006. February 8.
- Lepper, Troy and David M. Freeman. 2010. "Comparing Forms of Common Property Resources and Collective Goods Organizations Operating Water Markets in the Colorado Lower Arkansas River Basin." *American Journal of Economics and Sociology*. Dec.
- Levy, Benjamin. 1968. *Curecanti Recreation Area Colorado: Historical Background Study*. U.S. Department of the Interior, National Park Service, Division of History, Office of Archeology and Historic Preservation, October 15. Obtained at Denver Public Library.
- Ludlow, Louis. 1923. "Bungling of Uncompahgre Work Laid to Reclamation Service Under A.P. Davis." *Denver Post*. Dec. 2, p. 7.
- Marshall, Muriel. 1998. *Uncompahgre: A Guide to the Uncompahgre Plateau*. Ouray, Colorado: Western Reflections, Inc.

McCay, Bonnie and James Acheson, (eds). 1987. *The Question of the Commons: The Culture and Ecologies of Communal Resources*. Tucson: University of Arizona Press.

McCay, Bonnie J. 1996. "Common and Private Concerns." *Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment*. Ed. Susan Hanna, Carl Folke, and Karl-Goran Maler. U.S.A.: Island Press.

McKean, Margaret A. 2000. "Common Property: What is it, What is it Good for, and What Makes it Work?" *People and Forests: Communities, Institutions, and Governance*. Ed. Clark C. Gibson, Margaret A. McKean, and Elinor Ostrom. U.S.A.: Massachusetts Institute of Technology Press.

Montrose Daily Press. 1923a. "7 of Projects are Failures; Congress Must Provide Relief." November 21, p. 1. Reprinted from *Salt Lake Tribune* – Date Unknown.

----- . 1923b. "Stephan Urges Strong Action in Project Aid." November 23, p. 4.

----- . 1923c. "Mass Meeting at Olathe Saturday for Waterusers." November 26, p. 1.

----- . 1923d. "Moynihan is Head of Project Case; Catlin Will Assist." November 30, p. 1.

----- . 1923e. "Report on Project Conclusions are Favorable to Water Users," December 3, p. 1.

----- . 1923f. "Tax Reduction Must Come First, Projects Insolvent and Impossible to Pay." December 6, p. 1.

----- . 1923g. "Taylor Assures Local Men that He Will Do All Possible for Relief of the Waterusers," December 26, p. 1.

----- . 1924a. "Project Will be Represented at Salt Lake Meeting by its Two Official Representatives," January 12, p. 1.

----- . 1924b. "Big Meeting Sets Stamp of Disapproval Upon Attempt A.P. Davis to Discredit Catlin," January 15, pp. 1, 3.

----- . 1924c. "No Action on Water Rates for 1924; Directors Want Decrease in Excess Costs," January 16, p. 1, 6.

----- . 1924d. "Ask Settlement on First Estimates or Take Back Project," January 21, 1924, p. 1.

----- . 1924e. "Waterusers Ratify Action of Board in Retaining Moynihan and Catlin

- as Special Counsel,” February 6, pp. 1, 3.
- . 1924f. “Fact Finding Commission Convinced that Government Should Get Out of the Retail Business and Deal with the Projects as Individual Local Units,” February 14, p. 1.
- . 1924g. “Republicans Give Endorsement to C.J. Moynihan,” March 7, p. 1.
- . 1924h. “Excess Charges to Be Cut Off: Fact Finders Make Recommendation that Payment of Original Cost of Project be Made by the Waterusers,” March 22, pp. 1-2.
- . 1924i. “M.&O. Charges to be Wiped Out in Some Instances,” March 24, pp. 1, 5.
- . 1924j. “27 Millions to be Wiped Off Project Costs: Fact Finding Experts Advocate Reclassification Uncompahgre Lands; \$70 and Acre is Maximum,” April 11, pp. 1, 6.
- . 1924k. “We are Not Discouraged,” April 11, p. 1.
- . 1926. “Report of Board of Review, Adjustments Recommends Uncompahgre Project Acre Costs be Placed at \$52.98,” January 19, pp. 1, 5.
- . 1948. “Water Users Urged to Attend Contract Vote,” December 5, p. 1.
- . 1962. “Montrose County Leads Area in Farm Production,” July 2, p. 1.
- . 1978. “Valley Prospers with Uncompahgre Project.” Special Issue, May 11.
- Montrose Enterprise*. 1900. “Gunnison Tunnel,” November 17, p. 1.
- . 1901. “Uncle Sam to Help,” April 27, p. 1.
- . 1902a. “Governments Confers with the Board of Control on the Tunnel,” October 23, p. 1.
- . 1902b. “Bell’s Bill O.K.: Work in Congress Helps Irrigation,” December 11, p. 1.
- . 1903. “A.L. Fellows Will Start the Work,” March 26, p. 1.
- Montrose Title and Realty Company. 1909. “The Gunnison Tunnel is Done,” Montrose, Colorado. Obtained at Denver Public Library.
- Moynihan, Charles. 1924a. “Uncompahgre Project Branded Giant Farce.” *The Denver Post*, January 13, p. 14.

- , 1924b. "U.S. Files Scathingly Indict Bureaucracy of Uncompahgre Project and Reveal Lies." *The Denver Post*, January 14, p. 14.
- , 1924c. "Uncompahgre Project Farce is Forcing Ruin among Farmers." *The Denver Post*, January 15, p. 8.
- , 1924d. "Moynihan Sees Hope in Report." *Montrose Daily Press*, April 14, p. 1.
- Newlands Act (Reclamation Act) of 1902. *United States Statutes at Large – 57th Congress – 1st Session*. Potomac Publishing Company, Inc., 2003, pp. 388-390. Obtained online through Lexis Nexis Congressional: www.lexisnexus.com.
- New Reclamation Era*. 1925a. "The Board of Survey and Adjustments," March, pp. 33-34.
- , 1925b. "Conference in Chicago with Railroad Officials," April, pp. 49-50.
- , 1925c. "Problems of Federal Reclamation," June, pp. 88-89.
- NPS (National Park Service). 2007. Information Obtained Online, Oct. 26: http://www.nps.gov/cure/historyculture/aspinall_unit.htm.
- Oakerson, Ronald J. 1992. "Analyzing the Commons: A Framework." *Making the Commons Work: Theory, Practice, and Policy*. Ed. Daniel W. Bromley. U.S.A.: Institute for Contemporary Studies Press.
- O'Hare, Kati. 2009. "100 Years in the Making." *Montrose Daily Press*, September 27.
- Ostrom, Elinor. 1990. *Governing the Commons: the Evolution of Institutions for Collective Action*. U.S.A.: Cambridge University Press.
- , 1992. *Crafting Institutions for self-Governing Irrigation Systems*. U.S.A.: Institute for Contemporary Studies.
- Passenger Department of the Denver and Rio Grand Railroad. 1906. "A Permanent Water Supply Provided by the United States Government," November. Obtained from Denver Public Library.
- Pisani, Donald J. 1989. "The Irrigation District and the Federal Relationship: Neglected Aspects of Water History in the Twentieth Century." *The Twentieth-Century West: Historical Interpretations*. Ed. Gerald D. Nash and Richard W. Etulain. U.S.A.: University of New Mexico Press, pp. 257-292.
- , 2002. *Water and Government: The Reclamation Bureau, National Water Policy, and the West, 1902-1935*. University of California Press, U.S.A.

- Reclamation Era*. 1935. "Drainage on Uncompahgre," September, p. 176.
- Reclamation Record*. 1917. "Report of the Central Board of Review on the Uncompahgre Valley Project, Colorado," March, pp. 127-132.
- . 1918a. "Water Users Want United States to Keep Hold of Great Project: Splendid Meeting at Olathe a Love Feast; New Director Elected; Davis Given Ovation, Also Pyle; Spirit of Cooperation Manifest," March, pp. 118-120.
- . 1918b. "Grand Valley and Uncompahgre Valley Openings," May, p. 208.
- Rodgers, Andrew D. 1966a. Unpublished Manuscript. *Federal Reclamation's Pioneer Period: A Biographical Study of its Origins, Organization, and Early Work of its Engineer Corps*. Andrew D. Rodgers Collection, File #1935, Doc. Box 11. American Heritage Center, University of Wyoming, Laramie.
- . 1966b. Personal Notes on the Gunnison Tunnel. Andrew D. Rodgers Collection, File #1935, Doc. Box 5, Folder #1. American Heritage Center, University of Wyoming, Laramie.
- Rowley, William D. 2006. *The Bureau of Reclamation: Origins and Growth to 1945, Volume I*. Bureau of Reclamation, U.S. Department of the Interior, Denver, Colorado.
- Session Laws of Colorado. 1901. 13th Session, pp. 369-374.
- Shea, James. 2005. "Uncompahgre Valley Water Users Association Continues to Increase Storage." *Montrose Daily Press*, November 3. Obtained online: <http://montrosepress.com>.
- Steinel, Alvin T. 1926. *History of Agriculture in Colorado*. State Agricultural College, Ft. Collins, CO.
- Storey, Brit.** 2007. Personal Communication. Interview, Fall.
- Thompson, Jesse R. 1956. "A Lifetime of Reclamation." *Reclamation Era*, November, pp. 101-102.
- Tri-County Water. 2007. Information Obtained Online, Oct. 26: http://www.tricountywater.org/about/list.php?dir_id=0012.
- USBR (United States Bureau of Reclamation). 1901-1912a. *Project History*:

** Brit Storey is the senior historian of the Bureau of Reclamation in Denver, Colorado and has been a part of the bureau for many years. Through his aid, the author was able to reconstruct organization charts for the Uncompahgre Project linked with the U.S. Bureau of Reclamation based on his experience – no charts previously existed with this information.

- Uncompahgre Valley Project, Colorado*. Volume I. Obtained through the Uncompahgre Valley Water Users' Association.
- , 1901-1912b. *Project History: Uncompahgre Valley Project, Colorado*. Volume III. Obtained through the Uncompahgre Valley Water Users' Association.
- , 1903. *First Annual Report of the Reclamation Service*. Washington: Government Printing Office.
- , 1944. *Organization Charts*. "Creation of Regions in Reclamation." Bureau of Reclamation call number: JK 870.R3 A922 1944. Obtained at the Bureau of Reclamation offices, Denver, Colorado. Donated by Theodore W. Mermel.
- , 1948. *Amendatory Contract between the United States and the Uncompahgre Valley Water Users' Association*. Dec. 13. Obtained from the UVWUA.
- , 1972. *Uncompahgre Project, Colorado: Special Report on Need for Improvement and Extension*. U.S. Department of the Interior, Bureau of Reclamation, Region 4. January.
- , 1982. *Project Data Book: Region Revision*. "Uncompahgre Project," October. Obtained at the USBR Library, Denver, Colorado.
- , 1997. *Bureau of Reclamation Historical Organizational Structure*. Denver, Colorado: Bureau of Reclamation History Program.
- , 2006a. Information obtained online, August 15: <http://www.usbr.gov/dataweb/html/uncomp.html>.
- , 2006b. Information obtained online, August 15: <http://www.usbr.gov/dataweb/html/ucuncprjdata.html>.
- , 2006c. Information obtained online, August 16: <http://www.usbr.gov/dataweb/html/ucuncwatdata.html>
- , 2007a. Information obtained online, June 6: http://www.usbr.gov/main/images/br_org_chart.pdf
- , 2007b. Information obtained online, September 28: <http://www.usbr.gov/dataweb/html/ucuncengdata.html>.
- , 2007c. Information Obtained Online, Oct. 26: <http://www.usbr.gov/uc/feature/crsp/index.html>.
- USDI (United States Department of the Interior). 1972. *Federal Reclamation and Related Laws Annotated, Volume I*. U.S. Government Printing Office: Washington D.C.

USGS (United States Geological Survey). 1904. *Proceedings of the First Conference of Engineers of the Reclamation Service*. Compiled by F.H. Newell. U.S. Government Printing Office: Washington, D.C.

UVWUA (Uncompahgre Valley Water Users' Association). 1903a. Minutes from the first meeting of the Uncompahgre Valley Water Users' Association, May 5.

-----, 1903b. Minutes from UVWUA Directors meeting, May 11.

-----, 1903c. Minutes from UVWUA Directors meeting, July 25.

-----, 1904a. Minutes from UVWUA Directors meeting, March 22.

-----, 1904b. Minutes from UVWUA Directors meeting, June 27.

-----, 1906. Minutes from UVWUA Annual Stockholders meeting, Feb. 6.

-----, 1908a. Minutes from UVWUA Annual Stockholders meeting, Feb. 4.

-----, 1908b. Minutes from UVWUA Special meeting of the Stockholders, Nov. 30.

-----, 1909. Minutes from UVWUA Annual Stockholders meeting, Feb. 3.

-----, 1910. Minutes from UVWUA Annual Stockholders meeting, Feb.1.

-----, 1913a. Minutes from UVWUA Directors meeting, May 29.

-----, 1913b. Minutes from UVWUA Directors meeting, July 22.

-----, 1913c. Minutes from UVWUA Directors meeting, September 8.

-----, 1914a. Minutes from UVWUA Annual Stockholders meeting, Feb. 3.

-----, 1914b. Minutes from UVWUA Directors meeting, May 20.

-----, 1914c. Minutes from UVWUA Directors meeting, July 23.

-----, 1915a. Minutes from UVWUA Directors meeting, Feb. 1.

-----, 1915b. Minutes from UVWUA Annual Stockholders meeting, Feb. 2.

-----, 1915c. Minutes from UVWUA Directors meeting, Feb. 27.

-----, 1915d. Minutes from UVWUA Special Stockholders meeting, March 1.

- , 1915e. Minutes from UVWUA Special Stockholders meeting, Apr. 3.
- , 1915f. Minutes from UVWUA Director meeting, May 4.
- , 1915g. Minutes from UVWUA Director meeting, June 1.
- , 1915h. Minutes from UVWUA Directors meeting, July 6.
- , 1915i. Minutes from UVWUA Directors meeting, Aug. 3.
- , 1917. Minutes from UVWUA Special Stockholders meeting, Apr. 21.
- , 1918a. Minutes from UVWUA Stockholders meeting, Feb. 5.
- , 1918b. Minutes from UVWUA Special Stockholders meeting, May 4.
- , 1921. Minutes from UVWUA Stockholders meeting, Feb. 1.
- , 1923a. Minutes from UVWUA Stockholders meeting, Feb. 6.
- , 1923b. UVWUA Correspondence, May 19.
- , 1924. Minutes from UVWUA Stockholders meeting, Feb. 5.
- , 1925. Minutes from UVWUA Stockholders meeting, Feb. 3.
- , 1926. Minutes from UVWUA Stockholder meeting, Feb. 2.
- , 1927a. Minutes from UVWUA Stockholder meeting, Feb. 1.
- , 1927b. Minutes from UVWUA Special Stockholder meeting, Apr. 5.
- , 1929. Minutes from UVWUA Stockholder meeting, Feb. 5.
- , 1930a. Minutes from UVWUA Stockholder meeting, Feb. 4.
- , 1930b. UVWUA Correspondence, May 7.
- , 1931a. Minutes from UVWUA Stockholder meeting, Feb. 4.
- , 1931b. UVWUA Correspondence, March 13.
- , 1931c. Minutes from UVWUA Special Stockholder meeting, Aug. 4.
- , 1932. Minutes from UVWUA Stockholder meeting, Feb. 2.

- , 1933. Minutes from UVWUA Stockholder meeting, Feb. 7.
- , 1934. Minutes from UVWUA Stockholder meeting, Feb. 6.
- , 1937. Minutes from UVWUA Stockholder meeting, Feb. 2.
- , 1938. Minutes from UVWUA Stockholder meeting, Feb. 1.
- , 1939. Minutes from UVWUA Stockholder meeting, Feb. 7.
- , 1940. Minutes from UVWUA Stockholder meeting, Feb. 6.
- , 1941. Minutes from UVWUA Stockholder meeting, Feb. 4.
- , 1942. Minutes from UVUWA Stockholder meeting, Feb. 3.
- , 1943. Minutes from UVWUA Stockholder meeting, Feb. 2.
- , 1944. Minutes from UVWUA Stockholder meeting, Feb. 1.
- , 1945. Minutes from UVWUA Stockholder meeting, Feb. 6.
- , 1946a. Minutes from UVWUA Stockholder meeting, Feb. 3,
- , 1946b. UVWUA Correspondence.
- , 1947. Minutes from UVWUA Stockholder meeting, Feb. 4.
- , 1948a. Minutes from UVWUA Stockholder meeting, 3.
- , 1948b. Minutes from UVWUA Special Stockholder meeting, Dec. 2.
- , 1954. Minutes from UVUWA Stockholder meeting, Feb. 2.
- , 1958. Minutes from UVWUA Stockholders meeting, Feb. 4.
- , 1959. Minutes from UVWUA Stockholder meeting, Feb. 3.
- , 1961. Minutes from UVWUA Stockholders meeting, Feb. 7.

Van Gieson, G. J. 1947. "Holing Through in 1909: The Story of the Gunnison – Reclamation's First Major Tunnel." *Reclamation Era*, pp. 173-182.

Weber, Max. 1947. *The Theory of Social and Economic Organization*. Translated by A.M. Henderson and Talcott Parsons. Ed. Talcott Parsons. New York: Oxford University Press.

-----, 1964. *The Theory of Social and Economic Organization*. Translated by
A.M. Henderson and Talcott Parsons. Ed. Talcott Parsons. New York: The Free Press.