

# Grand Valley Water Users Association

## Government Highline Canal

### Water Management Plan

### Volume I

June 2017

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## Related Documents

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The following documents are referenced throughout the Water Management Plan. They are intended to serve as complimentary documents to address certain aspects of canal planning and management.

- Grand Valley Water Users' Association Operations Manual – Blythe Group Co. – Jun 2013
- Grand Valley Power Plant Rebuild Proposal – Sorenson Engineering – Apr 2016

AND INCLUDING:

Grand Valley Hydro Project 75% Design Report – Sorenson Engineering – Dec. 2016

AND INCLUDING:

Grand Valley Hydro Project Supporting Design Report – Sorenson Engineering – Dec. 2016

- Dam and Canyon Facilities Master Plan (Phase 1) - SGM – Aug. 2016



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## 2. Executive Summary

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### 1 Executive Summary

The Grand Valley Water Users Association (GVWUA) has updated our 2012 Water Management Plan. The 2012 plan was a basic plan to fulfill the basic requirements of Section 210(b) of the Reclamation Reform Act. The GVWUA came under new management and wanted to develop a more comprehensive and detailed Water Management Plan that will be helpful in implementing full scale water stewardship measures. Within the 2012 Water Management Plan a number of goals and objectives were developed that GVWUA would like to move forward with. Many of these goals and objectives require additional investigation and assessments that were not prepared in the 2012 Water Management Plan. The update allowed the Association to prepare a conditional assessment of the canal segments, identify priority projects, conduct a benefits assessment, ascertain environmental concerns, determine cost associated with the projects and consider a strategic funding plan to implement the priority projects. It will also allow the Association to honor commitments made in the Colorado River Cooperative Agreement (CRCA).

The Grand Valley Water Users' Association has several reasons for updating its Water Management Plan. Among the primary reasons are the ever-changing demographics and expectations in an urbanizing area. As well as the increased need for basin-wide water conservation, primarily due to increasing pressure on water supplied by the Colorado River. The increased pressure requires that the Association develop strategies to responsibly manage their decreed water rights while providing reliable irrigation water to its users. These strategies must account for the ongoing demographic changes, with contingencies in place for potential drought and climate changes. This plan will satisfy the Reclamation Reform Act by updating and refining our plan.

One of the major goals of the Association is to become an even better steward of the water they manage. The Association must address the continual need for improvements to the Grand Valley Project (the Project) while acknowledging and understanding the benefits the Project provides to other resource and economic communities. By developing a comprehensive and flexible Water Management Plan the Association can protect its interests and those of Reclamation while expanding the number of water users who benefit from improvements in the facilities and operations of the Project. Such benefits may be of sufficient magnitude that they warrant investment by those outside Reclamation and the Association. A well-developed Water Management Plan, properly prioritized and tied to funding needs, will allow the Association to sensibly pursue the most cost effective improvements to the system. With a plan in-hand, the ability to understand opportunities for leveraging the resources of the Association will be enhanced.

At the direction of the Association Board of Directors, recent changes in management within the Association have given new life to the goals and objectives that were set forth in the 2012 Water Management Plan. The Association also realizes that an evolving water, social, environmental, and economic operating climate necessitates better and more intensive planning for the future of the water delivery system and its administration. More accurate budgeting and assessment forecasting has become ever more important due to the changing nature of Association obligations.

# 1. Executive Summary

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Planning for long-term needs, understanding the complex issues surrounding the Grand Valley Project, and complying with Reclamation's required repairs and maintenance necessitates:

- Establishing better mapping and recording
- Real and accurate cost estimates
- Purposes and potential cost/benefit analysis of the intended repairs and replacements
- Pursuit of alternative replacement, repair, and upgrade methods
- Prioritization of the most valuable projects to the system which will have continued benefits to Reclamation and to the water users, and
- Prioritization of those projects and repairs so that funding can be planned for and obtained.

It is an established fact that improved canal facilities, administration, and operations can lead to maximizing water availability for all the Grand Valley Project partners' and beneficiaries. Maximizing effectiveness, increasing efficiency, and improving water stewardship have long-term positive benefits to the environment, recreation and irrigators. Such benefits extend to the economy and general social/civic well-being of the entire Valley, and indeed to the entire Colorado River and those who rely upon it. To do this GVVUA needs a plan that is a living, breathing document. A document that does not sit on a shelf until federal mandates require it to be opened and updated, but actually informs the decision making of the Association. GVVUA is taking up this challenge now to bring to fruition in a rational, cost effective manner, the goals and objectives of the 2012 Water Management Plan.

GVVUA wants to continue their progress of incorporating the rights and responsibilities of the Association, the goals and objectives of Reclamation, the Colorado River Cooperative Agreement, other contractual and policy obligations, and the goals of others who may be potential beneficiaries of improving Association water stewardship. An updated and improved Water Management Plan allows the Association to be planners instead of firefighters only dealing with emergencies as they arise. The ability to investigate the feasibility and merit of individual projects and to seek out potential funding sources and then act upon those actions will ensure the viability of the Grand Valley Project for another 100 years.

## 2. Grand Valley Water Users Assn

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### 2 Grand Valley Water Users Association

#### 2.1 Association Overview

The Grand Valley Water Users Association is the managing entity for a portion of the federally owned Grand Valley Project. These Grand Valley Project facilities include the Grand Valley Diversion Dam, also known as the Roller Dam, on the Colorado River in DeBeque Canyon, the 55- mile-long Government Highline Canal, 150 miles of project-operated laterals, 100 miles of drainage ditches and a hydroelectric power plant. In recent years, approximately 130 miles of the laterals have been re-constructed into pressure piped laterals.

GVWUA first delivered water in 1915 to Reclamation's Grand Valley Project. It has since furnished a full supply of irrigation water to approximately 24,000 irrigated acres under the Government Highline Canal and 15,000 irrigated acres under the Mesa County, Palisade, and Orchard Mesa Irrigation Districts and diverts the water for the Grand Valley Power Plant year round.

All water users within the Grand Valley Project will benefit from better management and maintenance of the Dam and the Highline Canal. Local irrigation districts such Orchard Mesa, Palisade and Mesa County Irrigation Districts will see additional benefits as GVWUA improves and maintains critical delivery systems that deliver water to their facilities through the Roller Dam and the upper canyon portions of the Highline canal.

Other irrigation water providers located in the Grand Valley include:

- Grand Valley Irrigation Company
- Mesa County Irrigation District\*
- Orchard Mesa Irrigation District\*
- Palisade Irrigation District\*
- Redlands Water & Power Company

\*The water supply for these irrigation companies is part of the Grand Valley Project where diversion occurs at the Roller Dam in Cameo, CO and the Government Highline Canal is used for the initial or full transportation of the water



## 2. Grand Valley Water Users Association

Figure 2.1.1 illustrates the areas served by the local irrigation companies.

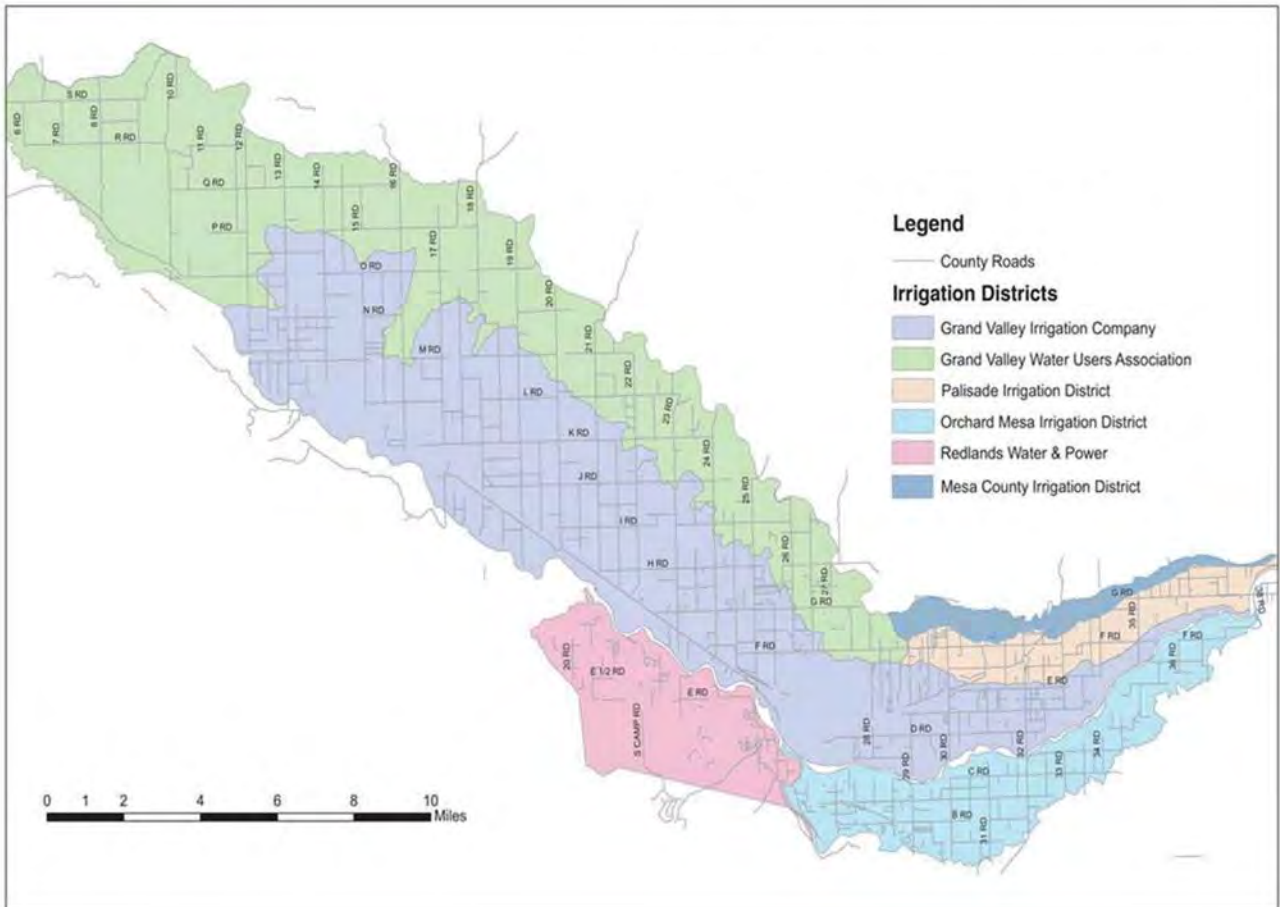


Figure 2.1.1 Map of Areas Served by Grand Valley Irrigation Projects

## 2. Grand Valley Water Users Association

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Figure 2.1.2 shows the GVVUA service area overlaid on satellite imagery . The service area is primarily rural and serves the area below the Government Highline Canal and above the Grand Valley Canal (Grand Valley Irrigation Company).



## 2. Grand Valley Water Users Association



Figure 2.1.2 - Grand Valley Water Users Association Service Area



## 2. Grand Valley Water Users Association

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### 2.2 Contractual History of the Association

The Grand Valley Water Users Association (GVWUA) was incorporated in 1905. The incorporation was authorized by the State of Colorado under § 7-121-121 to 137 and § 7-33-101 to 107. The Grand Valley Project gained presidential approval on January 5, 1911. Authorization for construction came on September 23, 1912, and the first irrigation water was provided on June 29, 1915, at which time the entire project was less than 60 percent completed. The Articles of Incorporation include the landowners' subscription for stock based upon acreage owned. GVWUA's purpose is "to acquire, furnish, provide for and distribute to the lands of the shareholders of GVWUA as herein provided, and adequate supply of water for the irrigation thereof; to divert, store, develop, pump, carry and distribute water for irrigation and all other beneficial uses, deriving the same from all available sources..."

The GVWUA paid out their repayment obligation, under Contract No. IIr-644, dated January 27, 1945, to the United States in 1973.

The Grand Valley Project facilities include the Grand Valley Diversion Dam, also known as the Roller Dam, on the Colorado River in De Beque Canyon, the 55-mile-long Government Highline Canal, 150 miles of project-operated laterals, 100 miles of drainage ditches and a hydroelectric power plant. In recent years, approximately 130 miles of the laterals have been re-constructed into pressure piped laterals.

Supplemental Contract No. II4-644, dated April 27, 1964, allows GVWUA to make equitable assessments against stock of GVWUA using project water on lots or small acres (under 3.0). This supplemental contract also reduced the contractual obligation by \$109,158.19.

Contract No. 6-07-40-R0270 (Salinity Contract), dated April 10, 1986 between the United States and GVWUA, is for the rehabilitation, operation and maintenance of distribution facilities to reduce salinity inflow to the Colorado River. This contract limits the irrigable acreage for the Grand Valley Project to 23,341 acres to minimize the valley salinity flow to the Colorado River. The United States reimburses GVWUA's costs for operating the project facilities. This was authorized under P.L. 98-469, dated October 30, 1984. The Grand Valley Project lands were classified by the government in order to identify parcels based upon various criteria, such as soil type, topography, drainage, etc. with Class 1 being the land type to produce the highest crop yield. Lands classified as Class 6 may not receive project water; also, under this Salinity Contract lands may not be reclassified to increase the irrigable acreage within the Grand Valley Project.

A Memorandum of Understanding (MOU) No. 2-FC-40-6060, dated January 31, 2002, is in place between the United States Department of Interior, Bureau of Reclamation (Reclamation) and the GVWUA. The MOU is a commitment to complete the Grand Valley Water Management plan improvements. These improvements have been completed and GVWUA is responsible for the operation and maintenance of the improvements.

## 2. Grand Valley Water Users Association

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In 1931, a Lease of Power Privilege (LOPP), Contract No. 0-07-40-P0180, was executed between the GVVUA, Public Service Company of Colorado (Xcel Energy) and Reclamation. This contract was amended in 1960 to include the Orchard Mesa Irrigation District (District) as a party to this contract. Due to Xcel Energy closing their coal operated Cameo plant in DeBeque canyon in Colorado, Xcel Energy would no longer remotely operate the Grand Valley Powerplant located in Palisade. With Reclamation's approval, Xcel Energy assigned their responsibilities, under this LOPP, to the GVVUA and the District. Parties to the executed amendment, dated February 17, 2011, are the GVVUA, Orchard Mesa Irrigation District and Reclamation. The parties to the amended contract agreed to transfer the Renewable Energy Credits (RECs) to Xcel Energy. On August 21, 2012, Reclamation's regional director signed a letter transferring the RECs to Xcel Energy.

Appendix C contains copies of the following current contracts:

- Among the GVVUA, Reclamation and U.S. Fish and Wildlife Service, Contract No. 08-WC-40-313, dated June 5, 2008, for the purpose of Operation, Maintenance or Modification of the Fish Passage and Fish Screen;
- Among the GVVUA, Reclamation, U.S. Fish and Wildlife Service, State of Colorado-Division of Parks and Outdoor Recreation, Contract No. 04-LA-40-0190, dated February 19, 2004, for the purpose of operation of a pump station at Highline Lake;
- Between the GVVUA and Reclamation, Contract No. 2-FC-40-6060, dated January 31, 2002, for the commitment to complete the Grand Valley Water Management Improvements MOU;
- Among the GVVUA, Reclamation, Contract No. 6-07-40-R0270, dated April 10, 1986, for the purpose of Rehabilitation, Operation and Maintenance of Distribution Facilities to Reduce Salinity Inflow to the Colorado River. Under this contract, the GVVUA annually receives from Reclamation their operation and maintenance cost in excess of base cost.
- Among the GVVUA, the Orchard Mesa Irrigation District and Reclamation, Lease of Power Privilege, Contract No. 0-07-40-P0180 Amendment No. 1, dated February 19, 2011 for the purpose of assigning the operation and maintenance of the Grand Valley Powerplant to the GVVUA and the Orchard Mesa Irrigation District. Subsequent amendments have been signed.



## 2. Grand Valley Water Users Association

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### 2.3 Governance and Organizational Structure

GVWUA was incorporated under the laws of the State of Colorado in 1905 as it is a political subdivision of the State of Colorado.

GVWUA is governed by a landowner-elected, eleven member Board of Directors that has the following primary powers as outlined in Article IX of their Articles of Incorporation (Appendix A) and as identified in Section VI of their bylaws (Appendix B):

1. To enter into contracts and agreements
2. To borrow and incur debt and to issue bonds
3. To acquire, dispose of and encumber real and personal property
4. To appoint, hire, and retain agents, employees, engineers, and attorneys
5. To fix fees, rates, tolls, penalties or charges for service and to effectuate liens on property for service provided
6. To furnish services and facilities
7. To adopt and amend bylaws, rules and regulations
8. To collect revenue

## 2. Grand Valley Water Users Association

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GVWUA primarily represents the interests of the Grand Valley as related to the Government Highline Canal and other related facilities (laterals, ditches, etc.). Among the other related facilities is the Price-Stubb Pumping Plant, which is located near the Tunnel No. 3 Outlet at the east end of the Grand Valley. It lifts 25 cfs of water 31 feet to the Stubb Ditch to serve land under the Mesa County Irrigation District. Power is provided to the hydraulic pump by water delivered to the Price Ditch for the Palisade Irrigation District. The photo below shows the Price-Stubb Pump. The centrifugal pump on top pumps the water for the Stubb Ditch, while the Price Ditch flows under the floor of the plant, turning a turbine that powers the centrifugal pump. Figure 2.3.1, below, pictures the Price-Stubb Pump



**Figure 2.3.1 Price-Stubb Pump**

## 2. Grand Valley Water Users Association

### 2.4 Water Rights

Understanding Colorado River water rights in the Grand Valley of Colorado is critical to ensure that beneficial use of the water is being leveraged fully. The table below provides a list of all of the water rights associated with the Grand Valley Project as well as the water rights of the Grand Valley Irrigation Company (GVIC). The GVIC diverts water from the Colorado River in Palisade, CO. The rights of the GVP and GVIC are collectively referred to as the “Cameo Call”.

**Table 2.4.1 Cameo Call Water Rights**

GRAND VALLEY PROJECT WATER RIGHTS BY OWNER	NET AMOUNT (cfs)	ADMIN #	APPROPRIATION DATE	USE	NOTES
Palisade Irrigation District	80	22729.14519	1889-10-01	Irrigation	Price Ditch
Orchard Mesa Irrigation District	10.2	22729.18536	1900-10-01	Irrigation	Vinelands
Mesa County Irrigation District	40	22729.19544	1903-07-06	Irrigation	Stub Ditch
Orchard Mesa Irrigation District	450	22729.21116	1907-10-25	Irrigation	Irrigation and pumping
Grand Valley Water Users Assoc / USA	730	22729.21241	1908-02-27	Irrigation	
Grand Valley Water Users Assoc / USA	220	30895.21241	1908-02-27	Domestic/ Stock	Limited to Non-Irrigating Season
USA	800	30895.21241	1934-02-27	Power*	Limited to 400 cfs During Irrigation Season
Palisade Irrigation District	23.5	30895.24988	1934-06-01	Irrigation	PID Junior
GVWUA, OMID, USA	640		1926-04-01	Exchange	Orchard Mesa check
<b>Grand Valley Project Irrigation Season Total**</b>	<b>1733.7</b>				
OTHER CAMEO CALL WATER RIGHTS BY OWNER	NET AMOUNT (cfs)	ADMIN #	APPROPRIATION DATE	USE	NOTES
Grand Valley Irrigation Company	520.81	22729.11922	1882-08-22	Irrigation	GVIC Senior
Grand Valley Irrigation Company	119.47	30895.23496	1914-04-26	Irrigation	GVIC Junior

\*The power right cannot call during the irrigation season, except when irrigation diversions are below 1,310 cfs at the Roller Dam, power right may be exercised to maintain overall diversions at 1,310 cfs

\*\* Includes only irrigation rights and 400 cfs of power right

## 2. Grand Valley Water Users Association

### 2.5 Water Administration and Operating Procedures

Water entering the Grand Valley Project's Government Highline Canal (Canal) originates from the Colorado River and is diverted at the Roller Dam in DeBeque Canyon. Within DeBeque Canyon, there are three tunnels, Tunnel #1, #2, and #3, respectively. Immediately prior to the tunnel #3 inlet is an inverted siphon that diverts flow under the parallel interstate (I-70) and the Colorado River into what is known as the "Power Canal". The Power Canal makes irrigation deliveries to the area known as the Vinelands, conveys the water delivered to the Grand Valley Power Plant, and delivers water to the Orchard Mesa Irrigation District pumping plant. Figure 2.5.1 provides the schematic that has been previously referenced in other GVVUA documents to describe the water right deliveries at the Cameo call.

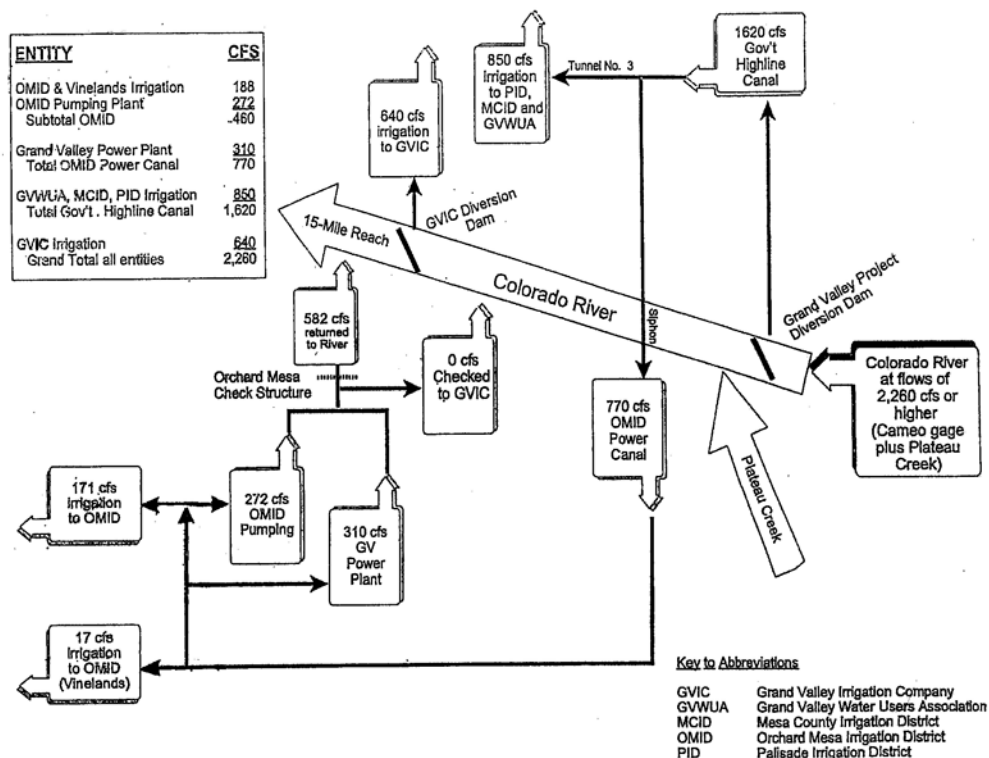


Figure 2.5.1 Previous Schematic of Cameo Water Rights Administration





## 2. Grand Valley Water Users Association

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To assist in the understanding of the operations of the canal and related facilities (roller dam, fish screen, Price-Stubb pump, etc) the Association contracted a consulting engineer (Blythe Group). The investigation resulted in the “Grand Valley Water Users Association Operations Manual” (Blythe Group, June 2013). The document provides important operational information about the canal infrastructure, and remains a good resource from operations and management.

## 2. Grand Valley Water Users Association

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### 2.6 Water Delivery System

As the managing entity for the Roller Dam, the GVVUA diverts water for the GVVUA, Mesa County Irrigation District (MCID), Orchard Mesa Irrigation District (OMID), and Palisade Irrigation District (PID).

Delivery of water to MCID and PID occurs at the Price-Stubb Pump immediately after Tunnel No. 3. In 1918 carriage contracts were executed between GVVUA and both irrigation districts establishing that the GVVUA would deliver their water rights to the Price and Stub ditches. An additional carriage contract was signed in 1952 with PID to deliver their junior right to the Price Ditch. The contracts were revised in 1988 and 2011, respectively. The GVVUA is compensated for the delivery of water to MCID and PID.

OMID has signed a series of carriage contracts with the GVVUA over the years with the 1955 contract superseding the originals, and an amendment to the 1955 contract signed in 1990. These carriage contracts require the delivery of OMID water to the inverted siphon at the mouth of Tunnel No. 3. In exchange for the delivery, OMID must allow the GVVUA to use the power canal to deliver water to the Grand Valley Power Plant. Additionally, these contracts stipulated that OMID must assist with repayment of the Grand Valley Project loans and pay the GVVUA an amount equal to 28.41% of the annual operating and maintenance costs of Roller Dam and canyon canal from the Roller Dam to the mouth of Tunnel No. 3.

For more information about the carriage contracts, including copies of the contracts, please reference the Grand Valley Water Users' Association Operations Manual (Blythe Group, 2013).

Delivery to GVVUA water users begins on the west side of Indian Wash (near 28 ½ Road in Grand Junction, CO). The most recent survey estimates that GVVUA provides water to approximately 23,341 acres of Class 1 lands. Water Deliveries end at approximately 5 Road in western Mesa County, CO. Delivery is assisted by approximately 150 miles of Association owned laterals, of which roughly 130 miles are piped.

GVVUA delivers water on-demand throughout the irrigation season. Delivery orders are placed with GVVUA prior to the requested delivery date. It is the irrigators' responsibility to adhere to the water delivery dates and amounts as submitted on the water order delivery cards.

GVVUA continues to see agricultural land converted to other uses (predominantly residential subdivisions). With land conversion comes the difficulty of delivering water to smaller parcels. To simplify this, GVVUA requires that irrigation deliveries to residential subdivisions be made to a homeowners association. It is the homeowner association's responsibility to distribute the water to the individual homeowners within the subdivision.

# 3. Water Management Plan Update

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## 3 Water Management Plan 2017 Update

### 3.1 Project Development Approach

GVWUA contracted with an engineering firm (J-U-B Engineers, Inc.) to assist in the preparation of the 2017 Water Management Plan.

The Scope of Work was developed using Reclamation's guidelines for preparing a Water Management Plan. Initial tasks included data collection and conceptual design in order to generate opinions of probable costs associated with significant sections of canal lining and other conveyance infrastructure improvements.

After project costs were estimated, the projects were prioritized according to multiple criteria, including, but not limited to:

- Importance to Reclamation
- Safety Benefit
- Relative Cost
- Funding Ability
- Operational Benefit

The significant cost of infrastructure improvements require that that GVWUA prioritize projects in a manner that addresses critical needs within the system while distributing the costs across a fundable period. This will help Association accomplish a number of the goals and objectives from the 2012 Plan and will be used as a tool for long-term planning and project development.

## 3. Water Management Plan Update

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### 3.2 Major Tasks and Activities Included in the Plan Development

GVWUA has followed the process identified in Reclamation's guidebook for developing a water management and conservation plan. The proposed scope of work for updating the 2017 Water Management Plan includes expanding on the information within the 2012 plan, implementing the goals and objectives of the plan and ensuring the proper resources are available to implement the updates. It is important that the projects, goals and objectives developed in the plan are in line with Reclamations goals for the Grand Valley Project. The Tasks and Activities are as follows:

*Task 1 - Gather information and identify and Prioritize issues:*

*Task 2 - Set Goals for Project Development*

*Task 3 - Identify and Evaluate Candidate Management Measures*

*Task 4 - Define and Develop Management Program*

*Task 5 - Prepare Written Plan, Document Implementation Plans and Final Reports and Close Out*

## 3. Water Management Plan Update

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### 3.3 Project Objectives

The following list summarizes the objectives associated with the development of the 2017 GVVUA Water Management Plan.

- Planning for the increasing demands on the Colorado River due to Western population growth and climate change.
- Understanding and considering the impact of existing and developing state, regional, and national contractual obligations on Association planning activities.
- Evaluating recently completed and developing policy agreements that positively affect the Association and honor and enhance the rights and responsibilities of affected parties.
- Recognizing and evaluating the potential importance of Grand Valley Project improvements to Reclamation and the Association and to multiple external beneficiaries including the environmental, recreational, wildlife, and broader water communities.
- Aligning the Association's long-term facilities and administrative plans with Reclamation's need to address the replacement, repair, and operations of the 94 billion dollar investment in Western water infrastructure.
- Creating ways to help the Grand Valley irrigation and municipal water providers and the community understand the benefits of the collaborative approach to strategic planning that the Association is undertaking through our "water security" work.
- Considering and planning with a long term prospective allows the GVVUA to consider and prepare for events, actions and outcomes for the futures for the Association, Reclamation and others.



## 3. Water Management Plan Update

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### 3.4 Overview of Identified Areas of Importance

The identified areas of importance can be divided into two broad categories: Administrative and Infrastructure related. The remainder of Volume 1 of the Plan goes into greater detail on the administrative areas of focus, while the infrastructure related areas are discussed in Volume II. The list below provides an overview of the identified areas of importance for each category:

#### **Administrative areas of focus** (see Section 4 below for details)

1. Protection of Right-of-Ways
2. Ditches and Drains within Subdivisions
3. Stormwater Discharge and regulated water
4. Water Measurement and Accounting
5. Continued Policy review and development
6. Funding and assessments planning
7. Water rights and legal related
8. GVVUA Water Security Strategy
9. Air quality
10. Equipment plan
11. Identify and archive all pertinent information
12. Communications
13. ESA compliance
14. Power Plant Rehabilitation
15. Emergency Planning

#### **Infrastructure related primary areas of focus**

1. Roller Dam, related diversion facilities, and Canyon Canal (See Dam and Canyon Facilities Master Plan)
2. Grand Valley Power Plant Rehabilitation (See Grand Valley Power Plant Rebuild Proposal and related documents)
3. Routine annual OM&R (See Volume II)
4. Valley portion of canal system (See Volume II)
5. Capture and regularly update infrastructure information (See Volume II)

## 3. Water Management Plan Update

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### 3.5 Implementation and Annual Evaluation Activities

Implementation of the Water Management plan will likely require regular reference by GVVUA management, staff and the GVVUA Board of Directors to the document. The administrative areas of the Plan and the priorities set therein should assist the General Manager by guiding day-to-day operations and long-term projects. The infrastructure related areas of the Plan (Volume II) will help to guide decisions related to operations and maintenance on the canal as well as annual planning for engineering and construction projects.

Annually, GVVUA management, staff and the Board should convene to evaluate success according to the WMP. Considerations for the evaluation include:

- Comparison of completed projects versus those listed as high priority in the plan. Have completed projects followed prioritization? If not, why?
- Do the previous prioritizations reflect the current priorities of the Association? If not, in what direction should the association go?
- Have any new developments occurred that need to be reflected in an updated Plan?

After the evaluation has occurred, revisions or amendments to the Water Management Plan may be pursued. Revisions will consist of publishing a new Water Management Plan (Volume I, Volume II or both) within the framework of the existing WMP. Amendments will require publishing a new document to serve alongside the existing WMP.

As a rule, Volume II of the Water Management Plan should be updated yearly due to the relatively rapid pace at which infrastructure needs change and projects are completed. Volume I may be changed with less frequency, as Administrative goals are unlikely to change as often. At a minimum, the entire plan must be revised every five (5) years.

## 4. Administrative Areas of Focus

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### 4 Administrative Areas of Focus

#### 4.1 Protection of Right-of-Ways.

The Association must operate, maintain and improve a significant amount of water delivery infrastructure. As the Valley continues to urbanize it is increasingly important for the Association to emphasize their right to access their infrastructure. The perceived disturbance to the surrounding community during operations, maintenance and replacement activities will require that community members and landowners are aware of and understand the Associations rights to access as well as the certainty that all rights of ways will be accessed at some point for maintenance, repair and replacement. This focus area may require additional mapping and emphasis so that association staff and community members understand the type of access rights across or adjacent to their property.

## 4. Administrative Areas of Focus

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### 4.2 Ditches and Drains within Subdivisions

Continued urbanization brings homes, parks, businesses and municipal infrastructure into the areas with Association infrastructure that have historically been agricultural in nature. New community members, developers, business owners, and community leaders most likely do not have an understanding of the historical use and purpose of ditches and drains owned and maintained by the Association. While the land use adjacent to the Association drains may have transitioned, the traditional use of the infrastructure has not. The Association must still maintain and use their drain system to convey agricultural water back to the natural drainages. The Association must continually emphasize and exercise their rights and interests in the drainage infrastructure. If at times, it makes economic and engineering sense to utilize an Association drain for the conveyance of non-agricultural runoff there must be policies and procedures in place to transfer the facility from the Association to an appropriate entity. It is also extremely important that the historic use of the drain for agricultural runoff and seepage is maintained and expressed contractually.

## 4. Administrative Areas of Focus

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### 4.3 Stormwater Discharge and Regulated Water

Urbanization continues to put pressure on Association infrastructure to act as a conveyance for Municipal Separate Storm Sewer System (MS4) water. As areas within the Association service area urbanize the runoff from the newly urbanized areas will become subject to additional Clean Water Act rules and regulations. Discharges of MS4 water into Association infrastructure put the Association at risk of accepting a regulatory burden they have no interest or legal obligation in accepting. It will continue to be the policy of the Association that no non-agricultural runoff will be allowed to enter Association infrastructure. If at times, it makes economic and engineering sense to utilize an Association drain for the conveyance of non-agricultural runoff there must be policies and procedures in place to transfer the facility from the Association to an appropriate entity. It is also extremely important that the historic use of the drain for agricultural runoff and seepage is maintained and expressed contractually.

## 4. Administrative Areas of Focus

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### **4.4 Water Measurement and Accounting.**

It is anticipated that water measurement and accounting will be of increased importance in the future. As the Association seeks funds for system improvements through groups and entities who are pursuing the benefits of system improvements (environmental, recreational, ESA, etc.) measurement and accounting of the water associated with project rights will be increasingly important as a tool to demonstrate the effectiveness of projects to multiple beneficiaries.

## 4. Administrative Areas of Focus

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### 4.5 Continued Policy Review and Development

The GVVUA will continue to review current Association policy and develop new policies. Continued urbanization, increased regulatory burden, and basin wide drought contingency planning, among other issues will require the Association to have updated policies and procedures. The GVVUA will develop policies when necessary to ensure, as best as possible, consistent direction for the association as the landscape of water management changes



## 4. Administrative Areas of Focus

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### 4.6 Funding and Assessments Planning

Continued urbanization and changing demographics amongst Association membership will require that the financial planning of the association reflect their constituents. While agriculture will continue to be the dominant water user, urban and suburban users are an important constituent. Assessment planning must take place to ensure that the financial burden is shared across the Association membership without placing agricultural users at a regional disadvantage by increasing the costs of their most fundamental input above that of other irrigators in the region.

## 4. Administrative Areas of Focus

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### 4.7 Water Rights and Legal Related

The Association will continue to emphasize water rights and related legal work as an important function of the Association. As demands upon limited water resources increase it is important that the Association understand what other water users are doing and how water use in the Colorado River Basin is evolving. Protection of the Association rights is extremely important and the Association must take a role (as it has in recent history) as a leader amongst water users on legal fronts. The Association will continue to work with their allies and partners to better understand how the Colorado River functions administratively and continue to solidify and protect their senior rights. The benefits that result from active legal participation in the Colorado River will only increase.

## 4. Administrative Areas of Focus

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### 4.8 GVVUA Water Security Strategy

The Grand Valley Water Users Association has recently taken a leadership position in the upper Colorado River basin in regards to agricultural water use and potential basinwide drought resiliency measures. Our understanding of the relative security of our water supply continues to evolve as we better understand the interrelated state and federal laws and rules that govern the legal administration of the river.

There is significant uncertainty associated with drought within the Colorado River basin. The potential for damage during drought to the communities and economies that depend on water supply from the GVVUA is real. Demand upon the river during many years exceeds available supply. During a large-scale drought agricultural water use will likely be viewed as “low hanging fruit” as water users throughout the basin search for temporary or permanent water supply. The GVVUA will continue to pursue a “Water Security Strategy” in the face of climate change, an over allocated river and drought.

## 4. Administrative Areas of Focus

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### 4.9 Air Quality

Air quality is an issue that will likely be of increasing importance to the surrounding community as urbanization continues. While agriculture provides myriad benefits to the local community in regards to air quality the most visible relationship between the Association and air quality is spring burning of open laterals and drains. The GVVUA will pursue partners and funding to address negative impacts to air quality resulting from their operations and maintenance of infrastructure.

## 4. Administrative Areas of Focus

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### 4.10 Equipment Plan

The GVVUA will continue to develop their equipment plan. There is significant expense associated with replacing aging equipment, the costs must be accounted for, and financial resources dedicated to equipment replacement.

## 4. Administrative Areas of Focus

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### **4.11 Identification and Archival of all pertinent information**

As the landscape of water management continues to evolve, the need to archive pertinent information is of increased importance. Management, Board of Directors, staff, legal counsel and engineering consultants must be able to quickly obtain relevant information related to historic projects, agreements, contracts and plans.

## 4. Administrative Areas of Focus

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### 4.12 Communications

Communication within an organization and amongst partners will be emphasized moving forward. The GVVUA operates their system as a part of a larger river system. Good communication with Reclamation, other irrigators, the State and Association membership is very important as the GVVUA established how they will manage their water in the future.

## 4. Administrative Areas of Focus

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### 4.13 ESA Compliance

Although often overlooked ESA compliance is an important function of the Grand Valley Project and a task that the GVVUA undertakes on behalf of all water users in the Colorado river basin above the 15-mile reach. ESA compliance in many ways solidifies the importance of the irrigators in the Grand Valley.



## 4. Administrative Areas of Focus

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### 4.14 Power Plant Rehabilitation

The Association and the Orchard Mesa Irrigation District have recently contracted with Sorenson Engineering to complete rehabilitation of the Grand Valley Power Plant. The Association will continue to expend significant effort over the course of time to ensure that this important infrastructure continues to function.

## 4. Administrative Areas of Focus

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### 4.15 Emergency Planning

The Association has taken a proactive approach to emergency planning for situations involving a potential, reported, or active breach/failure of the Government Highline Canal. The plan is intended to provide easy-to-follow instructions to staff responding to an emergency event, with the intent of saving lives and reducing property damage. The Canal Emergency Management Plan, created in March, 2016, can be found in Appendix D. It is to be reviewed annually to ensure the information and instructions are accurate and complete.

## Appendix A // Articles of Incorporation

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**AMENDED AND RESTATED  
ARTICLES OF  
INCORPORATION OF THE  
GRAND VALLEY WATER USERS ASSOCIATION**  
(As Amended Through 2017)

Know all men by these articles of incorporation that we, the undersigned, have associated ourselves together under the laws of the State of Colorado, as a body corporate.

**ARTICLE I.**

The name of this corporation shall be and is The Grand Valley Water Users Association.

**ARTICLE II.**

The names of the incorporators are Lawrence M. Miller, S. P. Green, H. H. Beach, Daniel Lynch, John T. Beaman, James B. Hunter, George Smith, Marion O. Delaplain, William S. Wallace, James H. Smith and Merrill W. Blakeslee, but other may become members of this association by subscribing for the stock of the Association or by the transfer of stock to them in the regular course of the administration of the affairs of the Association.

**ARTICLE III.**

The principal place of transacting the business of the Association shall be at Grand Junction, in the County of Mesa, in the State of Colorado.

**ARTICLE IV.**

SECTION 1. The purposes for which this Association is organized and the general nature of the business to be transacted are: To acquire, furnish, provide for, and distribute to the lands of the shareholders of the Association as herein provided, an adequate supply of water for the irrigation thereof; to divert, store, develop, pump, carry and distribute water for irrigation and all other beneficial uses, deriving the same from all available sources of supply; to construct, install, operate, and maintain pumps, ditches, conduits and other drainage works for draining any or all of the lands receiving water through the irrigation works of the Association; to construct, purchase, lease, condemn, or acquire in any manner whatsoever, and to own, use, sell, transfer, convey, control, maintain, and operate any irrigation works, structures, telephone systems, electric or other power plants, and transmission lines, and property both real and personal of every kind whatsoever, necessary or appropriate for the accomplishment of any of the purposes of this organization; to generate, create, transmit, use and sell power and electrical energy; to act as trustee, agent or attorney for the sale, disposal, and transfer of lands, in order to facilitate the disposal of such lands, or any part thereof, to persons qualified to perfect rights to the use of water under the laws of the United States

applicable thereto, and the rules and regulations established thereunder; to incur indebtedness, floating or bonded, and to secure the same by mortgage, deed of trust, pledge or otherwise, to acquire, hold, and dispose of stock in other corporations, domestic or foreign; to purchase or acquire land by foreclosure or otherwise and to hold, own, sell, transfer or convey such land, any such sale, transfer or conveyance to be upon such terms and conditions as may be fixed by the Board of Directors of this Association; to have and exercise all the powers and to perform any and all acts necessary or appropriate for the accomplishment of any one or more of the said purposes or anything incident thereto.

SECTION 2. This Association shall have the power to enter into any contract or other arrangement with the proper representative of the United States, individual, association of individuals or corporation, for the accomplishment of any of the aforesaid purposes, by means of the construction, acquisition or control of appropriate works or structures, or in any other manner whatsoever.

SECTION 3. It shall have the power to enter into any agreement with the proper representative of the United States with reference to the collection and payment of any and all charges made under the federal statutes for the works providing water for the lands of its shareholders.

SECTION 4. It shall have the power to comply with the provisions of any federal statutes applicable to the work done by the United States in connection with such system of water supply, and any rules and regulations established thereunder.

SECTION 5. The territory within which the lands to be irrigated as aforesaid are situated, to be known as the Grand Valley Irrigation district, includes all lands within the boundaries described as follows, to-wit:

That portion of Grand Valley lying between the east boundary line of Range Ninety-eight (98) west 6th Principal Meridian, and the west boundary line of Range One Hundred and Four (104) west 6th Principal Meridian irrigable by diversion of water from the Grand River in Colorado.

## ARTICLE V.

SECTION 1. The capital stock of the Association shall be Seventy-five Thousand Dollars (\$75,000), divided into seventy-five thousand (75,000) shares, of the par value of One Dollar (\$1.00) each. Said stock shall be assessable and assessments thereon for all purposes shall be made by the Board of Directors of this Association.

SECTION 2. Only those who are owners of lands, or occupants of public lands having initiated a right to acquire the same, within the area described in Article IV or within such extensions thereof as may be duly made, shall be qualified to own the shares of this Association. Not more than one share shall be allotted for each acre of land, but fractional shares may be issued on

fractions of acres.

SECTIONS 3, 4, and 5, Article V, are omitted.

SECTION 6. The ownership of each share of stock of this Association shall carry, as incident hereto, a right to have water delivered to the owner thereof by the Association for the irrigation of the lands to which such share is appurtenant.

SECTION 7. The amount of water to be delivered to such owner shall be that proportionate part to all the water available for distribution by the Association during any irrigation season, as the number of shares owned by him shall bear to the whole number of valid and subsisting shares then outstanding, such water to be delivered to and upon said lands at such times during such season as he may need for the proper irrigation thereof.

SECTION 8. By subscribing to the shares of this Association each signer agrees that the right to any water theretofore appropriated by him, or by his predecessor in interest, for the irrigation of the lands described in said subscription, or customarily used thereon, shall become appurtenant to such lands and be and remain incident to the ownership of such shares appurtenant to such lands. There shall be further incident to the ownership of such shares the right to have such water delivered to the owner thereof by the Association for the irrigation of said lands, as the Association shall from time to time acquire or control means for that purpose: Provided, that the whole amount of water actually delivered to such lands from all sources shall not exceed the amount necessary for the proper cultivation thereof.

SECTION 9. The records of the Association and each and every certificate or other evidence of ownership of shares of stock in the Association, when issued, shall contain a description of the lands to be irrigated, and to which the aforesaid rights and shares shall be perpetually appurtenant; and, thereafter all rights whatever their source or whatever their manner of acquisition to the use of water for the irrigation of said lands shall forever be inseparably appurtenant thereto, together with the said shares of stock, and all rights and interests represented thereby or existing or accruing by reason thereof, unless such rights shall become forfeited under the provisions of these Articles of Incorporation, or of by-laws adopted in pursuance thereof, or by operation of law, or by the voluntary abandonment thereof by deed, grant or other instrument, or by non-user for the term prescribed by law; but no such abandonment shall be for the benefit of any person designated by such shareholder, directly or indirectly, or to his use, nor confer any right whatsoever upon the holder of any grant, release, waiver, or declaration of abandonment of any kind: Provided, however, that if for any reason it should at any time become impracticable to beneficially use water for the irrigation of the land to which the right to the use of the water is appurtenant, the said right may be severed from said land and simultaneously transferred and attached to other lands to which shares of stock in this Association are or shall thereby be made appurtenant, if a request for leave to transfer, showing the necessity therefor, shall have first been allowed by a two-thirds vote of the Board of Directors at a regular meeting and approved by the Secretary of the Interior. All the provisions and agreements of this section shall be set forth in the aforesaid certificate or other

evidence of the ownership of shares of stock in the Association, together with any other provisions and agreements made necessary by these articles, and such certificate or other instrument shall be signed, executed and acknowledged by the President and Secretary of the Association, and by the person to whom it is issued, in the manner required by law for the execution and acknowledgment of deeds for the conveyance of real property, and the Board of Directors shall pass by-laws prescribing the form of such certificate or other instrument, not inconsistent with these articles.

SECTION 10. Every transfer of the title to any lands to which the said rights and shares are appurtenant, whether by grant or by operation of law (except where the land may be subjected by grant, or involuntary under any law, to an easement, the exercise of which does not interfere with the cultivation of the soil by the servient owner) shall operate, whether it be so expressed therein or not, as a transfer to the grantee or successor in title, of all rights to the use of water for the irrigation of said lands, also all rights arising from, or incident to, the ownership of such shares, as well as the shares themselves; and upon presentation to this Association of proof of any such transfer of land, the proper officer shall transfer such share of stock upon its books to the successor in title to said lands.

SECTION 11. Any transfer or attempted transfer, of any of the shares of this Association, made or suffered by the owner thereof, unless simultaneously a transfer of the land to which it is appurtenant is made or suffered to or in favor of the same party, shall be of no force or effect for any purpose and shall confer no rights of any kind whatsoever on the person or persons to whom such transfer may have been attempted to be made.

SECTION 12 is omitted.

SECTION 13. If it should be determined by the United States that the amount of water available from the entire irrigation system as owned or controlled by it and by the Association shall be insufficient to properly irrigate one acre of land for each share of the capital stock, then no shares in excess thereof shall be issued, and the number of shares shall be so reduced by appropriate amendment of these articles, as not to exceed the number of acres determined by the United States as irrigable from the entire available supply of water.

SECTION 14. If, when such determination is made, the number of shares subscribed shall be in excess of the number of acres so determined, an allotment of shares shall be made to the subscribers, equal to the number of acres irrigable, giving preference to the cultivated land. The surplus of shares so subscribed shall thereupon be cancelled and shall not be re-issued. By-laws shall be adopted to govern such allotment.

SECTION 15. If the number of acres of irrigable land or the cost of the works, or both, as determined by the United States, shall exceed the number of shares of the capital stock authorized herein, appropriate amendment of these articles as to the number of shares, the par value thereof and the capital stock shall be made in compliance with the laws applicable thereto.

## ARTICLE VI.

SECTION 1. The revenues for the accomplishment of the purposes of this Association shall be raised:

(a) From income arising from the carriage, rental, or delivery of water for irrigation or other purposes, or from the sale, rental, lease, or furnishing otherwise of electric or other power or power privileges, or from any other lawful operations of the Association.

(b) From assessments against the shares of stock of the Association so far as they may be from time to time necessary to meet:

(1) The cost of construction, improvement, enlargement, betterment, repairs, operation and maintenance of the irrigation works of the Association or of those managed, controlled, operated or maintained by it.

(2) Payments due the United States under any contract or contracts between the United States and the Association, or payments under any contract between the United States and other parties which are assumed or guaranteed by the Association.

(3) Deficiencies caused by the failure of some of the shareholders of the Association to pay assessments upon their shares of stock.

(4) Any and all lawful obligations of the Association.

SECTION 2. The directors shall have power to make and enforce necessary by-laws for making, levying, collecting and enforcing the payment of such assessments and charges for water and other services.

SECTION 3. Assessments for the ordinary cost of operation, maintenance and repair, of the works of the Association, or of those the maintenance and control of which are, or may be hereafter, lodge in the Association, shall be equally assessed against all shareholders in proportion to the number of shares held by them respectively, unless existing or future contract or contracts with the United States or the laws or regulations of the United States now or hereafter require unequal assessments. Assessments other than for such ordinary cost of operation, maintenance and repair and other than for the purposes covered by Sections 4 and 5 of this Article shall be equally assessed against all shareholders in proportion to the number of shares held by them respectively, unless existing or future contract or contracts with the United States or the laws or regulations of the United States now or hereafter require unequal assessments.

SECTION 4. Assessments for the purpose of constructing or acquiring, or for the betterment, improvement, renewal, replacement or preservation of any works, property, or rights of the Association, or for the purpose of preserving or increasing or more efficiently or economically distributing the water supplies available for distribution by the Association, or for the fulfillment of any obligation undertaken by the Association, or in any contract, agreement or other arrangement with the United States government, or necessary for the



accomplishment or carrying out of the purposes of the Association, may be equally assessed against all shareholders in proportion to the number of shares owned by them respectively. This section, however, is not to prevent unequal assessments when required under existing or future contract or contracts with the United States or under present or future laws or regulations of the United States.

SECTION 5. Assessments for expenditures for purposes that are of benefit to a part of the shareholders may be specially assessed in proportion to such benefits against such shareholders, but no expenditure to be provided for, or covered by, such special assessment shall be made, or obligation to expend the same incurred, except upon the petition of the holders of two-thirds of the shares to be so specially benefitted: Providing, that the terms of this section shall not be construed as applying to any variation in the charges to be made on account of the building, operation and maintenance of the project, as assessed by the Secretary of the Interior.

SECTION 6. Assessments shall, from time to time, as they are made and levied and until they are paid or otherwise discharged, become, be and remain a lien upon the shares of stock against which they are levied and upon the lands to which such shares are appurtenant, and upon all rights and interests represented by such shares. The manner of fixing the lien and enforcing the same shall be as prescribed in these articles or in the by-laws of the Association, or in any contract to which a stockholder of the Association is a party. The Association may enforce the payment of assessments by foreclosure and sale of said lands and shares of stock in the manner provided by law for the foreclosure of real estate mortgages or by suit thereof in a court of competent jurisdiction, and levy in satisfaction of such judgment to be confined, however, to the land of the judgment debtor described in such suit and subscribed to the Association and/or which is under any contract or water right application with the United States.

SECTION 7. Except for operation, maintenance and repair, no work shall be undertaken, purchase made or indebtedness incurred or be authorized during any one year, whereof the cost shall exceed One Million Dollars (\$1,000,000) until it shall have first been ratified by at least two-thirds of the shares represented by the votes cast at an election to be called for that purpose. Special elections may be called and held for such purpose under such by-laws as the Board of Directors may prescribe, not inconsistent with these Articles.

## ARTICLE VII.

SECTION 1. The exercise of the corporate powers of this Association and the management of its affairs shall be vested in 11 directors, from whom the President and Vice-President shall be chosen. The officers shall consist of the President, Vice-President, Treasurer and Secretary and shall be elected by the Board of Directors, but the Treasurer and Secretary need not be members of the Board of Directors or Stockholders of the Association. Any and all other officers, agents and employees as shall or may be from time to time created and established by the by-laws, shall be elected by the Board of Directors.

SECTION 2. Members of the Board of Directors of the Association shall be elected as follows:

(a) The annual election of members of the Board of Directors shall be held on the second Tuesday of February, 2008, and on the second Tuesday of February of each year thereafter, in such manner as the by-laws shall provide. At the annual election there shall be one vote per share of capital stock of the Association, regardless of the number of directors being elected. An elector who owns one share of capital stock shall be entitled to cast his vote for one of the candidates for director at the annual election. An elector who owns more than one share of capital stock shall be entitled to cast his votes for any one or more of the candidates for director in any manner desired by the elector. Any tie votes for members of the Board of Directors shall be resolved by lot in the manner set forth in the by-laws.

(b) At the election of the Board of Directors held in 2007, the following procedures shall apply: All eleven members of the Board of Directors shall be elected at the 2007 election. The eleven candidates receiving the most votes shall be elected to the Board of Directors. The four persons receiving the most votes shall be elected for a term of three years. Of the remaining seven persons, the four persons receiving the most votes shall be elected for a term of two years. The remaining three persons shall be elected for a term of one year.

(c) Upon the expiration of the initial staggered terms provided for in Subsection (b), above, all directors shall thereafter be elected for three year terms. For purposes of determining the terms of office of directors, a "year" shall be deemed to be the period from the date of one annual election to the date of the next annual election

SECTION 3. Each director shall possess the following qualifications at the time of his election or at the time of his appointment to fill a vacancy on the Board of Directors:

(a) The director shall be a natural person who is a resident of the Grand Valley Irrigation district (defined in Article IV, Section 5, above); and

(b) The director shall be the owner of at least two and one-half (2 ½ ) acres of land to which shares of stock of the Association are appurtenant ("qualifying land"). As used in this Section, a person shall be considered to be an owner of qualifying land if the person meets one of the following requirements:

(1) The person is an owner of record, either solely, as a joint tenant or as a co-tenant, of the qualifying land;

(2) The qualifying land is owned of record by a corporation, limited liability company, partnership or other organization, association or entity, either solely, as a joint tenant or as a co-tenant, and the person owns a voting interest in the organization, association or entity; or

(3) The land is owned of record by a trust or by trustees of a trust, either solely, as a joint tenant or as a co-tenant, and the person is a trustee of the

trust.

(c) If a director ceases to meet the qualifications set forth in Subsections (a) or (b) above, during his term of office, he shall no longer be qualified to be a director and his office shall be deemed vacant.

SECTION 4. Until the election of the Board of Directors at the annual election in 1906, and until their qualification the directors shall consist of the following named persons: Lawrence M. Miller, P. Green, H. H. Beach, Daniel Lynch, John T. Beaman, James B. Hunter, George Smith, Marion O. Delaplain, William S. Wallace, James H. Smith and Merrill W. Blakeslee.

SECTION 5. The Board of Directors shall have power to make such prudential by-laws as shall be necessary to the government of this Association, not inconsistent with these Articles, and for the management of its business and the conduct of its affairs, and to repeal, modify and amend the same from time to time. The Board shall not have power to adopt or enforce any by-laws that in anywise conflicts with any rules or regulations established by the Secretary of the Interior or other Agency of the Government, in connection with the Reclamation Act.

SECTION 6. In the event of a vacancy in the Board of Directors by reason of death, resignation or otherwise, the vacancy shall be filled by the Board of Directors.

SECTION 7. Regular and special meetings of the Board of Directors shall be called and held in such manner and at such times and places as may be prescribed by the by-laws.

SECTION 8. Special meetings of the Board of Directors may be called by the President, or by any six of the members of the Board. Such call shall be in writing and signed by either the President, or any six of the members and shall state the time of such proposed meetings, and the nature of the business to be transacted thereat. Such written call shall be filed with the Secretary, who shall thereupon immediately, and at least five days before the time fixed for such meeting mailed postcard to the President, and each member of the Board, a copy of such call, and shall publish the same in some newspaper published and of general circulation in the territory, described in Article IV, of these Articles, on three consecutive days before, and exclusive of, the day fixed for such special meeting. If the Secretary fail or refuse to publish such call or mail copies thereof, as above provided, then either the President, if he issued the call, or any one of the members who issued the same, may make publication and mail copies of the call, with like effect as if done by the Secretary. Special meetings of the Board of Directors shall be held at the office of the Association.

SECTION 9. The Directors shall have the power, in the name of the corporation, to prosecute, defend, and compromise all law suits; to make all contracts, in the name of the Association, necessary and proper for the conduct of affairs and the carrying on of the business of the Association, subject to all limitations and regulations prescribed by these Articles or the by-laws.

SECTION 10. The Board shall have the power to estimate, make and levy all assessments against the shares of stock of this Association to the extent and in the manner authorized by these Articles and the by-laws, and shall also have the power to enforce collection of assessments in such manner as may be prescribed in these Articles or in the by-laws of this Association, and shall also have power to prescribe the terms and conditions under which shares of stock may be subscribed for land to be supplied with water from the irrigation system of this Association, and shall also have power to prescribe terms and conditions for supplying water upon land from the irrigation system of this Association.

SECTION 11. The Board shall have the power to make, publish, and enforce rules and regulations concerning the distribution, use and application of the water under its control, subject at all times to, and not inconsistent with, these Articles, or with the by-laws, or with the federal statutes applicable thereto and the rules and regulations established thereunder.

SECTION 12. The Board shall keep, or cause to be kept, a record of its transactions, which shall at all time remain in the office of the Association and shall, during office hours, be open to the inspection of the shareholders, or their properly authorized agents.

SECTION 13. The Board shall hear and determine complaints of shareholders of non-service, or of improper service or distribution of water, or of improper performance of duty by any employee of the Association relative to the distribution of water.

SECTION 14. The members of the Board of Directors shall receive such compensation as may be prescribed by the by-laws.

SECTION 15. The Directors shall have no personal liability to the corporation or to its members or stockholders for monetary damages for breach of fiduciary duty as a director; except that this provision does not eliminate or limit the liability of a director for any breach of the director's duty of loyalty to the association or its members or stockholders; acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; or any transaction from which the director derives an improper personal benefit. This provision shall not affect the liability of a director for any act or omission occurring prior to the effective date of this provision.

SECTION 16. The Association shall indemnify, to the fullest extent permitted by applicable law in effect from time to time, any person, and the estate and personal representative of any such person, against all liability and expense (including attorneys' fees) incurred by reason of the fact that he is or was a director or officer of the Association or, while serving as a director or officer of the Association, he is or was serving at the request of the Association as a director, officer, partner, trustee, employee, fiduciary, or agent of, or in any similar managerial or fiduciary position of, another domestic or foreign corporation or other individual or entity or of an employee benefit plan. The Association shall also indemnify any person who is serving or has served the Association as director, officer, employee, fiduciary, or agent, and that person's estate and personal representative, to the extent and in the manner provided in any bylaw, resolution of the directors, contract, or otherwise, so long as such provision is legally

permissible.

## ARTICLE VIII.

SECTION 1. The following provisions shall govern the qualifications of electors and the voting of shares:

(a) At all elections each elector shall possess the following qualifications at the time of the election, except as otherwise provided in Subsection (d), below:

- (1) The elector shall be the owner of at least one share of capital stock of the Association and shall have been the owner thereof, as shown by the books of the Association, for at least twenty days before such election; and
- (2) The elector shall be at least eighteen years of age.

(b) For purposes of Subsection (a)(1), above, an elector shall be considered to be the owner of capital stock of the Association if the elector is a natural person who meets one of the following requirements:

- (1) The person is an owner, either solely, as a joint tenant or as a co-tenant, of the capital stock;
- (2) The capital stock is owned by a corporation, limited liability company, partnership or other organization, association or entity, either solely, as a joint tenant or as a co-tenant, and the person owns a voting interest in the organization, association or entity; or
- (3) The capital stock is owned by a trust or by trustees of a trust, either solely, as a joint tenant or as a co-tenant, and the person is a trustee of the trust.

(c) There shall be only one vote per share of capital stock of the Association. If a share of stock is owned by more than one person, organization, association or entity, the owners of the share of stock shall decide the person who shall be the elector for that share, which person shall be qualified as set forth in Subsections (a) and (b), above, and shall declare the identity of such person to the Association at or prior to the election. If the owners of a share of stock fail to make such declaration and multiple votes are attempted to be cast by or on behalf of the share of stock, all of the votes cast by or on behalf of that share of stock shall be invalidated and disregarded.

(d) If capital stock of the Association is appurtenant to lands that are subdivided into lots or smaller parcels, the Association may require the formation of a homeowners association or similar organization to represent all such lands on matters relating to the Association. The Association's annual assessment for all of the capital stock appurtenant to subdivided lands that are represented by a homeowners association will be billed to that homeowners association, and the homeowners association shall provide to the Association the name and address of the natural person to whom the billing for the annual assessment shall be sent. Such person shall be at least eighteen years of age. Notwithstanding anything to the contrary stated above, the elector for all of the capital stock appurtenant to subdivided lands represented by a homeowners association shall be the natural person designated in the Association's records as the person at

the homeowners association to whom the billing for the annual assessment shall be sent.

(e) Any qualified elector shall be entitled to appoint a proxy to vote the elector's shares, in the manner provided by applicable Colorado law.

SECTION 2. At all times each shareholder shall be entitled to one vote for each acre of land owned by him that is entitled to stock, not however to exceed in the aggregate an amount equal to the number of acres on which a qualified recipient/individual landowner is entitled to receive irrigation water under Section 426.6 of Reclamation Reform Act of 1982, as the Section now exists or may hereafter be amended.

SECTION 3. The votes shall be by written or printed ballot, and be voted only by the electors at the polls in person or by written proxy.

SECTION 4. The Board of Directors may make reasonable by-laws for the registration of voters and the method of holding elections.

SECTION 5. At all elections the person receiving the highest number of votes for any office shall be deemed elected to such office.

#### ARTICLE IX.

SECTION 1. The President, Vice-President, Treasurer and Secretary shall perform such duties as are prescribed by these Articles and by the by-laws, wherein such by-laws shall not be inconsistent with the law or with these Articles and shall receive such compensation as may be fixed by the by-laws, which compensation shall neither be increased nor diminished during their respective terms of office.

SECTION 2. In case of the absence, illness, or inability of the President to act from any cause, or in case of a vacancy in that office, the Vice-President shall act in the place and stead of the President.

SECTION 3. The President shall be the chief executive officer of the Association, and shall have general supervision over all other officers of the Association in the performance of their duties as such, and of the conduct of the business and affairs of the Association. He shall preside at all meetings of the Board of Directors and shall perform such other duties as may be devolved upon him by the by-laws.

SECTION 4. All certificates or other evidence of the ownership of shares of stock in the Association issued by the Association shall be signed by the President and Secretary of the Association and shall have the seal of the Association affixed.

SECTION 5. All of the contracts and instruments in writing executed for, or in behalf of the Association, shall be executed in the name of the Association by the President and



Secretary and shall have the seal of the Association affixed.

SECTION 6. The Treasurer shall receive and be the custodian of all moneys and other funds of the Association. No moneys shall be paid out by the Treasurer unless upon warrants drawn on him by the President and Secretary, except as provided in Article XI, Section 8. No warrants shall be drawn on the Treasurer by the President and Secretary except upon the order of the Board of Directors, recorded in the minutes of the Board, and in a warrant record to be kept by the Secretary.

SECTION 7. The Treasurer shall keep a full, complete and accurate account of all moneys of the Association received and disbursed by him, in books belonging to the Association, and shall present a report and account thereof at every regular meeting of the Board, and shall, at the expiration of each quarter, prepare and publish, in such manner as the by-laws may prescribe, a quarterly statement to shareholders showing all such receipts and disbursements during the last preceding quarters; and the Treasurer shall perform such other duties as may be devolved upon him by the by-laws.

SECTION 8. The Secretary shall act as the clerk of the Board of Directors and keep a record of all their proceedings. He shall immediately upon their adoption, record in a book of by-laws to be kept by him in his office, all by-laws adopted, and shall keep such book open to the inspection of any member of the Association, or his properly authorized agent, at all times during business hours. And the Secretary shall perform such other duties as may be devolved upon him by the by-laws.

SECTION 9. The Treasurer and Secretary shall give such bond as may be prescribed by the by-laws; Provided, that neither the President, Vice-President, or any member of the Board of Directors or the Secretary, shall be accepted as a surety on a bond of the Treasurer.

## ARTICLE X.

SECTION 1. The Board of Directors may create such other offices as may be necessary for the carrying on of the business and affairs of this Association, and prescribe the manner of appointment, powers, duties, terms of office, eligibility and compensation thereof by by-laws not inconsistent with these Articles.

SECTION 2. The Board of Directors may remove from office, the Treasurer, Secretary, or the incumbent of any office created by the Board for incompetence, neglect of duty, misappropriation of funds of the Association, or for violation of any of the provisions of these Articles or of any by-law. The Board shall adopt by-laws to govern the procedure for such removal.

## ARTICLE XI.

SECTION 1. The irrigation system which it is the purpose of this Association to acquire, or secure control of, is to consist of a canal to be constructed by the United States Government to furnish water for irrigation and domestic purposes to unwatered lands lying within the boundaries of said Grand Valley Irrigation District, as defined in Section 5, Article IV, hereof, and such diversion works, ditches, laterals, distribution works, power plant, electric transmission lines, pumping plants, telephone system, and other works or structures as are necessary or proper in connection with the construction and maintenance of said irrigation system. The headgate of said canal is to tap the water of the Grand River at a point near the south line of the Northwest quarter of Section thirteen, Township ten South, Range ninety-eight West of the 6th Principal Meridian, whence the canal will extend in a southwesterly direction through the Canyon of the Grand River for a distance of about six miles, thence in a general westerly and northwesterly course between sixty and sixty-five miles to a point near the Excelsior Divide, so called, discharging its waste water into the Grand River or tributaries thereof.

## ARTICLE XII.

Article XII is omitted.

## ARTICLE XIII.

The corporation shall have perpetual existence.

## ARTICLE XIV.

SECTION 1. These articles may be amended in accordance with the provisions of the statutes of the State of Colorado in such case made and provided.

SECTION 2. These articles shall not be so amended as to in anywise conflict with any federal statutes, or the rules and regulations established thereunder relating to the supply of water to the land of shareholders of this Association.

## ARTICLE XV.

SECTION 1. This Association may accept and avail itself of or subject itself to the provision of any law or laws enacted or that may be enacted by Congress, or the Legislative body of the state, which may be applicable to corporations organized for like purposes as this Association. Such acceptance or subjection shall be valid when ratified by at least two-thirds of the shares represented by the votes cast at any annual election or any special election called for the ratification thereof. Notice of such election shall be given in the method prescribed by these Articles and the by-laws of the Association, stating the purpose thereof.

SECTION 2. The undersigned furthermore grants to the United States, over the lands described herein, as may be required in connection with the works constructed or controlled by the United States, for the use and benefit of the stockholders, necessary right-of-way for the construction, operation and maintenance of canals, tunnels, and other water conduits, telephone and electric transmission lines, drains, dikes, and other works for irrigation, drainage and reclamation.

SECTION 3. The undersigned furthermore releases and discharges the United States from damage or claim for damage on account of the construction, operation and maintenance of the canals or other irrigation works built or operated in connection with this project, including consequential damages, except that reasonable compensation will be made for all improvements actually damaged or destroyed by such construction. The undersigned also releases and hereby grants to the United States the right to take, appropriate and use all seepage, waste and spring waters arising on the land herein described and not heretofore appropriated.

#### ARTICLE XVI.

The seal of this Association shall be a figure of two concentric circles, the outer being two inches, and the inner one and one-half inches in diameter. In the space between the two shall be the words "Grand Valley Water Users Association," and bearing within the center space an unrolled scroll with the words and figures therein "Incorporated 1905," "Colorado."

END OF ARTICLES OF INCORPORATION

## Appendix B // GVWUA Bylaws

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BY LAWS OF THE  
GRAND VALLEY WATER USERS' ASSOCIATION

ARTICLE I

Articles of Incorporation.

The object of this Association, territory covered, the qualifications, duties, rights and liabilities of the members of this Association, the number and election of, and the qualifications, duties, rights and liabilities of the Directors of this Association, shall be as provided for and as required and stated in the Articles of Incorporation, and these by-laws.

ARTICLE II

Stockholders.

Section 1. Annual meetings.

The regular annual meeting of the stockholders of this Association shall be held at Grand Junction, Mesa County, Colorado, on the date established in the Articles of Incorporation and at the time set by the Board of Directors.

Section 2. Special meetings.

Special meetings of the stockholders of this Association may be held at any time pursuant to a resolution of the Board of Directors or as otherwise may be provided or required by the laws of the State of Colorado.

Section 3. Notice of meetings.

Notice of all regular and special meetings of the stockholders shall be given as required by the laws of the State of Colorado.

Section 4. Voting.

Only stockholders of record shall be entitled to vote at the regular and special meetings of stockholders. At such meetings each shareholder shall be entitled to one vote for each share of stock held in his name, and only such number of shares as are appurtenant to what is classed as Class 1 acres on the records of the Association. Directors shall be elected in the manner set forth in the Articles of Incorporation.

Section 5. Definition of terms relating to stock and stockholders.

(a) When the words "share," "shares," or "stock" are used in the Articles of Incorporation or these by-laws, they shall be taken to mean, until shares are actually issued, the shares of the capital stock of the

Association agreed to be taken by subscribers (or their successors in interest) for the capital stock of the Association, as shown by the records of the Association, whose subscriptions have not for any reason been canceled or the land for which the subscriptions were made have not been excluded by the United States government from the Grand Valley Project, Colorado.

(b) When the words “shareholder,” “shareholders,” “stockholder,” or “stockholders” are used in the Articles of Incorporation or these by-laws, they shall be taken to mean, until shares are actually issued, subscribers (or their successors in interest) for the stock of the Association, whose subscriptions have not for any reason been canceled or the land for which the subscriptions were made have not been excluded by the United States government from the Grand Valley Project, Colorado.

#### Section 6. Quorum.

For the purpose of determining a quorum only shares of outstanding stock which are appurtenant to land classed as Class 1 acres as specified in Section 4 of this article shall be considered. A majority of such shares of outstanding stock unless otherwise provided in the Articles of Incorporation or by the laws of the State of Colorado shall be necessary to constitute a quorum at all meetings of stockholders. When a quorum is present at any meeting a majority of the stock represented there at unless otherwise provided in the Articles of Incorporation or by the laws of the State of Colorado, shall decide any question brought before such meeting.

#### Section 7. Failure of quorum.

In the event no quorum is present at any meeting the Directors may call another meeting of stockholders as soon as reasonably possible, provided, however, nothing herein contained shall prevent any meeting when a quorum is not present from being adjourned from time to time for the purpose of securing a quorum.

#### Section 8. Proxies.

Any stockholder entitled to vote may be represented at any regular or special meeting of stockholders by a duly appointed proxy. The Association shall prepare a standard proxy appointment form, which form shall be approved by the Board of Directors and made available to stockholders. The appointment of a proxy shall be made using the association’s approved proxy appointment form. The proxy appointment form shall be signed by the stockholder making the appointment, but shall require no other attestation. No proxies shall be recognized unless the proxy appointment form is executed within eleven months of the date of the meeting at which the form is presented. Any individual appointed as a proxy must be a stockholder in the Association and must be present at the meeting to vote the shares under such proxy. If an individual appointed as

a proxy is not present at a meeting to vote the shares under the proxy, the members of the board of Directors who are present at the meeting at which the proxy is to be voted shall be deemed to have been appointed as the proxies to vote the shares of the stockholder who signed the proxy appointment form. Such shares shall be split evenly between the members of the Board of Directors who are present at the meeting.

#### Section 9. Registration Committee.

To facilitate stockholders elections, whether general or special, there shall be hereafter a standing committee of three known as the Registration Committee, consisting of the Secretary and two other persons to be selected by the Board of Directors. The Registration Committee shall register and tabulate proxies and voters before the time of holding any stockholders' election and shall collect, tabulate and announce the votes cast at any stockholder' election.

#### Section 10. Time of filing of proxies.

All proxy appointment forms signed by any shareholder shall be delivered to the Registration Committee at least 1 hour prior to the start of the stockholder's meeting at which the proxy is to vote.

#### Section 11. Tabulation of proxies.

The Registration Committee shall register all proxies and persons entitled to vote and to what extent, either in person or by proxy and shall in a systematic way register and tabulate said voters and votes so the same may be readily cast at such meeting and shall report the result at the opening of the stockholders' meeting, and if said report is not unanimous, majority and minority reports or a report from each member may be reported to the stockholders' meeting and in such an event, the stockholders at the meeting shall decide the legal voters and proxies reported.

#### Section 12. Judges of election.

The presiding officer at a stockholders meeting shall appoint a committee of three members to act as the judges of election. They shall not be candidates for election as Directors. They shall provide a ballot box to be used at the meeting. Each ballot shall state the names of candidates voted for, and the number of votes for each, and shall be signed by the elector. The committee shall furnish the blank ballot, and count and report the result of the vote.

#### Section 13. Order of business.

The order of business at the regular annual meeting and so far as possible at all other meetings of stockholders shall be as set by the board of Directors.

Section 14. Officers of meetings.

The President, if present, shall preside at all meetings of the stockholders. In his absence the Vice-President shall preside. If both President and Vice-President are absent a presiding officer shall be elected by the members present. The Secretary shall keep or cause to be kept a faithful record of the proceedings of all stockholders meetings.

ARTICLE III

Directors

Section 1. Number and authority

There shall be eleven members of the Board of Directors. The Board of Directors shall be elected in accordance with the Articles of Incorporation of the Association and shall be elected to serve for their ensuing term and until the election of their respective successors. The Board of Directors shall have entire charge of the property, interests, business and transactions of the Association, with full power and authority to manage and conduct the same.

Section 2. Classes of Directors.

(a) There shall be three classes of directors, as follows:

(i) Class A: Class A shall consist of the three directors elected for one year terms at the election of the Board of Directors held in 2007 and their successors. After the expiration of the initial one year term for Class A directors, all future terms for Class A directors shall be for a period of three years as set forth in the Articles of Incorporation. Thus, the initial term for Class A directors expired in 2008, the next term for Class A directors will expire in 2011, and subsequent terms shall expire every three years thereafter.

(ii) Class B: Class B shall consist of the four directors elected for two year terms at the election of the Board of Directors held in 2007 and their successors. After the expiration of the initial two year term for Class B directors, all future terms for Class B directors shall be for a period of three years as set forth in the Articles of Incorporation. Thus, the initial term for Class B directors will expire in 2009, the next term for Class B directors will expire in 2012, and subsequent terms shall expire every three years thereafter.

(iii) Class C: Class C shall consist of the four directors elected for three year terms at the election of the Board of Directors held in 2007 and their successors. All future terms for Class C directors shall also be for a period of three years as set forth in the Articles of Incorporation. Thus, the initial term for Class C directors will expire in



2010, the next term for Class C directors will expire in 2013, and subsequent terms shall expire every three years thereafter.

(b) The sole purpose of having three classes of directors is to maintain the staggered terms for directors as mandated by the amendments to the Articles of Incorporation adopted in 2007. The directors of all classes of directors shall otherwise have equal rights, duties and responsibilities.

(c) If no quorum is present for the annual meeting of stockholders at which members of the Board of Directors are elected, incumbent members of the Board of Directors whose terms have expired shall continue to serve until the election of their successors or until their re-election at an annual meeting where a quorum is present. When such an election occurs, the persons elected to the Board of Directors shall serve the remaining term of the class of directors to which they were elected. For example, no quorum was present for the annual meeting scheduled for 2008. Thus, the Class A directors whose terms expired in 2008 shall continue to serve until their successors are elected or until they are re-elected at an annual meeting where a quorum is present. If this occurs at the annual meeting in 2009, the Class A directors elected at the 2009 annual meeting will serve until 2011, which is the expiration date of the next Class A term.

(d) If no quorum is present for two or more consecutive annual meetings, two or more classes of directors will be up for election at the next annual meeting at which a quorum is present. In such case, the directors shall fill the open positions in the various classes up for election based on the number of votes received by each director. The directors receiving the fewest number of votes at the annual meeting will be elected to the class of directors with the shortest remaining term, the directors receiving the next fewest number of votes at the annual meeting will be elected to the class of directors with the next shortest remaining term, and so forth.

### Section 3. Resolving tie votes.

Any tie votes in the election for members of the Board of Directors shall be resolved by lot with the judges of election committee conducting a random drawing.

### Section 4. Qualifications.

No person shall be elected, nor shall be competent to act as a Director of the Association unless possessing the qualifications prescribed in the Articles of Incorporation of the Association.

### Section 5. Vacancies.

Any vacancy occurring in the Board of Directors shall be filled for the unexpired term by a majority of the remaining members. In the event of the membership of the Board falling below the number necessary for a quorum, a special meeting of the stockholders shall be called and such number of Directors shall be elected thereat to restore the membership of the Board to its full number.

#### Section 6. Regular meetings.

The regular meetings of the Board of Directors shall be held in the office of the Association in the City of Grand Junction, Colorado, monthly at the date and time set by the Board of Directors. If deemed expedient however the Board may meet any time or place, provided the place is designated in the notice of the meeting.

#### Section 7. Special meetings.

Special meetings of the Board of Directors may be held at any time on the call of the President, providing each member of the Board be given notice of the time, place and purpose of meeting at least 24 hours prior thereto. Special meetings may be held at any time and place and without notice by unanimous consent of the Board.

#### Section 8. Quorum.

A majority of the Board of Directors shall constitute a quorum and a majority vote of the members in attendance at any Board meeting shall in the presence of a quorum, decide its action. A minority of the Board present at any regular or special meeting may, in the absence of a quorum, adjourn to a later date, but may not transact any business until a quorum has been secured.

#### Section 9. Election of officers.

At the first meeting of the Board of Directors after the election of directors each year a President, Vice-President, Secretary, Treasurer or other officers shall be elected to serve for the ensuing year and until the election of their respective successors. Election shall be by ballot and a majority of the votes cast shall be necessary to elect. The Secretary and the Treasurer need not be stockholders.

#### Section 10. Compensation of Directors, officers and employees.

The Board of Directors shall fix the compensation of Directors, officers and employees.

#### Section 11. Order of business.

The regular order of business at meetings of the Board of Directors shall be as set by the Board of Directors.

#### Section 12. Auditing

An independent auditor shall be retained to examine the books of the Association, and shall report their findings at the annual meeting of the stockholders.

Section 13. Bonds of officers and employees.

The Board shall have the power to require any officer or employee to give any and all bonds for the protection of the Association as it may deem necessary or desirable.

ARTICLE IV  
Revenues.

Section 1. Raising of revenues.

The Board of Directors for the purpose of raising revenues to meet any and all obligations of the Association are empowered to and shall make all necessary levies or assessments against shares of stock of the Association and / or establish charges for water and other services all to the end that there may be sufficient funds available to promptly meet when due any and all obligations of the Association as aforesaid, to be done as provided by the laws of Colorado or by any contract between the United States and the Association.

Section 2. Payment of assessments and service charges.

Any order or resolution levying any such assessments or establishing charges for water or other services shall specify the time or times when the same shall be payable and shall be levied or established sufficiently in advance of the date of payment so as to permit of collection thereof in an orderly and business-like manner on or before the time when due.

Section 3. Amount of Assessments and service charges.

In determining the amount of any such assessments and / or water or other service charges reasonable allowance for estimated deficits caused by the failure of some stockholders to pay the same shall be made.

Section 4. Notice of assessment.

The Secretary on or before fifteen days in advance of the date of payment shall notify each shareholder of any and all such assessments and of the amount thereof and the time payable either personally or by depositing the same in the postoffice, postage paid, addressed to the stockholder at his last known address as shown by the records of the Association.

Section 5. Interest on delinquent assessments.

All assessments shall bear interest at a rate to be fixed when the assessment is made from the date due until paid.

## ARTICLE V

### Section 1. Remedies in General.

The Association shall have all remedies provided by its Articles of Incorporation, in contracts between the Association and the United States, and by law against its stockholders for non-payment of levies, assessments, charges for water service and other services, and any other amounts due to the Association (referred to herein as "Amounts Due"). The delinquent stockholder shall also pay all costs and expenses, including without limitation court costs and attorneys' fees, incurred by the Association in enforcing and collecting the Amounts Due and in exercising the remedies available to it (referred to herein as "Collection Costs"), and interest as specified in Section 2, below. All remedies shall be exercised in accordance with and in compliance with the Association's Articles of Incorporation, the contracts between the Association and the United States, and applicable law. All remedies available to the Association shall be cumulative, and the exercise of one remedy does not preclude the exercise of other available remedies.

### Section 2. Interest.

All Amounts Due shall bear interest at the rate of twelve percent (12%) per annum from the due date until paid in full by or on behalf of the delinquent stockholder. All Collection Costs shall bear interest at the rate of twelve percent (12%) per annum from the date such costs were paid by the Association until paid in full by or on behalf of the delinquent stockholder. All interest accruing on Amounts Due and on Collection Costs shall be referred to herein as the "Interest." The amount of Interest to be charged on Amounts Due and on Collection Costs may be revised from time to time by resolution of the Board of Directors of the Association.

### Section 3. Specific Remedies.

Remedies available to the Association for collection of Amounts Due, Collection Costs and Interest include the following:

(a) All Amounts Due, together with Collection Costs and Interest, shall be a lien on the delinquent stockholder's stock in the Association and on the land of the of the delinquent stockholder to which such stock is appurtenant (collectively referred to herein as the "Liened Property"), until the Amounts Due, Collection Costs and Interest are paid in full. This lien may be foreclosed and the Liened Property may be sold in the manner provided by applicable Colorado law for the foreclosure of mortgages.

Every published notice in such foreclosure proceedings shall include a statement to the effect that any purchaser at the foreclosure sale shall purchase the Liened Property subject to the lien of the Association for any Amounts Due that are not included in the foreclosure proceeding and subject to the lien of any future levies, assessments, charges for water service and other services, and any other amounts due to the Association. Every purchaser under the foreclosure proceedings shall take title to the Liened Property subject to the continuing lien of the Association and/or the United States as provided in the Association's Articles of Incorporation, the contracts between the Association and the United States, the subscriptions for stock to the Association and/or applicable law.

(b) The Association may refuse to deliver water to the delinquent stockholder until the Amounts Due, together with all Collection Costs and Interest, have been paid in full. If at any time water is being delivered to a delinquent stockholder, the Association may shut off the water to the stockholder and keep the water shut off until the Amounts Due, together with all Collection Costs and Interest, have been paid in full.

(c) The Association may maintain an action against the delinquent stockholder in a court with jurisdiction for collection of the Amounts Due, together with Collection Costs and Interest.

(d) The Association may forfeit all of the delinquent stockholder's stock in the Association. Prior to forfeiting a stockholder's stock in the Association, the Association shall send a written notice to the stockholder demanding payment of all Amounts Due, Collection Costs and Interest and specifying the date the forfeiture is to take effect. This notice shall be sent by first class mail to the address of the stockholder as shown in the records of the Association at least thirty days prior to the date the forfeiture is to take effect. If all Amounts Due, Collection Costs and Interest are paid prior to the date the forfeiture is to take effect as specified in the notice, the stock shall not be forfeited.

(e) The Association shall also be entitled to exercise any other remedy available to it under its Articles of Incorporation, in contracts between the Association and the United States, or by law.

#### Section 4. Enforcement by the United States.

To the extent provided in the contracts between the Association and the United States, the United States shall be allowed to exercise the rights and remedies of the Association as set forth in this Article V.

ARTICLE VI  
Amendments.

Section 1. Amendment of Articles of Incorporation.

Amendment may be made to the Articles of Incorporation in the manner provided by law.

Section 2. Amendment to by-laws.

The Board of Directors may amend, alter, add to or repeal these by-laws subject only to the limitations provided by the Articles of Incorporation or by any contract between the United States and the Association.

ARTICLE VII  
Repeal of former by-laws.

Section 1.

Any and all by-laws heretofore adopted and in force are hereby repealed and these by-laws or as they may hereafter be amended, shall constitute the sole and only by-laws of the Association and shall take effect immediately upon their adoption.

Resolution To Adopt These By Laws

Was Made On December 4, 2008

Grand Valley Water Users'  
Association

ATTEST:

D. Kim Albertson  
President, Board of Directors

Daniel E. Cronk  
Secretary

## Appendix C // Selected Contracts

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// Contract No. 08-WC-40-313

Concerning Fish Passage at the Grand Valley  
Diversion Dam and the Fish Screen on the  
Government Highline Canal



April 11, 2013

Contract No. 08-WC-40-313  
Grand Valley Water Users Association  
Fish Passage and Screen

Exhibits B and C (Letter(s) of Concurrence) in the following executed contract have not been signed. Transfer of O&M via these letters will be finalized within the near future upon the hiring of the new manager. To follow-up on the status of this action, contact Tom Fowlds.

Once this has occurred, re-scan the contract with the executed Letter(s) of Concurrence.

S. Caskey

**AGREEMENT  
AMONG  
GRAND VALLEY WATER USERS ASSOCIATION  
U.S. BUREAU OF RECLAMATION, AND  
U.S. FISH AND WILDLIFE SERVICE  
CONCERNING FISH PASSAGE AT THE  
GRAND VALLEY DIVERSION DAM  
AND  
THE FISH SCREEN ON THE  
GOVERNMENT HIGHLINE CANAL  
TO  
FACILITATE RECOVERY OF ENDANGERED FISH SPECIES IN THE COLORADO  
RIVER BASIN**

THIS AGREEMENT, is made this 5 day of June, 2008, pursuant to the Reclamation Act of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, particularly the Colorado River Storage Project Act of April 11, 1956 (70 Stat. 105); Section 2 of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667); Sections 2(c)(2), 4(f), 6, and 7 of the Endangered Species Act (16 U.S.C. 1531 et seq.); and the Act to Authorize the Bureau of Reclamation to Provide Cost Sharing for the Endangered Fish Recovery Implementation Programs for the Upper Colorado and San Juan River Basins [Act of October 30, 2000 (114 Stat. 1602, Public Law 106-392) as amended in Public Law 107-375 dated December 19, 2003]] (Public Law 106-392), among the **UNITED STATES BUREAU OF RECLAMATION (Reclamation); the UNITED STATES FISH AND WILDLIFE SERVICE (Service); and the GRAND VALLEY WATER USERS ASSOCIATION (Association)**, a Colorado nonprofit corporation;

WITNESSETH, that:

A. WHEREAS, the Grand Valley Project (Project) was reported upon in accordance with the act of June 25, 1910 (36 Stat. 835), approved by the President on January 5, 1911 and constructed pursuant to the Act of Congress dated June 17, 1902 (32 Stat. 388), as amended, and

B. WHEREAS, the Association Operates and Maintains the Project pursuant to an amendatory contract with Reclamation dated January 27, 1945, and amended April 27, 1964 (Symbol No. Ilr-644), and

C. WHEREAS, the Colorado River has been designated critical habitat for four endangered fish species (Colorado pikeminnow, humpback chub, bonytail and razorback sucker), and the Roller Dam (as hereinafter defined) is situated within critical habitat for Colorado pikeminnow and razorback sucker and is a physical barrier to the access and migration of endangered species up and down the Colorado River; and

D. WHEREAS, the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program as hereinafter defined) is implemented by a "Cooperative Agreement for Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin," signed in January of 1988 and amended December 6, 2001, by the Secretary of the Department of the Interior, the Governors of the States of Colorado, Utah, and Wyoming, and the Administrator of the Western Area Power Administration. The goal of the Recovery Program is to recover the four species of endangered fish while allowing water development to proceed consistent with state water law and in compliance with the Federal Endangered Species Act in the Upper Basin states of Colorado, Utah, and Wyoming; and

E. WHEREAS, Reclamation and the Service are entering into this Agreement as participants of the Recovery Program pursuant to the 2001 Cooperative Agreement, as amended, for the Upper Colorado River Basin Recovery Implementation Program and Public Law 106-392; and

F. WHEREAS, Public Law 106-392 authorizes Reclamation to, among other things, provide cost sharing for capital construction projects under the Recovery Program. Public Law 106-392 also authorizes Reclamation to use power revenues to provide up to \$4 million per year to fund recovery monitoring, research, operation, maintenance, replacement, and modification of capital project features through Federal fiscal year 2011. Furthermore, Public Law 106-392 provides for monitoring, operation, maintenance, and replacement funding beyond 2011; and

G. WHEREAS, the Recovery Program desires to minimize the potential for Incidental Take (as hereinafter defined) and restore habitat by constructing a Fish Passage (as hereinafter defined), a Fish Screen (as hereinafter defined) and associated facilities as outlined in the Recovery Program's Recovery Action Plan. The Recovery Program approved the construction of the Fish Screen at the Government Highline Canal (as hereinafter defined) and the Fish Passage at the Roller Dam; and

H. WHEREAS, the Fish Passage was constructed (Contract No. 03-CC-40-8032) to provide the endangered fish species access to portions of their designated critical habitat. Reclamation, on behalf of the Recovery Program, and pursuant to Public Law 106-392, constructed the Fish Passage at the Roller Dam. The parties agree that the Fish Passage shall become part of the Project Works (as hereinafter defined). The Fish Passage shall be Maintained and/or Modified by the Association and shall be Operated by the Service, pursuant to the terms and conditions of this Agreement as set forth herein; and

I. WHEREAS, the Fish Screen was constructed (Contract No. 04-CC-40-8101) to prevent the endangered fish species from becoming entrained in the portions of the Government Highline Canal located downstream of the Fish Screen. Reclamation, on behalf of the Recovery Program, and pursuant to Public Law 106-392, constructed the Fish Screen within the Government Highline Canal. The parties agree that the Fish Screen shall become part of the Project Works. The Fish Screen shall be Operated, Maintained, and/or Modified by the Association, pursuant to the terms and conditions of this Agreement as set forth herein; and

NOW, THEREFORE, for the promises set forth herein, and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

1. Definitions. As used in this Agreement (including the Recitals):

(a) "Recovery Program" shall mean the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, as authorized by Public Law 106-392 and as defined in the "Cooperative Agreement for Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin" signed in January of 1988 and amended December 6, 2001.

(b) "Fish Screen" shall mean the fish screen and associated structures, including but not limited to all areas disturbed during construction of the Fish Screen structure, spoil piles, operation and maintenance road, drainage structures and ditches, described in Reclamation's construction plans and solicitation No. 04-SP-40-8101, including manufacturer literature and construction as-built drawings. The Fish Screen shall be Operated, Maintained, and Modified by the Association pursuant to the terms and conditions of this Agreement.

(c) "Fish Passage" shall mean the fish passage structure and associated facilities constructed by Reclamation in accordance with Reclamation's construction plans and solicitation No. 03-SP-40-8032, including manufacturer literature and construction as-built drawings. The Fish Passage shall be Operated by the Service and Maintained and Modified by the Association pursuant to the terms and conditions of this Agreement.

(d) "Maintenance" or "Maintain" shall mean reasonable and necessary care and repair, including unanticipated, extraordinary or emergency care, and repair that are necessary for long-term Operation of a facility or structure in good and efficient condition and for the purposes for which the facility or structure was constructed.

(e) "Operation" or "Operate" shall mean the day-to-day control and operation of a facility or structure necessary to ensure that such facility or structure functions as intended and designed.

(f) "Modification" or "Modify" shall mean any major change, alteration, or addition to or removal from the Fish Passage and/or Fish Screen as originally constructed that shall accomplish at least one of the following: 1) Improve fish passage; 2) Reduce Incidental Take; 3) Decrease injury to fish; 4) Reduce long-term Operation and Maintenance expenses; 5) Improve water flows; 6) Improve personal safety; 7) Restore or improve the proper and/or efficient Operation of the structure; and/or 8) Increase security.

(g) "Operation and Maintenance Year" shall mean October 1 of each year through the following September 30.

(h) "Project Works" shall mean the Government Highline Canal, the Roller Dam, the Grand Valley Water Management Improvements, Salinity Program Improvements, and associated facilities, including but not limited to the Fish Passage and Fish Screen.

(i) "Government Highline Canal" shall mean the Grand Valley Project's water delivery canal, located on the north side of the Colorado River, and extending from the Roller Dam to its terminus at Badger Wash near Mack, Colorado.

(j) "Roller Dam" shall mean the Grand Valley Project Diversion Dam, located on the Colorado River approximately eight river miles east of the Town of Palisade, Colorado.

(k) "Cameo Water Rights" are the water rights listed on Exhibit A, attached hereto, which water rights are diverted from the Colorado River at the Roller Dam.

(l) "Scope of Work" shall mean a description of work activities including a schedule for the performance of the identified work activities; listing of required labor, supplies, materials, services, equipment and other direct and indirect cost items required to accomplish the work activities; and associated cost estimate. Scope(s) of Work shall be used as the vehicle to request funding from the Recovery Program.

(m) "Biological Opinion" shall mean the Final Biological Opinion for the Proposed Grand Valley Endangered Fish Passage Facilities dated November 6, 2002, which includes: 1) the opinion of the Fish and Wildlife Service or the National Marine Fisheries Service as to whether or not a Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat; 2) a summary of the information on which the opinion is based; and 3) a detailed discussion of the effects of the action on listed species or designated critical habitat. [50 CFR §402.02, 50 CFR §402.14(h)]

(n) "Incidental Take" shall mean the take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant. [50 CFR §402.02]

(o) "Contracting Officer" shall mean the Reclamation employee authorized to oversee this Agreement.

2. Transfer of Fish Passage and Fish Screen from Construction Status to Operation and Maintenance Status.

(a) Pursuant to the terms of this Agreement, the Association shall Operate, Maintain, and/or Modify the Fish Screen, the Association shall Maintain and Modify the Fish Passage, and the Service shall Operate the Fish Passage. The following shall occur prior to the transfer of responsibility for the Operation, Maintenance, and/or Modification of the Fish Screen and Maintenance and/or Modification of the Fish Passage to the Association, and the Operation of the Fish Passage to the Service:

(1) As soon as reasonably possible after the execution of this Agreement, the parties to this Agreement shall inspect these facilities and jointly prepare a punch list of items needing to be repaired, replaced, or Modified, and with the estimated costs of such activities. The parties shall also identify any additional items, beyond the scope of the original construction plans and Solicitations No. 03-SP-40-8032 (Fish Passage) and No. 04-SP-40-8101 (Fish Screen), that they believe are necessary for the proper and efficient Operation of the Fish Passage and Fish Screen. The punch list and list of additional items shall be submitted to the Recovery Program for review and approval.

(2) Upon notification from the Recovery Program of its approval of the punch list and/or any additional items, Reclamation shall complete the needed repairs, replacements and/or Modifications with funds authorized by Public Law 106-392.

(3) Upon execution of this Agreement, Reclamation shall provide the Designer's Operating Criteria, final construction report, all applicable manufacturer's literature and construction as-built drawings for the Fish Passage and Fish Screen to the Association.

(4) Upon execution of this Agreement, Reclamation shall provide all applicable manufacturer's literature and Designer's Operating Criteria for the Fish Passage to the Service.

(b) Upon completion of the procedures set forth in Paragraph 2(a) herein:

(1) Reclamation shall transfer to the Association and the Association shall accept the responsibility for the Operation, Maintenance, and/or Modification of the Fish Screen and the Maintenance and/or Modification of the Fish Passage, as set forth in Paragraph 10 herein. Such transfer of responsibility shall be evidenced by a document, in the form attached as Exhibit B, prepared and signed by Reclamation and the Association concurring that the transfer has occurred, which concurrence shall not be unreasonably withheld. A copy of such document shall be provided to the Service.

(2) Reclamation shall transfer to the Service and the Service shall accept the responsibility for the Operation the Fish Passage, as set forth in Paragraph 9 herein. Such transfer of responsibility shall be evidenced by a document, in the form attached as Exhibit C, prepared and signed by Reclamation and the Service concurring that the transfer has occurred, which concurrence shall not be unreasonably withheld. A copy of such document shall be provided to the Association.

(3) Upon execution of this Agreement and both of the transfer documents referred to in Paragraph 2(b) herein, the Fish Passage and Fish Screen shall be included as "Project Works."

(4) Upon transfer of the Operation and/or Maintenance for the Fish Passage and Fish Screen to the Association, the title to the Fish Passage and Fish Screen shall remain in the name of the United States, unless otherwise provided by the Congress of the United States.

3. Right of Reasonable Access to Fish Passage and Fish Screen.

(a) Reclamation hereby grants to the Service, its representatives, employees, contractors, agents, successors, and/or assigns, the right of reasonable ingress to and egress from the Fish Passage to perform its duties under this Agreement, as provided for in Paragraph 9 herein, subject to the following terms and conditions:

(1) This grant shall be effective upon the transfer of Operation responsibilities to the Service, as provided in Paragraph 2(b) herein.

(2) The Service's access to the Fish Passage shall be provided by the acceleration and deceleration lanes through gates specifically constructed for that purpose, along Interstate 70 adjacent to the Fish Passage, in accordance with the procedures set forth in Exhibit D.

(3) The Service shall contact the Association office by telephone prior to visiting the Fish Screen.

(b) The Association has the right of reasonable ingress to and egress from the Fish Passage and Fish Screen under Contract No. Ilr-644 with Reclamation.

(c) In the event of any situation that may interfere with any party's reasonable access to the Fish Passage and/or Fish Screen, the party with knowledge of the situation shall contact by telephone all of the other parties within twenty-four (24) hours to notify them of the situation. All parties agree to cooperate with each other to resolve the situation and restore access to the Fish Passage and/or Fish Screen.

(d) If determined necessary by the Service, Reclamation shall grant the Service, its representatives, employees, contractors, agents, successors and/or assigns, the right of reasonable access to the Project Works to install, operate, maintain, repair and/or replace fish monitoring and/or tracking equipment on the Project Works. Such access rights and the rights of the Service to install, operate, maintain, repair and/or replace the monitoring and/or tracking equipment shall be subject to the provisions of Paragraph 9(d), herein.

4. Reimbursement of the Association's Operation and/or Maintenance and Modification Expenses.

(a) Upon completion of the transfer of Operation, Maintenance, and/or Modification of the Fish Screen and Maintenance and/or Modification of the Fish Passage, Reclamation and the Association shall prepare an initial Operation and Maintenance Scope of Work to cover the Association's short-term expenses for its Operation, Maintenance and Modification of the Fish Screen and the Maintenance and Modification of the Fish Passage until the Association's first annual Scope of Work has been submitted and approved pursuant to Paragraph 10(c) herein.

(b) Upon written notification to the Association by the Recovery Program of its approval of the Association's initial Scope of Work or approval of the annual Scope of Work, Reclamation, acting on behalf of the Recovery Program, shall reimburse the Association for its Operation, Maintenance and Modification of the Fish Screen and Maintenance and Modification of the Fish Passage as follows:

(1) No more frequently than monthly, the Association shall prepare and submit to Reclamation, acting on behalf of the Recovery Program, an itemized bill including, but not limited to, copies of all invoices, bills, and receipts for the Association's Operation and/or Maintenance and/or Modification expenditures in the approved Scope of Work.



(2) As soon as possible but no later than 60 days after its receipt of the itemized bill, as identified in paragraph 4(b)(1), Reclamation, acting on behalf of the Recovery Program, shall reimburse the Association for expenditures as approved in the Scope of Work.

(3) Reimbursement requests for expenditures not approved in the Scope of Work shall be handled under paragraph 10(c)(5) herein.

5. Operation of Fish Passage and Fish Screen.

(a) The intent of the parties to this agreement is to first use unappropriated water, when available under the administration of the Division Engineer for Water Division 5, for the Operation of the Fish Screen and Fish Passage. When unappropriated water is not available, storage water, including but not limited to, water stored in Green Mountain, Ruedi, Williams Fork and Wolford Mountain reservoirs, to the extent legally available, shall be used to Operate the Fish Screen and Fish Passage.

(b) The parties agree to temporarily discontinue the Operation of the Fish Screen and/or the Operation of the Fish Passage if any one or more of the following conditions occur:

(1) There is insufficient flow in the Colorado River or storage water to Operate the Fish Passage and/or Fish Screen and allow the Association to divert and utilize all of the Cameo Water Rights.

(2) Mechanical failure of the Fish Passage and/or Fish Screen.

(3) The Fish Screen becomes blocked by ice, vegetation, silt, trash, or other cause to the extent the Association cannot divert all of the Cameo Water Rights.

(4) As necessary during Operation, Maintenance or Modification activities of the Project Works.

(c) In the event that Operation of the Fish Passage and/or the Operation of the Fish Screen are temporarily discontinued pursuant to Paragraph 5(b) herein, the parties agree to resume Operation when the flows have increased and/or the condition causing the temporary cessation in Operations has been corrected.

(d) The Association and/or Service shall notify all of the parties by telephone no later than the next day of any activity adversely affecting the Operation of the Fish Passage and/or Fish Screen for a period of twenty-four (24) hours or greater to consult regarding the nature and duration of the activity so that the Operation of the Fish Passage and/or Fish Screen

can be resumed as soon as possible. The Association shall keep a log of any activity adversely affecting the Operation of the Fish Passage and/or Fish Screen for periods of twenty-four (24) hours or greater and provide this information annually to Reclamation. This information shall be included in Reclamation's annual report for the Recovery Program.

6. Protection of Water Rights

The Operation, Maintenance and Modification of the Fish Passage and Fish Screen under this Agreement, and all work under approved Scopes of Work, shall be conducted in a manner that does not interfere with or otherwise adversely affect the right and ability of the Association to divert at the Roller Dam all water available under the Cameo Water Rights and all other water which is entitled to be diverted at the Roller Dam by contract or otherwise, and to transport such water in the Government Highline Canal to the places of use of such water. Notwithstanding anything to the contrary set forth in this Agreement, nothing in this Agreement shall be construed or interpreted to allow any interference or adverse effect on the right and ability of the Association to divert and transport such water.

7. Modifications to Fish Screen and Fish Passage.

(a) If the Association and/or Reclamation believe that a Modification to the Fish Passage and/or the Fish Screen is necessary to provide for the proper, safe or efficient Operation or Maintenance of the Project Works, the party proposing the Modification shall provide notice in writing to the other parties to this Agreement of the suggested Modification and provide details concerning the suggested Modification, the need therefore, and the party proposed to be responsible for making the Modification (the Association or the Service). If the other parties agree that the suggested Modification should be made in the manner set forth by the party proposing the Modification, the party responsible for making the Modification shall include the Modification in that party's next annual Scope of Work. If the other parties disagree with a suggested Modification, the parties shall negotiate in good faith to resolve the concerns regarding the Modification, and if such concerns are resolved, the party responsible for making the Modification shall include the Modification, as revised, in that party's next annual Scope of Work. If the Modification is approved by the Recovery Program as part of an annual Scope of Work, the Modification shall be made by the party responsible for the Modification in accordance with the approved Scope of Work, subject to the remaining terms and conditions of this Agreement.

(b) If the Service believes that a Modification to the Fish Passage and/or the Fish Screen is necessary to protect the four endangered species, referenced in Whereas C herein, and/or to improve personal safety, it shall notify the Association and Reclamation in writing of the suggested Modification and provide details concerning the suggested Modification, the need therefore, and the party proposed to be responsible for making the Modification (the Association

or the Service). If the Association and Reclamation agree that the Modification can be made without adversely affecting the Operation and Maintenance of the Project Works, and if they agree with the designation of the party responsible for making the Modification, the party responsible for making the Modification shall include the suggested Modification in that party's next annual Scope of Work. If the Association or Reclamation disagrees with a Modification to the Fish Screen as suggested by the Service, the parties shall negotiate in good faith to resolve the concerns regarding the Modification, and if such concerns are resolved, the party responsible for making the Modification shall include the suggested Modification, as revised, in that party's next annual Scope of Work. If a Modification to the Fish Screen is approved by the Recovery Program as part of the annual Scope of Work, the Modification shall be made by the party responsible for making the Modification in accordance with the approved Scope of Work, subject to the remaining terms and conditions of this Agreement.

8. Reclamation's Duties and Responsibilities.

(a) Reclamation, as a federal agency participating in the Recovery Program, shall work on behalf of the Recovery Program to implement this Agreement.

(b) If requested by the Association, Reclamation shall assist the Association in preparing the annual Scope of Work for the Association's Operation, Maintenance and Modification of the Fish Screen and its Maintenance and Modification of the Fish Passage as set forth in Paragraph 10 herein.

(c) Reclamation shall assist the Service in seeking and obtaining long-term funding for the Recovery Program to fulfill the funding obligations under this Agreement.

(d) The Fish Screen and the Fish Passage shall be included in Reclamation's Review of Operation and Maintenance Program Examination of Associated Facilities (Directive and Standard, FAC 01-04) and shall be periodically examined by Reclamation to determine the condition of the Fish Screen and Fish Passage and the adequacy of the Operation and Maintenance program for these structures.

9. The Service's Duties and Responsibilities

(a) The Service shall be responsible to ensure that the Operation of the Fish Passage shall be conducted in a manner that is in compliance with the Biological Opinion (as herein defined), the Incidental Take Statement set forth in the Biological Opinion, and this Agreement. The Service shall work on behalf of the Recovery Program to implement this Agreement, and it shall be responsible for Operation of the Fish Passage except as otherwise provided in Paragraph 10(b) herein. The Service may also be responsible for Modifications to the Fish Passage and the Fish Screen to the extent provided in Paragraph 7(b) herein.

(b) The Service shall notify the Association by telephone prior to every startup of the Fish Passage and prior to adjusting attractor flows or other water flows through the Fish Passage, in order to allow the Association to coordinate the Operation of the Project Works, including without limitation the Fish Screen, with the Operation of the Fish Passage.

(c) The Service shall be responsible for submitting a Scope of Work to secure funding through the Recovery Program for the Operation of the Fish Passage under this Agreement.

(d) If the Service determines that fish monitoring and/or tracking instrumentation equipment is needed on any of the Project Works, the Service shall so notify the Association and Reclamation in writing. The notice shall include a description of the equipment that the Service believes is needed and when it intends to install the equipment. The Service shall coordinate the locations of the equipment and the access routes to such locations with the Association and Reclamation, and such locations and access routes shall be subject to the approval of both the Association and Reclamation. The Service shall purchase, install, operate, maintain, repair and replace all of such equipment at no expense to the Association or Reclamation. The Service shall exercise its access rights and perform all activities relating to the installation, operation, maintenance and repair of the equipment in a manner that does not interfere with the Operation and Maintenance of the Project Works. The Service shall contact the Association by telephone prior to undertaking any activities relating to the installation, operation, maintenance and repair of the equipment. If any of the equipment is to be located on property that is not owned by Reclamation or the Association, the Service shall be responsible for acquiring any necessary access.

(e) The Service and its representatives, employees, contractors, agents, successors, and/or assigns shall take all reasonable precautions not to disturb or damage the Project Works, and the Service will not interfere with the Operation and Maintenance of the Project Works or the diversion, transportation and delivery of water under the Cameo Water Rights. The Service shall act in good faith to repair any damages to real property and personal property of the Association and/or Reclamation resulting from its activities under or pursuant to this Agreement, contingent upon appropriation or allotment of funds.

(f) The Service shall assist Reclamation in seeking and obtaining long-term funding from the Recovery Program to fulfill the funding obligations under this Agreement.

10. The Association's Duties and Responsibilities

(a) Upon completion of the transfer of Operation, Maintenance and Modification responsibilities for the Fish Passage and Fish Screen pursuant to Paragraph 2 herein, the Association shall be responsible for Operation and Maintenance of the Fish Screen and the Maintenance of the Fish Passage. The Association may also be responsible for Modification to the Fish Screen and to the Fish Passage to the extent provided in Paragraph 7 herein.

(b) In the event the Association anticipates that future flows in the Colorado River shall not be sufficient to provide adequate attractor flows at the Fish Passage, Fish Passage flows and/or Fish Screen return flows and also to allow the Association to divert the full amount of the Cameo Water Rights, the Association shall promptly notify all of the parties to this Agreement by telephone. Upon notice by the Association, the Service shall be entitled to work with the Division 5 Engineer's Office and other third parties to obtain releases of water from the sources identified in Paragraph 5(a) herein to provide adequate attractor flows at the Fish Passage, Fish Passage flows and/or Fish Screen return flows. However, in the event adequate water is not made available for these purposes, the parties agree to temporarily discontinue the Operation of the Fish Screen and/or the Operation of the Fish Passage pursuant to the provisions of Paragraphs 5(b), 5(c), and 5(d) herein. Determination of when sufficient water is available to supply all required flows shall be made by the Association in consultation with the Division 5 Engineer's Office.

(c) Annually, the Association shall prepare and submit to the Recovery Program for review and approval a Scope of Work and any funding requests for such Scope of Work relating to the Fish Screen and Fish Passage. Upon request, Reclamation shall assist the Association in preparing the Scope of Work. Each annual Scope of Work shall cover the next three Operation and Maintenance Years. The Scope of Work shall describe the Association's anticipated Operation and Maintenance of the Fish Screen, the Association's anticipated Maintenance of the Fish Passage, and any Modifications to the Fish Screen and Fish Passage that are the responsibility of the Association or that are required to be included in the Scope of Work pursuant to Paragraph 7, herein. The Scope of Work shall include estimated labor, materials, equipment, utility, and any other costs necessary for such Operation, Maintenance, and Modification, together with the Association's incremental cost, if any, of adding the Fish Passage and Fish Screen to the Association's insurance policy. Attached hereto as Exhibit E is a sample spreadsheet, a sample labor-rate spreadsheet, and a sample list of work activities and items that may be used to assist the Association in preparing its annual Scope of Work and funding requests, which shall be prepared and submitted as follows:

(1) Prior to the Association's preparation and submission of its Scope of Work, the Association shall schedule a meeting with the parties hereto to discuss and coordinate with each other their respective Operation, Maintenance and Modification plans and activities for the next three Operation and Maintenance Years.

(2) The Association shall then prepare or modify the Scope of Work for the next three Operation and Maintenance Years. Upon request from the Association, Reclamation shall provide assistance to develop the Scope of Work.

(3) On or before April 1 of each year, the Association shall submit the Scope of Work to Reclamation, acting on behalf of the Recovery Program, for review. On or before April 30 of each year, Reclamation shall submit the Scope of Work and funding requests to the Recovery Program for review and approval.

(4) If the Recovery Program requests revisions to the proposed Scope of Work, the Association shall review the requested revisions and revise the Scope of Work. Upon request, Reclamation shall assist the Association with the requested revisions. If the Association disagrees with any revisions requested by the Recovery Program, it shall negotiate with the Recovery Program to attempt to reach agreement on the disputed revisions.

(5) If the Recovery Program does not approve and fund the Scope of Work by the time the work is scheduled to be done, the Association shall not be required to make any expenditures, Operate or Maintain the Fish Screen, Maintain the Fish Passage, nor make any Modification until such time as the Scope of Work is approved and funded by the Recovery Program.

(d) The Association shall request additional funding from the Recovery Program in the event the Association anticipates that its actual costs shall exceed the funds approved by the Recovery Program for the Scope of Work estimates. Except for emergency situations, the Association shall request additional funds from the Recovery Program prior to the time the Association incurs the additional expenditures.

(e) The Association shall obtain written approval from the Recovery Program prior to making any Modification to the Fish Passage and/or the Fish Screen that the Association reasonably determines is necessary to keep these facilities in good and efficient condition for the purposes for which they were constructed. Such approval may be obtained using the procedures set forth in paragraph 7(a) herein.

(f) The Association in coordination with the Service shall prepare and submit to the Recovery Program and the other parties hereto an annual Fish Passage Maintenance report and Fish Screen Operation and Maintenance report on or before December 31 of each year hereafter, covering the Operation and Maintenance Year that ended on the preceding September 30. An example of an annual Operation and Maintenance Report is attached hereto as Exhibit F.

11. Resolution of Disagreements. In the event of a disagreement among the parties involving the application or the interpretation of any provision of this Agreement, any determination or finding made by a party under this Agreement, or any performance hereunder, the matters involved in the disagreement shall, upon demand of any party, be discussed at a meeting between the parties to be held within forty-five (45) days of the date the demand is made. Attempted resolution of the disagreement through such a meeting shall be a condition precedent to any party's effort to have the disagreement resolved through alternative dispute resolution or other proceedings. In the event the parties are unable to resolve their disagreement following such meeting or meetings, any party may request that the matter be submitted to alternative dispute resolution or seek resolution by any means legally available. Each party shall bear its own costs and expenses incurred in this process.

12. Funding. The performance by the Association of its duties and obligations under this Agreement shall be contingent upon funding from the Recovery Program or other available sources and upon those funds being made available to the Association as provided in this Agreement. If a duty or obligation of the Association is only partially funded, the Association shall be obligated to perform the duty or obligation only to the extent of the available funds. In addition, if an Association bill is not timely paid as provided in Paragraph 4(b) herein, the Association shall be entitled to discontinue Operation and Maintenance of the Fish Screen and to discontinue Maintenance of the Fish Passage until the bill is paid in full.

13. Term of Agreement. This Agreement shall be effective upon execution by the parties and shall remain in effect for a period of twenty-five (25) years from the date hereof unless earlier terminated in writing by mutual agreement of the parties.

(a) Prior to the expiration of its term, this Agreement may be renewed, or amended and renewed, for an additional period of up to twenty-five (25) years upon agreement by all the parties, subject to the policies and laws in effect at that time.

(b) In the event the Recovery Program provides a written determination that the Fish Passage and/or Fish Screen are no longer needed, the Association and the Service may jointly elect to keep the facilities in place with the option to remove or make adjustments to the facilities as deemed necessary by the Association and the Service.

(c) Upon termination of this Agreement, the Association may, at its option, continue Operation and Maintenance of the Fish Screen and/or Fish Passage, or discontinue Operation and Maintenance of the Fish Screen and/or the Fish Passage.

14. Notice. Except for the notice by telephone provided for in paragraphs 3(a)(3), 3(c), 5(d), 9(b), 9(d), and 10(b) herein, all notices or other communications required or permitted under this Agreement shall be in writing, and shall be personally delivered, sent by facsimile telecommunication, or sent by certified mail, postage prepaid, return receipt requested, addressed to the parties at their respective addresses set forth below. Such notice or other communication shall be deemed given (i) upon receipt if personally delivered, (ii) upon sending if delivered by facsimile telecommunication, so long as the sending party is able to provide facsimile machine-generated confirmation of completion of transmission, or (iii) upon delivery to the address of the intended recipient if by certified mail, as evidenced by the delivery date shown on the return receipt card:

**RECOVERY PROGRAM:**

Director, Colorado River Recovery Implementation Program  
U.S. Fish and Wildlife Service  
P.O. Box 25486  
Denver Federal Center  
Denver CO 80225  
Telephone: (303) 969-7322  
Facsimile: (303) 969-7327

**ASSOCIATION:**

Manager  
Grand Valley Water Users Association  
1147 24 Road  
Grand Junction, Colorado 81505  
Telephone: (970) 242-5065  
Facsimile: (970) 243-4871

**SERVICE:**

Project Leader  
Fish and Wildlife Service  
Colorado River Fisheries Project  
Western Colorado Office  
764 Horizon Drive, Building B  
Grand Junction Colorado 81506-3948  
Telephone: (970) 243-9319  
Facsimile: (970) 245-6933



RECLAMATION:

Area Manager

Bureau of Reclamation

2764 Compass Drive, Suite 106

Grand Junction, Colorado 81506

Telephone: (970) 248-0600

Facsimile: (970) 248-0601

(b) The designation of the respective addressee, address, telephone and/or facsimile number may be changed by written notice given in the same manner as provided herein.

15. Entire Agreement. This Agreement constitutes the entire agreement between the parties and supersedes any prior understanding, representation, or agreement of the parties regarding the subject matter hereof, and may not be amended or terminated except by an instrument in writing signed by the parties hereto.

16. Binding Agreement. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their employees, contractors, agents, successors, and/or assigns.

17. Assignment. Notwithstanding any other provisions of this Agreement, it is understood and agreed by the parties hereto that Reclamation, the Service, and the Association may each, at their sole discretion, transfer or assign, in whole or in part, their respective duties and responsibilities under this Agreement to a willing federal, state, or other entity who, in their judgment, is qualified to fulfill said responsibilities; provided, however, that any such transfer or assignment shall not be effective until it is approved in writing by the other parties hereto, which approval shall not be unreasonably withheld or delayed.

18. No Waiver. No waiver of any provision of this Agreement shall be deemed to constitute or shall constitute a waiver of any other provisions hereof, whether or not similar, nor shall any waiver constitute a continuing waiver. No waiver shall be binding unless executed in writing by the party making the waiver.

19. Rights and Remedies. The parties shall have all rights and remedies provided under law for a breach or threatened breach of this Agreement. Without limiting the applicability of the rights granted to the public pursuant to the provisions of 16 U.S.C. § 1540(g), this Agreement shall not create any right or interest in the public, or any member thereof, as a third party beneficiary hereof, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or property damages pursuant to the provisions of this Agreement.

20. Necessary Acts and Cooperation. The parties hereby agree to do any act or thing and to execute any and all instruments required by this Agreement and which are necessary and proper to make effective the provisions of this Agreement.

21. Execution of Agreement. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same Agreement.

## 22. STANDARD AGREEMENT ARTICLES

The standard agreement articles applicable to this agreement are listed below. The full text of these standard articles is attached hereto as Addendum "A" and by this reference made a part thereof.

- A. OPERATION AND MAINTENANCE OF TRANSFERRED WORKS – PAYMENT OF MISCELLANEOUS COSTS
- B. EXAMINATION, INSPECTION, AND AUDIT OF FISH PASSAGE AND FISH SCREEN, RECORDS, AND REPORTS FOR DETERMINING ADEQUACY OF OPERATION AND MAINTENANCE
- C. CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS
- D. OFFICIALS NOT TO BENEFIT
- E. BOOKS, RECORDS, AND REPORTS
- F. ADMINISTRATION OF FEDERAL PROJECT LANDS
- G. PROTECTION OF WATER AND AIR QUALITY
- H. CONTAMINATION OR POLLUTION OF FEDERAL PROPERTY
- I. EQUAL EMPLOYMENT OPPORTUNITY
- J. COMPLIANCE WITH CIVIL RIGHTS LAWS AND REGULATIONS
- K. CERTIFICATION OF NONSEGREGATED FACILITIES
- L. PEST MANAGEMENT
- M. AGREEMENT DRAFTING CONSIDERATIONS

## ADDENDUM "A"

### A. OPERATION AND MAINTENANCE OF TRANSFERRED WORKS – PAYMENT OF MISCELLANEOUS COSTS.

(a) The Association shall not make any substantial changes in the transferred works without first obtaining written consent of the Contracting Officer. The Association shall ensure that no unauthorized encroachment occurs on project land and rights-of-way.

(b) The Association agrees to indemnify the United States for, and hold the United States and all of its representatives harmless from, all damages resulting from suits, actions, or claims of any character brought on account of any injury to any person or property arising out of any act, omission, neglect, or misconduct in the manner or method of performing any construction, care, Operation, Maintenance, supervision, examination, inspection, or other duties of the Association or the United States on transferred works required under this agreement, regardless of who performs those duties. The Association does not agree to indemnify the United States for any damages arising from intentional torts or malicious actions committed by employees of the United States.

### B. EXAMINATION, INSPECTION, AND AUDIT OF FISH PASSAGE AND FISH SCREEN, RECORDS, AND REPORTS FOR DETERMINING ADEQUACY OF OPERATION AND MAINTENANCE.

(a) In addition to the Scope of Work process, the Contracting Officer may from time to time, examine the following: the Association's books, records, and reports associated with the Fish Passage and Fish Screen Operated and/or Maintained by the Association; and the adequacy of the Operation and Maintenance. Notwithstanding title ownership, where the United States retains a financial, physical, or liability interest in facilities either constructed by the United States or with funds provided by the United States, the Contracting Officer may examine any or all of the Fish Passage and Fish Screen facilities providing such is in the interest of the United States.

(b) The Contracting Officer may, or the Association may ask the Contracting Officer to, conduct special inspections of the Fish Passage and Fish Screen being Operated and/or Maintained by the Association and special audits of the Association's books and records to ascertain the extent of any Operation and Maintenance deficiencies to determine the remedial measures required for their correction and to assist the Association in solving specific problems. If timing allows, these remedial measures shall be included in the next Scope of Work. Except in an emergency, any special inspection or audit shall be made only after written notice thereof has been delivered to the Association by the Contracting Officer.

(c) The Association shall provide access to the Fish Passage and Fish Screen, operate any mechanical or electrical equipment which it is obligated to operate under this Agreement, and be available to assist in the examination, inspection, or audit.

(d) The Contracting Officer shall prepare reports based on the examinations, inspections, or audits and furnish copies of such reports and any recommendations to the Association.

C. CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS. The expenditure or advance of any money or the performance of any obligation of the United States under this agreement shall be contingent upon appropriation or allotment of funds. No liability shall accrue to the United States in case funds are not appropriated or allotted.

D. OFFICIALS NOT TO BENEFIT. No Member of or Delegate to the Congress, Resident Commissioner, or official of the Association shall benefit from this agreement other than as a water user or landowner in the same manner as other water users or landowners.

E. BOOKS, RECORDS, AND REPORTS. The Association shall establish and maintain accounts and other books and records pertaining to administration of the terms and conditions of this agreement, as related to the Fish Passage and Fish Screen. This may include the Association's financial transactions; water supply data; project operation, maintenance, and replacement logs; project land and rights-of-way use agreements; the water users' land-use (crop census), land-ownership, land-leasing, and water-use data; and other matters that the Contracting Officer may require. Reports shall be furnished to the Contracting Officer in such form and on such date or dates as the Contracting Officer may require. Subject to applicable Federal laws and regulations, each party to this agreement shall have the right during office hours to examine and make copies of the other party's books and records relating to matters covered by this agreement.

F. ADMINISTRATION OF FEDERAL PROJECT LANDS. (a) The lands and interests in lands acquired, withdrawn, or reserved and needed by the United States for the purposes of care, Operation, and Maintenance of Federal project works, as related to the Fish Passage and Fish Screen, may be used by the Association for such purposes. The Association shall ensure that no unauthorized encroachment occurs on Federal project lands and rights-of-way. The Association does not have the authority to issue any land-use agreement or grant that conveys an interest in Federal real property, nor to lease or dispose of any interest of the United States.

(b) The Association may, subject to the written approval of the Contracting Officer, issue permits, licenses, or similar land use documents only to the extent they do not grant an interest in Federal real property.

G. PROTECTION OF WATER AND AIR QUALITY. (a) The Fish Passage and Fish Screen shall be Operated and Maintained in the most practical manner to maintain the quality of the water at the highest level possible as determined by the Contracting Officer: *Provided, That* the United States does not warrant the quality of the water delivered to the Association and is under no obligation to furnish or construct water treatment facilities to maintain or improve the quality of water delivered to the Association.

(b) The Association shall comply with all applicable water and air pollution laws and regulations of the United States and the State of Colorado; and shall obtain all required permits or licenses from the appropriate Federal, State, or local authorities necessary for the Operation, Maintenance and Modification of the Fish Screen and Maintenance and Modification of the Fish

Passage by the Association, to the extent such Operation, Maintenance and/or Modification is the responsibility of the Association under this Agreement; and shall be responsible for compliance with all Federal, State, and local water quality standards applicable to surface and subsurface drainage and/or discharges generated through the use of the Fish Passage and Fish Screen facilities or project water provided by the Association within the Association's Project Water Service Area.

(c) This article shall not affect or alter any legal obligations of the Secretary to provide drainage or other discharge services.

**H. CONTAMINATION OR POLLUTION OF FEDERAL PROPERTY.** (a) The Association shall not allow contamination or pollution of Federal project lands, project waters, or project works of the United States associated with the Fish Passage and Fish Screen or administered by the United States and for which the Association has the responsibility for care, Operation, and Maintenance by its employees or agents. The Association shall also take reasonable precautions to prevent such contamination or pollution by third parties.

(b) The Association shall comply with all applicable Federal, State, and local laws and regulations and Reclamation policies and instructions existing, or hereafter enacted or promulgated, concerning any hazardous material that will be used, produced, transported, stored, released, or disposed of on or in Federal project lands, project waters, or project works associated with the Fish Passage and Fish Screen.

(c) "Hazardous material" means (1) any substance defined as hazardous, a pollutant, or a contaminant under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 (14) and (33); (2) oil as defined by the Clean Water Act, 33 U.S.C. § 1321 (a) and the Oil Pollution Act, 33 U.S.C. § 2701 (23); (3) thermal pollution, refuse, garbage, sewage effluent, industrial waste, mine or mill tailings, mineral salts, pesticides, and other solid waste, and (4) any other substance regulated as hazardous or toxic under Federal State, local or Tribal law.

(d) Upon discovery of any event which may or does result in contamination or pollution of Federal project lands, project water, or project works associated with the Fish Passage and Fish Screen the Association shall immediately undertake all measures necessary to protect public health and the environment, including measures necessary to contain or abate any such contamination or pollution and shall report such discovery with full details of the actions taken to the Contracting Officer. Reporting shall be within a reasonable time period but shall not exceed 24 hours from the time of discovery if it is an emergency and the first working day following discovery in the event of a non-emergency.

(e) If violation of the provisions of this Article occurs and the Association does not take immediate corrective action as determined by the Contracting Officer, the Association may be subject to remedies imposed by the Contracting Officer, which may include termination of this agreement.

(f) The Association shall be liable for any response action or corrective measure necessary to protect public health and the environment or to restore Federal project lands, project waters, or project works associated with the Fish Passage and Fish Screen that are adversely affected as a result of such violation, and for all costs, penalties or other sanctions that are imposed for violation of any Federal, State, local or Tribal laws and regulations concerning hazardous material. At the discretion of the Contracting Officer, the United States may also terminate this agreement as a result of such violation.

(g) The Association shall defend, indemnify, protect and save the United States harmless from and against any costs, expenses, claims, damages, demands, or other liability arising from or relating to Association's violation of this article.

(h) Reclamation agrees to provide information necessary for the Association, using reasonable diligence, to comply with the provisions of this Article.

I. EQUAL EMPLOYMENT OPPORTUNITY. During the performance of this agreement, the Association agrees as follows:

(1) The Association will not discriminate against any employee or applicant for employment because of race, color, religion, sex, disability, or national origin. The Association will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, disability, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Association agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(2) The Association will, in all solicitations or advertisements for employees placed by or on behalf of the Association, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, disability, or national origin.

(3) The Association will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Contracting Officer, advising the labor union or workers' representative of the Association's commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Association will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Association will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Contracting Agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Association's noncompliance with the nondiscrimination clauses of this agreement or with any of such rules, regulations, or orders, this agreement may be canceled, terminated or suspended in whole or in part and the Association may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965 or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Association will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Association will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however*, that in the event the Association becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Association may request the United States to enter into such litigation to protect the interests of the United States.

**J. COMPLIANCE WITH CIVIL RIGHTS LAWS AND REGULATIONS.** (a) The Association shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), Section 504 of the Rehabilitation Act of 1973 (P.L. 93-112, as amended), the Age Discrimination Act of 1975 (42 U.S.C. 6101, *et seq.*), Title II of the Americans with Disabilities Act of 1990 if the entity is a State or local government entity [Title III if the entity is a non-government entity], and any other applicable civil rights laws, as well as with their respective implementing regulations and guidelines imposed by the U.S. Department of the Interior and/or Bureau of Reclamation.

(b) These statutes require that no person in the United States shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving financial assistance from the Bureau of Reclamation on the grounds of race, color, national origin, disability, or age. By executing this agreement, the Association agrees to immediately take any measures necessary to implement this obligation, including permitting officials of the United States to inspect premises, programs, and documents.

(c) The Association makes this agreement in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property discounts, or other Federal financial assistance extended after the date hereof to the Association by the Bureau of Reclamation, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Association recognizes and agrees that such Federal assistance will be extended in reliance on the representations and agreements made in this article and that the United States reserves the right to seek judicial enforcement thereof.



(d) Complaints of discrimination against the Association shall be investigated by the Contracting Officer's Office of Civil Rights.

**K. CERTIFICATION OF NONSEGREGATED FACILITIES.** The Association hereby certifies that it does not maintain or provide for its employees any segregated facilities at any of its establishments and that it does not permit its employees to perform their services at any location under its control where segregated facilities are maintained. It certifies further that it will not maintain or provide for its employees any segregated facilities at any of its establishments and that it will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Association agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in this agreement. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, disability, or otherwise. The Association further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Employment Opportunity clause; that it will retain such certifications in its files; and that it will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR  
CERTIFICATIONS OF NONSEGREGATED FACILITIES**

A Certification of Nonsegregated Facilities must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually). Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

**L. PEST MANAGEMENT.** The Association shall take appropriate steps to prevent the introduction and spread of, and to otherwise control undesirable plants and animals, as defined by the Contracting Officer, on Federal project lands, project waters, and project works associated with the Fish Passage and Fish Screen for which the Association has Operation and Maintenance responsibility. The Association is responsible for inspecting its vehicles and equipment for reproductive and vegetative parts, foreign soil, mud or other debris that may cause the spread of weeds, invasive species and other pests, and for removing such materials before moving its vehicles and equipment onto any Federal land or out of any area on Federal project land where

work is performed. Where decontamination is required prior to entering Federal project land, it shall be performed at the point of prior use, or at an approved offsite facility able to process generated cleaning wastes. Upon the completion of work, decontamination shall be performed within the work area before the vehicles and equipment are removed from Federal project lands. Under this article, the Association is responsible for determining whether decontamination of its vehicles and other equipment is necessary to avoid introducing undesirable plants or animals, as defined by the Contracting Officer, into new areas, and for performing the appropriate decontamination, where applicable. This article does not obligate the Association to perform decontamination of its vehicles in the course of ordinary trips to and from the facility that it will be Maintaining under this contract, unless the Association determines that decontamination is necessary to meet this responsibility. Programs for the control of these undesirable plants and animals on Federal project lands, project waters, and project works associated with the Fish Passage and Fish Screen for which the Association has Operation and Maintenance responsibility will incorporate Integrated Pest Management (IPM ) concepts and practices. IPM refers to a systematic and environmentally compatible program to maintain pest populations within economically and environmentally tolerable levels. In implementing an IPM program, the Association will adhere to applicable Federal and State laws and regulations and Department of the Interior and Bureau of Reclamation policies, directives, guidelines, and manuals.

M. AGREEMENT DRAFTING CONSIDERATIONS. Articles 1 through 22 of this Agreement have been drafted, negotiated, and reviewed by the parties hereto, each of whom is sophisticated in the matters to which this agreement pertains, and no one party shall be considered to have drafted the stated articles.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year herein above written.

GRAND VALLEY WATER  
USERS ASSOCIATION  
A Colorado nonprofit corporation

D. Kim Albertson  
President D. Kim Albertson

ATTEST:

Daniel E. Cronk  
Secretary Daniel E. Cronk

UNITED STATES  
FISH AND WILDLIFE SERVICE

[Signature]  
Regional Director, Mountain-Prairie Region (6)

UNITED STATES  
BUREAU OF RECLAMATION

[Signature]  
Regional Director, Upper Colorado Region

Approved:

[Signature]  
Office of the Regional Solicitor

## EXHIBITS

- A. Listing of Cameo Water Rights (Paragraph 1(k))
- B. Transfer Document (Reclamation and Association) (Paragraph 2(b)(1))
- C. Transfer Document (Reclamation and Service) (Paragraph 2(b)(2))
- D. Procedures for access to Fish Passage (Paragraph 3(a)(2))
- E. Sample List of Work Activities and Items, and Scope of Work Sample Spreadsheets (Paragraph 10(c))
- F. Sample Annual Operation and Maintenance Report (Paragraph 10(f))

## EXHIBITS

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- D. Procedures for access to Fish Passage (Paragraph 3(a)(2))
- E. Sample List of Work Activities and Items, and Scope of Work Sample Spreadsheets (Paragraph 10(c))
- F. Sample Annual Operation and Maintenance Report (Paragraph 10(f))

## EXHIBIT A

### Cameo Water Rights

<u>Owner</u>	<u>Amount</u>	<u>Adjudication Date</u>	<u>Approp. Date</u>	<u>Use</u>
Grand Valley Water Users Association/ United States	730 c.f.s.	07/22/1912	02/27/1908	Irrigation
Grand Valley Water Users Association/ United States	400/800 c.f.s. <sup>1</sup>	07/25/1941	02/27/1908	Power
Grand Valley Water Users Association/ United States	220 c.f.s.	07/25/1941	02/27/1908	Domestic & Livestock
Orchard Mesa Irrigation District	450 c.f.s.	07/22/1912	10/25/1907	Irrigation
Orchard Mesa Irrigation District	10.2 c.f.s.	07/22/1912	10/01/1900	Irrigation
Palisade Irrigation District	80 c.f.s.	07/22/1912	10/01/1889	Irrigation
Palisade Irrigation District	23.5 c.f.s.	07/25/1941	06/01/1918	Irrigation
Mesa County Irrigation District	40 c.f.s.	07/22/1912	07/06/1903	Irrigation

The source of all of the above described water rights is the Colorado River.

<sup>1</sup> 400 c.f.s. during irrigation season, 800 c.f.s. during non-irrigation season.

EXHIBIT B

Contract No. [to be assigned]

## Letter of Concurrence

Purpose: Transfer from Construction Status to the Grand Valley Water Users Association of the Operation, Maintenance and/or Modification of the Fish Screen and Maintenance and/or Modification of the Fish Passage, Grand Valley Project, Colorado

The United States Bureau of Reclamation hereby transfers and the Grand Valley Water Users Association hereby accepts responsibility for the Operation and Maintenance and/or Modification of the Fish Screen and Maintenance and/or Modification of the Fish Passage, as set forth in the Agreement, Contract No. [to be assigned] (Agreement).

The transfer inspection was performed in accordance with Article 2 of the Agreement, concerning the Fish Passage at the Grand Valley diversion dam and the Fish Screen on the Government Highline Canal.

In accordance with the Articles 2.(a)(3) of the Agreement, Reclamation will provide the following:

- Designer's Operating Criteria,
- Final construction report,
- All applicable manufacturer's literature, and
- Construction as-built drawing for the Fish Passage and Fish Screen.

GRAND VALLEY WATER  
USERS ASSOCIATION

\_\_\_\_\_  
[name, title]

Date: \_\_\_\_\_

UNITED STATES  
BUREAU OF RECLAMATION

\_\_\_\_\_  
[name, title]

Date: \_\_\_\_\_

EXHIBIT C

Contract No. [to be assigned]

**Letter of Concurrence**

Purpose: Transfer from Construction Status to the United States Fish and Wildlife  
Service of the Operation of the Fish Passage, Grand Valley Project, Colorado

The United States Bureau of Reclamation hereby transfers and the United States Fish and Wildlife Service hereby accepts responsibility for the Operation of the Fish Passage, as set forth in the Agreement, Contract No. [to be assigned] (Agreement).

The transfer inspection was performed in accordance with Article 2 of the Agreement, concerning the Fish Passage at the Grand Valley diversion dam and the Fish Screen on the Government Highline Canal.

In accordance with the Articles 2.(a)(4) of the Agreement, Reclamation will provide the following:

- Designer's Operating Criteria for the Fish Passage, and
- All applicable manufacturers' literature.

UNITED STATES FISH AND  
WILDLIFE SERVICE

\_\_\_\_\_  
[name, title]

Date: \_\_\_\_\_

UNITED STATES  
BUREAU OF RECLAMATION

\_\_\_\_\_  
[name, title]

Date: \_\_\_\_\_



EXHIBIT D

WCG-KMoran  
SAF-1.10

SENT VIA THE LAN NOVEMBER 21, 2005

MEMORANDUM

To: All Western Colorado Area Office, Grand Junction Employees  
WCAO-Files

From: Kevin L. Moran  
Collateral Duty Safety Representative (CDSR)

Subject: Standard Operating Procedure for Entering and Exiting the Grand Valley  
Diversion Dam Fish Passage Facility

The purpose of this memorandum is to provide employees and visitors with a Standard Operation Procedure (SOP) for entering and exiting the Grand Valley Diversion Dam Fish Passage Facility.

This SOP was based on the initial design of the fish passage facility and is in accordance with information submitted to the Colorado Department of Transportation (CDOT) for State Highway Access Permit Nos. 303185 and 303186.

Please refer to Drawing No. 0008-417-642 (attached).

**ENTERING PROCEDURE:**

- 1) Enter the facility from westbound Interstate 70 (I-70). Please note that this will require visitors from the Grand Junction area to travel approximately 12.5 miles past the dam to the DeBeque exit and overpass to gain access to I-70 westbound. Employees **SHOULD NOT** use openings in the I-70 median to gain access to the west bound lanes except for emergency situations.
- 2) After exiting the Beaver Tail Tunnel, merge to the right-hand lane.
- 3) Approximately 900 feet upstream of the facility, begin decelerating and pulling off the road onto the widened shoulder. **CAUTION:** Watch for traffic exiting the facility.
- 4) Continue traveling and decelerating on the widened shoulder for approximately 650 feet until the concrete barrier terminates near the entrance gate location.

- 5) Pull vehicle as far off the road and as close to the gate as possible to unlock gate.
- 6) Park all vehicles inside the fenced area.
- 7) Close and lock gate to control unauthorized access.

**EXITING PROCEDURE:**

- 1) Unlock and open the gate to the Return Access Road.
- 2) Exit the surface facility area
- 3) Close and lock gate to control unauthorized access.
- 4) Travel upstream along Colorado River on the return access road to the exit location and gate.
- 5) Unlock the gate and pull the vehicle through the gate opening making sure vehicle is not impeding traffic on westbound I-70. **CAUTION:** Watch for traffic entering the facility.
- 6) Close and lock the gate to control unauthorized access.
- 7) Visually monitor the westbound traffic for a break in the traffic.
- 8) Using the widened shoulder of I-70 for an acceleration lane, safely merge back into the westbound traffic. The acceleration lane is approximately 1,100 feet long and terminates approximately 400 feet past the dam.

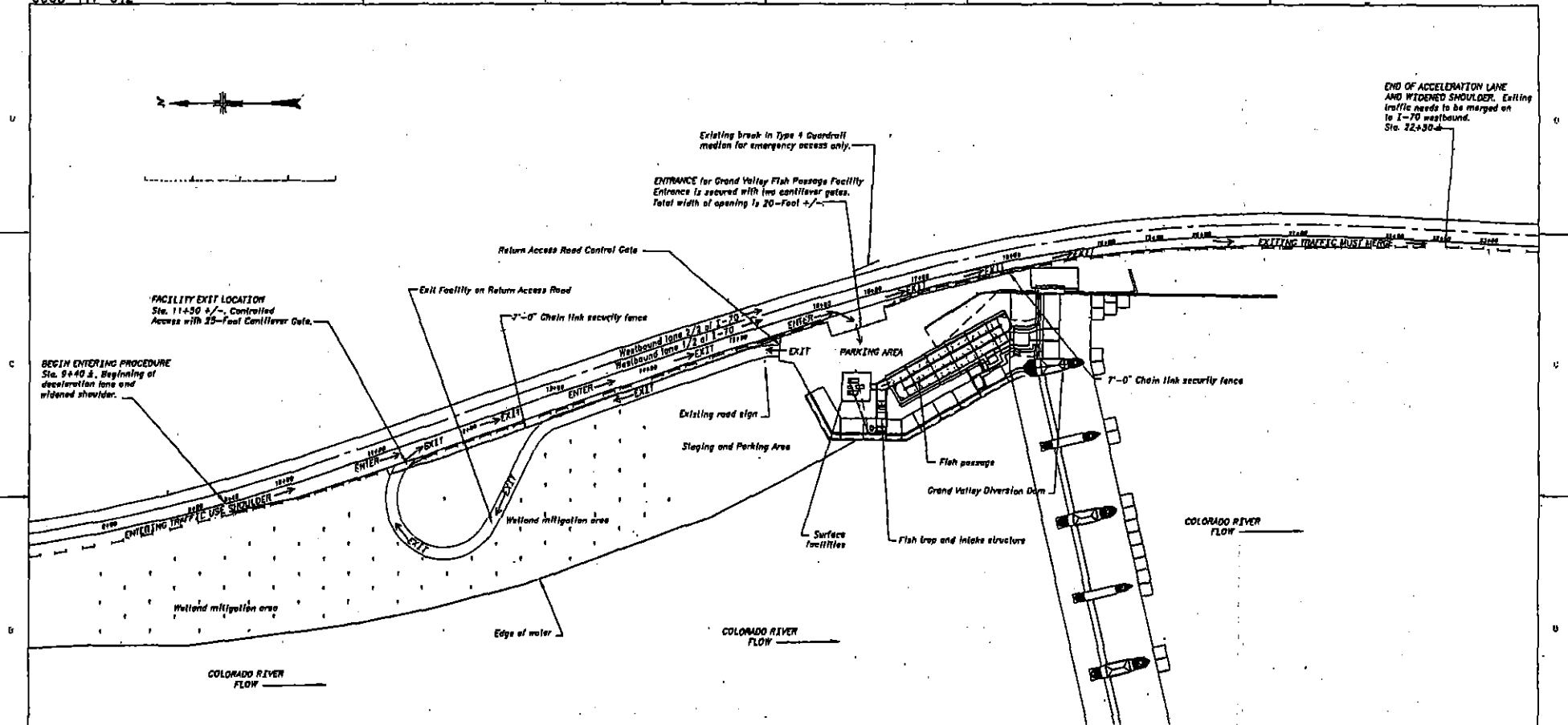
**Attachment**

cc: Chuck McAda and Bob Burdick  
U.S. Fish and Wildlife Service  
764 Horizon Drive, Building B  
Grand Junction CO 81506

Mr. Dick Proctor  
Grand Valley Water Users Association  
1147 24 Road  
Grand Junction CO 81503  
(ea w/att)

bc: Posted on Office Safety Bulletin Board (w/ att)  
WBR:KMoran:rb:11/17/05:970 248-0635:fish passage entry/exit

0008-417-642



END OF ACCELERATION LANE AND WIDENED SHOULDER. Exiting traffic needs to be merged on to I-70 westbound. Sta. 22+50.4

FACILITY EXIT LOCATION  
Sta. 11+50 +/-, Controlled Access with 25-Foot Cantilever Gate.

BEGIN ENTERING PROCEDURE  
Sta. 9+40 +/-, Beginning of acceleration lane and widened shoulder.

#### NOTES

Personnel entering and exiting the Grand Valley Fish Passage Facility shall follow the following Standard Operating Procedures.

#### ENTERING PROCEDURE:

- 1) Enter the facility from westbound Interstate 70 (I-70).
- 2) After exiting the Beaver Tail Tunnel merge to the right-hand lane.
- 3) Approximately 900 feet upstream of the facility, begin decelerating and pulling off the road onto the widened shoulder. CAUTION: Watch for traffic exiting the facility.
- 4) Continue traveling and decelerating on the widened shoulder for approximately 650 feet until the concrete barrier terminates near the entrance gate location.
- 5) Pull vehicle as far off the road and as close to the gate as possible to unlock gate.
- 6) Park all vehicles inside the fenced area.
- 7) Close and lock the gate to control unauthorized access.

#### EXITING PROCEDURE:

- 1) Unlock and the open gate to the Return Access Road.
- 2) Exit the Surface Facility area.
- 3) Close and lock the gate to control unauthorized access.
- 4) Travel upstream along Colorado River on the Return Access Road to the Exit Location and etc.
- 5) Unlock the gate and pull the vehicle through the gate opening making sure vehicle is not impeding traffic on westbound I-70. CAUTION: Watch for traffic entering the facility.
- 6) Close and lock the gate to control unauthorized access.
- 7) Visually monitor the westbound traffic for a break in the traffic.
- 8) Using the widened shoulder of I-70 for an acceleration lane, merge back into the westbound traffic. The acceleration lane is approximately 1,100 feet long and terminates approximately 400 feet past the dam.

ALWAYS WEAR YOUR SAFETY SEATBELT	
COLORADO RIVER WILDERNESS DEVELOPMENT PROGRAM GRAND VALLEY PROJECT - COLORADO FISH PASSAGE FACILITY STANDARD OPERATING PROCEDURE FOR ENTERING AND EXITING FACILITY PLAN AND EXISTING FACILITY	
DESIGNED BY: J. L. HARRIS, INC.	REVIEWED BY: J. L. HARRIS, INC.
DRAWN BY: J. L. HARRIS, INC.	REVIEWED BY: J. L. HARRIS, INC.
DATE: 10/10/08	DATE: 10/10/08
10008-417-642	

## **Exhibit E - List of Work Activities**

List of work activities for assistance in preparation of annual work plan.

The most useful tool for developing an annual work plan would be the documentation of work performed. With that in mind Reclamation recommends that Grand Valley Water Users Association (GVWUA) maintain an operating log book. If requested by GVWUA, Reclamation will provide blank log books commonly used by operators of Reclamation facilities. One log could be kept for the fish passage and another log for the fish screen. We encourage GVWUA to log the following types of activities:

- 1) Normal and emergency changes in operation of the fish screen or bypass canal. This may include item such as a) placing the screen cleaning mechanism into the interval mode, b) placing the screen cleaning mechanism into the continuous mode, c) use of the air burst system, d) opening the bypass to facilitate screen cleaning, or, e) changing the bypass flow rate.
- 2) Periods when use of passage or screen is not in use.
- 3) Inspection of the facilities for operation and maintenance program.
- 4) Startup and stopping of mechanical equipment. This may include: a) the air burst system, b) manual run of the brush cleaning system, or c) moving the radial gates.
- 5) Testing of standby equipment or gate controls.
- 6) Testing and exercising of gates or valves.
- 7) Major or minor maintenance activities including scheduled maintenance and completion of recommendations resulting from inspections.
- 8) Initial observation of unusual or emergency conditions. Also when emergency or unusual conditions stop or end.
- 9) Acts of vandalism, etc.
- 10) Requests and concurrence to change from normal operation during an unusual or emergency condition. For example, document the request if the manager requests that the bypass be opened up due to insufficient river flows.
- 11) Communication checks.
- 12) Record names and purpose of visitors.
- 13) Confirmation and documentation of any required or applicable training including safety training.
- 14) Documentation of safety inspections.
- 15) Documentation of river and canal levels and flows, and flows in the fish passage attractor flows with the associated date and time.

## Exhibit E - Draft Work Plan

Example - Annual Operation and Maintenance Workplan (Could also be used for monthly or quarterly invoicing)

Contract No. \_\_\_\_\_, OM&R for Diversion Dam Fish Passage and Fish Screen

Work Performed as part of the Upper Colorado Recovery Implementation Program

Work For Fiscal Year	2005	DATES COVERED			01-Oct-04	to	30-Sep-05	
ITEM OR FEATURE	NO. OF UNITS	UNIT	UNIT COST	EQUIPMENT	MATERIALS	LABOR	OTHER	TOTAL
<b><i>Fish Passage Facility</i></b>								
Operation and Maintenance								\$0.00
Routine Site Maint. & Insp.								
Labor B (Attendant)		hrs						\$0.00
Labor A (Maintenance)		hrs						\$0.00
Equipment								\$0.00
Backhoe								
Dozer								
Chain saw								
Materials								\$0.00
Lubricants								
Paint								
Administrative Costs		hrs						\$0.00
Manager								
Secretarial								
Legal								
Insurance								
Utilities								
Electric		mos.						\$0.00
Telephone		mos.						\$0.00
Construction Additions/Improvements								
Item NO. 1								
Item NO. 2								
Item NO. 3								
						Fish Passage Sub-total		

ITEM OR FEATURE	NO. OF UNITS	UNIT	UNIT COST	EQUIPMENT	MATERIALS	LABOR	OTHER	TOTAL
<b>Fish Screen Facility</b>								
<b>Operation and Maintenance</b>								\$0.00
Routine Site Maint. & Insp.								
Labor B (Attendant)		hrs						\$0.00
Labor A (Maintenance)		hrs						\$0.00
Equipment								\$0.00
Backhoe								
Dozer								
Chain saw								
Materials								\$0.00
Lubricants								
Paint								
Administrative Costs		hrs						\$0.00
Manager								
Secretarial								
Legal								
Insurance								
Utilities								
Electric		mos.						\$0.00
Telephone		mos.						\$0.00
<b>Construction Additions/Improvements</b>								
Automation system								
Item NO. 2								
Item NO. 3								
						Fish Screen Sub-total		
						Total Fish passage and screen		

## Exhibit E - Draft Labor Rate Spreadsheet

### Grand Valley Water Users Association Labor Cost Sheet

Labor Costs	Base Rate per hour	Benefits/Fringes	Social Security 6.20%	Medicare 1.45%	FUTA 0.80%	SUTA 6.70%	Workman's Comp	Sub-total	Overhead 15.00%	Total	Multiplier of base
Laborer		0.00	0.00	0.00	0.00	0.00	0.00	\$0.00	\$0.00	\$0.00	
Equipment operator											
Manager											
Foreman											
Office											

**Notes:**

**Benefits and Fringes** can include: sick and vacation leave, retirement fund, health and life insurance etc (list what RWPC has)

**Benefits**

<b>Medical</b>	_____ /mo	\$0.00 \$/hr Since this is a cost rather than a percentage, the percentage will go down as hourly rate goes up.
<b>Sick leave</b>	_____ hrs/mo	0.00% Converted to percent of time by dividing monthly or annual sick leave by total monthly or annual work hours.
<b>Vacation</b>	_____ hrs/mo	0.00% Converted to percent of time by dividing monthly or annual vacation leave by total monthly or annual work hours.
<b>Retirement</b>	_____ %	0.00% Employer share of retirement.

In this table Benefits is the sum of the percentages of sick leave, vacation and retirement times the base rate. To this number add the rate for medical coverage.

**Workman's Comp**                      Actual workman's comp rate.

**Overhead**                      15% Calculated after all additives. This number is commonly used by contractors doing construction contracts for Reclamation.

## **Exhibit F - Operation and Maintenance Report**

**COLORADO RIVER RECOVERY PROGRAM**  
**FY 200\_ EXAMPLE ANNUAL PROJECT REPORT**

**RECOVERY PROGRAM**  
**PROJECT NUMBER: \_\_\_\_\_**

**I. Project Title: Operation and Maintenance of the Fish Screen and Maintenance of the Fish Passage Facility at the Grand Valley Diversion Dam**

**II. Prepared by:**                      **Name**  
Grand Valley Water Users Association  
1147 24 Road  
Grand Junction, CO 81505  
Phone (970) 243-4871  
Email:

**III. Project Summary: The Grand Valley Diversion Dam, located ... [details]**

**IV. Study Schedule:**

**V. Relationship to RIPRAP:**

**VI. Accomplishment of FY 200\_ Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:**

**[examples]**

The following major maintenance activities were completed on the fish passage.

- 1) Replaced 4 bars in the trash rack
- 2) Repaired bypass pipeline flow meter

...

The following improvements were made to the fish passage:

- 1) An automatic trash rack cleaner was installed.
- 2) Gates on dam were modified to enhance sediment sluicing in front of fish passage upstream outlet.
- 3) ...

The fish screen was operated during the following periods

- 1) October 1 - November 22
- 2) Out of operation due to icing November 23 - November 30. Notified the USFWS by telephone November 23 at 9:00 a.m.
- 3) Warmer weather permitted operation from December 1 through December 17
- 4) Out of operation from December 18 - February 23 due to ice. Notified the USFWS by telephone December 19 at 9:00 a.m.
- 5) In operation from February 24 - April 15.
- 6) No diversions April 15 - April 22.
- 7) In operation April 23 - June 17
- 8) Closed down for 3 hours due to heavy debris load on June 18.
- 9) June 19 had to partially divert flow around the screen to clean screens for 2 hours.
- 11) In operation June 19 - July 5.



- 12) Bypassed flow around the screen July 6 - 9 due to heavy moss load in the river. USFWS by telephone July 7 at 1:00 p.m.
- 13) In operation June 19 - August 2.
- 14) Had to bypass flow around screen to clean debris from a thunder storm for 3 hours August 3.
- 15) In operation August 4 - September 30.

The following major maintenance activities were completed on the fish screen:

- 1) Bearings on the brush cleaning cable were replaced.
- 2) RIPRAP downstream of the screen was repaired
- 3) ...

The following improvements were made to the fish screen:

- 1) Automation system was completed
- 2) Cathodic protection devices were installed.
- 3) An additional guardrail was installed on the upstream side of the radial gate to provide for safer operation.

VII. Recommendations: Recovery Program could consider installing a more closely spaced trash rack to catch more moss. This could prolong screen operation during period of high moss.

VIII. Project Status: On schedule and on budget.

IX. FY 200\_ Budget Status

A. Funds Provided: \$ \_\_\_\_\_

B. Funds Expended: \$ \_\_\_\_\_

See attached FY200\_ Invoice summary for detail of expenditures by activity.

X. Status of Data Submission (Where applicable): Not applicable

XI. Signed: \_\_\_\_\_ November 6, 200\_  
Principal Investigator Date

**// Contract No. 04-LA-40-0190**

**For the Operation of a Pump Station at  
Highline Lake and Highline Lake Water  
Storage Space Easement**

RECOVERY IMPLEMENTATION PROGRAM  
UPPER COLORADO RIVER BASIN  
GRAND VALLEY PROJECT

CONTRACT AND GRANT OF EASEMENT

Among the

UNITED STATES OF AMERICA, DEPARTMENT OF INTERIOR  
BUREAU OF RECLAMATION and FISH AND WILDLIFE SERVICE,  
STATE OF COLORADO, DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF PARKS AND OUTDOOR RECREATION,

and the

GRAND VALLEY WATER USERS ASSOCIATION

for the

OPERATION OF A PUMP STATION AT HIGHLINE LAKE

and

HIGHLINE LAKE WATER STORAGE SPACE EASEMENT

This CONTRACT AND GRANT OF EASEMENT made this 19<sup>th</sup> day of February, 2004 pursuant to the Act of June 17, 1902 (32 Stat. 388) as amended or supplemented, the Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661 - 666b, the Endangered Species Act, 16 U.S.C. §§ 1531-1540, and the Act of July 9, 1965 (79 Stat. 213) and the Act to Authorize the Bureau of Reclamation to Provide Cost Sharing for the Endangered Fish Recovery Implementation Programs for the Upper Colorado and San Juan River Basins, (October 30, 2000, 114 Stat. 1602, Public Law 106-392 ), and acts amendatory thereof or supplementary thereto, between the UNITED STATES OF AMERICA, DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION (hereinafter styled Reclamation) and the FISH AND WILDLIFE SERVICE (hereinafter styled the Service), both acting through the Secretary of Interior, the STATE OF COLORADO, acting by and through the DEPARTMENT OF NATURAL RESOURCES for the use and benefit of the DIVISION OF PARKS AND OUTDOOR RECREATION (hereinafter styled State Parks) acting pursuant to the laws of the State of Colorado; and the GRAND VALLEY WATER USERS ASSOCIATION (hereafter styled the Association) a corporation organized and existing under the laws of the State of Colorado.

WITNESSETH, that:

WHEREAS, Reclamation constructed the Grand Valley Project (Project) in accordance with the Act of June 25, 1910 (36 Stat. 835), which was approved by the President on January 5, 1911, for irrigation of project lands and the production of hydroelectric energy by diversion of water from the Colorado River in Mesa County, Colorado, into the Government High Line Canal (Canal), a major project feature; and

WHEREAS, the Association operates and maintains the Project, including, but not limited to the Canal, pursuant to an amendatory contract with Reclamation, dated January 27, 1945 and amended April 27, 1964 (Symbol No. Ilr-644); and

WHEREAS, historical operations of the Canal included spills from the Camp 7 spillway into Mack Wash, however, there is no obligation on behalf of the Association or Reclamation to insure continuation of such spills; and

WHEREAS, State Parks owns, operates and maintains Highline Lake, the principle feature of the Highline State Park, which is located below the Canal on Mack Wash, to sustain a viable fishery and provide a variety of recreational uses; and

WHEREAS, the Service is the lead federal agency involved in the Recovery Program for the Endangered Fishes of the Upper Colorado (Recovery Program); and

WHEREAS, the parties agree to participate in this Contract and Grant of Easement in a manner which will ultimately protect water rights held by the Association and State Parks; and

WHEREAS, Reclamation has designed, constructed and owns, and, under separate contract (the Improvements Grant Contract), the Association operates and maintains the Grand Valley Water Management Improvements (Improvements) as described in the Final Environmental Assessment dated September 1998. Said Improvements generally consist of new check structures within the Canal, the purpose of which is to reduce the Canal's late summer diversion requirements and contribute to the goal of improving flow conditions in the 15-Mile Reach of the Colorado River for the recovery of endangered fish; and

WHEREAS, the Canal has been operated with the Improvements in place over one complete irrigation season with the performance of the Improvements being monitored by Reclamation. Based on the results of the monitoring program, Reclamation has determined that it is necessary to, design, construct, operate, maintain and own a pump station at Highline Lake to provide the capability to pump water from Highline Lake into the Canal to increase operational flexibility and otherwise help the parties achieve the management goals of the Recovery Program. This pump station, together with a pipeline from the pump station to the Canal and any associated monitoring and measuring equipment, shall be referred to herein as the "Pump Station." The Pump Station would be located on Reclamation withdrawn land near the Camp 7 spillway on the Canal; and

WHEREAS, neither the construction or operation of the Improvements or the Pump Station nor the adoption of recovery goals will impede the ability of the Association to provide water to its users in accordance with state law.

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein, the parties hereto agree as follows:

1. Easement

State Parks as Grantor does hereby grant and by this Contract and Grant of Easement convey to the United States as Grantee free of lien or encumbrance, except as otherwise provided herein, the following-described interests in real property situated in the County of Mesa, State of Colorado, to-wit:

A perpetual easement to use and reuse approximately 320 acre-feet of water storage space in Highline Lake, to temporarily store Grand Valley Project irrigation water in and pump back out of Highline Lake during the months of August, September, October and November each year. Said storage space being the top two vertical feet of Highline Lake located between elevations 4,698.6 and 4,700.6 feet above mean sea level. Highline Lake is located in the W1/2 of the Fractional NE1/4 of the NE1/4, the Fractional NW1/4 of the NE1/4, the E1/2 of the Fractional NE1/4 of the NW1/4, the SE1/4 of the NW1/4 and the NE1/4 of the SW1/4 lying Easterly of the ditches named 49 Main and 49B, the SW1/4 of the NE1/4, the W1/2 of the SE1/4 of the NE1/4, the NW1/4 of the SE1/4, the N1/2 of the SW1/4 of the SE1/4 and the N1/2 of the SE1/4 of the SW1/4 of Section 5 Township 2 North, Range 3 West, Ute Meridian, Mesa County, Colorado and has a water surface area of approximately 160 acres. The above elevations are based upon the Highline Lake spillway crest elevation of 4,700.7 feet above mean sea level.

A. State Parks states, but does not in any way warrant, that it is the sole owner of the real property whereon the above-described easement lies and that no prior easements and/or lease agreements, except those identified in this Contract and Grant of Easement, exist that will interfere with the easement identified in this Contract and Grant of Easement.

B. It is understood and agreed that the rights to be granted to the United States, as described in paragraph 1 herein, shall be free from lien or encumbrances except: (i) coal, oil, gas and other mineral rights reserved to or outstanding in third parties as of the date of this Contract and Grant of Easement, (ii) rights of way for roads, railroads, telephone lines, transmission lines, ditches, conduits, or pipelines on, over, or across said lands in existence on such date; (iii) court liens, judgments or financial encumbrances, such as Deeds of Trust, for which a formal consent has been obtained from the court or lien holder; and (iv) any interest of record.

C. The above described easement is granted subject to the terms and conditions of this Contract and Grant of Easement and more particularly described herein after.

2. Purchase

A. Reclamation acting on behalf of the United States shall purchase said easement on the terms herein expressed, and on execution and delivery of this Contract and Grant of Easement, and approval by the proper officials of the United States, it shall cause to be paid to the State Parks as full purchase price the sum of one hundred fifty thousand dollars (\$150,000.00). Payment shall be in the form of a credit to the State of Colorado's commitment to the Recovery Program and State Parks shall accept said credit as full payment for said easement.

B. Reclamation acting on behalf of the Recovery Program shall paid to State Parks the sum of one hundred seventy-two thousand, five hundred dollars (\$172,500.00) to conduct the water quality study outlined in Paragraph 7 herein. Payment shall be sent directly to a financial institution by Direct Deposit/Electronic Funds Transfer.

C. This Contract and Grant of Easement shall become effective to bind the United States to purchase said easement immediately on its execution by Reclamation, and shall inure to the benefit of and be binding upon the assigns of the parties hereto.

### 3. Reimbursement

State Parks shall, at its own cost, procure and have recorded all assurances of title and affidavits which State Parks may be advised by the United States are necessary and proper to show in State Parks complete fee simple unencumbered title to the property whereon the above-described easement lies, subject only to the interests, liens, or encumbrances expressly provided for herein. Abstracts or certificates of title or title insurance will be procured by the United States at its expense. The expense of recording this Contract and Grant of Easement shall be borne by the United States.

A. The United States shall reimburse State Parks in an amount deemed by the United States to be fair and reasonable for the following expenses incurred by State Parks:

(a) Recording fees, transfer taxes and similar expenses incidental to granting the easements described herein to the United States; and

(b) Penalty cost for prepayment of any pre-existing recorded mortgage entered into in good faith encumbering said real property.

B. State Parks agrees to furnish the United States evidence that these items of expenses have been billed to and paid by State Parks, and further agrees that the United States alone shall determine the fairness and reasonableness of the expenses to be paid.

### 4. Installation, Operation and Maintenance

Reclamation is authorized to install the Pump Station at its cost and expense as part of the Improvements. It shall also, at its cost and expense, take any actions necessary to meet the requirements of the National Environmental Policy Act. The Pump Station will be owned by the United States and constructed on land of the United States withdrawn and acquired for the Project.

The Pump Station shall be considered to be part of the Improvements, and the Association shall be responsible for the operation, maintenance and replacement of the Pump

Station in accordance with the terms of the Improvements Grant Contract, which is incorporated herein by this reference. If the Association's obligation to operate, maintain or replace the Improvements terminates under the Improvements Grant Contract, it shall have no further obligation to operate, maintain or replace the Pump Station. The Association may (but shall not be obligated to) continue to operate the Pump Station at its own cost and expense while this Contract and Grant of Easement is in effect. However, if the Improvements Grant Contract terminates and the Association chooses to continue operation of the Pump Station, the Pump Station shall be operated in a manner consistent with this Contract and Grant of Easement.

While this Contract and Grant of Easement is in effect, the Association shall be responsible for measuring and reporting canal spills into Mack Wash (at Camp 7 spillway), the volume of water pumped by the Pump Station, and reservoir water surface elevation as required by the Colorado State Engineer. Reporting shall be provided annually by the end of each calendar year to all parties hereto.

While this Contract and Grant of Easement is in effect, State Parks shall be responsible for water quality testing, monitoring and reporting as provided for in Paragraph 6.B. herein at no cost to the Association, Service or Reclamation.

If any of the conditions provided for in Paragraph 6 herein are violated the responsible reporting party shall notify all other parties to this Contract and Grant of Easement immediately.

5.     Storage Space

The Storage Space shall be located in the top two vertical feet of reservoir storage between elevations 4,698.6 and 4,700.6 feet above mean sea level; no water may be pumped from Highline Lake at any time the reservoir falls below 4,698.6 feet above mean sea level unless as otherwise specified in Paragraph 6.D. herein. The purpose of the Storage Space is to temporarily hold water for pumping back into the Canal to increase operational flexibility of the Canal and alleviate late season irrigation shortages that may occur because of the Association's voluntary participation in the Recovery Program.

Water spilled from the Canal through the Camp 7 spillway during the months of August through November of each year shall be temporarily placed into the Storage Space, and shall be available to be pumped back to the Canal through the Pump Station during such months. Water placed into the Storage Space, but not used in compliance with the administrative rules and regulations of the Division 5 Engineer (Office of the Colorado State Engineer) will not be considered available for pumping pursuant to this Contract and Grant of Easement.

6.     Limitations on use of Storage Space

The operation of the Pump Station, the use of the Storage Space and water placed into the Storage Space, shall be subject to the following limitations:

A. Reclamation and the Association do not warrant the quality of the water spilled from the Canal through the Camp 7 spillway and are under no obligation to furnish or construct water treatment facilities to maintain or improve the quality of the water spilled.

B. Use of the Pump Station will cease at such times when water samples collected as part of the Highline Lake swim beach water testing program exceed the following thresholds levels: (1) E.coli levels at or above 60 colonies per milliliter; or (2) fecal coliform levels at or above 100 colonies per milliliter or 75 % of any future regulatory standard established for E.coli or fecal coliform, or as may be modified from time to time, by the Colorado Water Quality Control Commission of the Colorado Department of Public Health and Environment, or by agreement of the parties after completion of further water quality studies. These limitations are necessary to ensure water quality and to otherwise protect recreational uses of Highline Lake.

C. The limitations specified in Paragraph 6.B. herein shall apply whenever the swim beach is open. If water quality continuously exceeds levels specified in Paragraph 6.B. herein while the swim beach is open, State Parks retains the right to disallow any further pumping of water from the Storage Space until after the swim beach has closed for the season or if the exceedances of the levels specified in Paragraph 6.B. herein are otherwise remediated. For the purposes of this Contract and Grant of Easement the end of the swim season will be determined by State Parks, however, it shall be no later than September 30<sup>th</sup> of each year.

D. Pump Station shall only be allowed to operate when the level of Highline Lake is above elevation 4,698.6 feet above mean sea level during the months of August, September, October and November. In the event the State Engineer's Office imposes a restriction on the storage level in Highline Lake, the Pump Station may operate within the top two feet of the restricted level provided such operation, as determined by State Parks, does not adversely impact park facilities or public use of Highline Lake. However, if mutually agreed to by all parties on a case by case basis, the Pump Station may be operated at other times during the irrigation season.

E. Highline Lake fluctuations will be limited to one vertical foot in elevation per day. If for any reason the draw down of Highline Lake exceeds one vertical foot in a 24-hour period, pumping will cease. Maximum draw down will also be limited by maximum Pump Station flow rate. The Pump Station flow rate will be no greater than 80 cubic feet per second (cfs). This flow rate will physically limit maximum drawdown on the reservoir to one vertical foot per day.

F. Once pumping is curtailed, it is anticipated that Canal spills into Mack Wash will increase and that exceedances of the levels specified in Paragraph 6.B herein will be remedied. Once E.coli and fecal coliform are reduced below the levels specified in Paragraph 6.B. herein, pumping may resume, unless pumping has been curtailed pursuant to Paragraph 6.C.

G. Canal spill data has been collected for water years 1992 - 1997. Canal modeling has been completed using three years of data, 1992, 1993 and 1994. Canal modeling was performed by the Irrigation Training and Research Center, California Polytechnic State



University in San Luis Obispo, CA. Information on the historical Highline Lake spill data, modeled spill data running the Canal without the Pump Station and modeled spill data running the Canal with the Pump Station is presented in the following table. However, the Association is in no way obligated to insure spills from the Canal into Highline Lake at any level, including the modeled canal spills.

Table 1 – Spill Data from the Canal into Highline Lake (Acre-Feet)

Historical data				
Year	August	September	October	November
1992	3937	4007	3701	971
1993	2212	2410	3384	724
1994	3159	3903	5516	2092
1995	2930	3855	4656	1601
1996	3117	5494	5940	1498
1997	3962	4803	5979	1427
Modeled Canal spills into Highline Lake with new Canal checks structures. (No pump Station operation.).				
1992	4149	4110	4099	NM
1993	3744	4153	4118	NM
1994	5034	4970	>5000	NM
Modeled Canal spills into Highline Lake with Canal checks and use of the Pump Station				
1992	867	692	725	NM
1993	805	762	676	NM
1994	902	735	677	NM

NM – Not modeled because no operational changes to benefit fish are anticipated.

#### 7. Additional Water Quality Problems at Highline Lake

In addition to the limitations set forth in Paragraph 6 herein, a study is currently being conducted at Highline Lake to identify other water quality problems that may result from the operation of the Pump Station. The parties developed the study objectives and the scope of work developed by the contractor was approved by all of the parties. The Recovery Program will provide the funding in the amount of one hundred seventy-two thousand, five hundred dollars (\$172,500.00) to State Parks to conduct the study. The Association will not be required to contribute to the study. The study will take four years. The first year of the study has been completed and provided baseline water quality data. The second year has been completed and monitored the effects of the Improvements on water quality and the third year will continue monitoring of those effects. The fourth year will monitor the effects of the Pump Station, if constructed. The data collected will be used to produce a comprehensive water quality report.

The parties agree that, if other water quality problems, in addition to E.coli or fecal coliform, including, but not limited to, algal blooms, arise at Highline Lake subsequent to the construction of and caused by the operation of the Pump Station, the parties, if necessary, will work together to resolve the problem and will specifically seek the assistance of the Recovery

Program participants in addressing a remediation of the problem. The Association will not be required to contribute to the remediation of such water quality problems.

The parties recognize that curtailment of the Pump Station may be a viable remedy for water quality problems. When pumping curtailment is the selected remedy, pumping can resume once the water quality problem has been remedied.

8. No Control Over Canal, Project, Water Rights or Detriment to Highline State Park

Nothing in this Contract and Grant of Easement is intended to or shall give State Parks or the Service any right to control or interfere with the operation and maintenance of the Project or Canal beyond the limitations placed on the operation of the Pump Station in this Contract and Grant of Easement. In addition, nothing in this Contract and Grant of Easement is intended to or shall give Reclamation, the Service or the Association any right to operate the Pump Station in a manner which causes the water quality of Highline Lake to be adversely affected beyond the limits set forth in Paragraphs 5 and 6 herein.

9. Notice

Any notice, demand, or request authorized or required by this Contract and Grant of Easement shall be deemed to have been given on behalf of all parties to this Contract and Grant of Easement when mailed first class, postage prepaid, to the following:

Director, Colorado Division of Parks and  
Outdoor Recreation  
1313 Sherman, Room 618  
Denver, CO 80203  
Telephone: (303) 866-3203

Area Manager  
Bureau of Reclamation  
Western Colorado Area Office  
2764 Compass Drive, Suite 106  
Grand Junction, CO 81506  
Telephone: (970) 248-0600

Assistant Field Supervisor  
Fish and Wildlife Service  
Ecological Services, Western Colorado Office  
764 Horizon Drive, Building B  
Grand Junction, CO 81506  
Telephone: (970) 243-2778

Manager  
Grand Valley Water Users Association  
1147 24 Road  
Grand Junction, CO 81505  
Telephone: (970) 242-5065

A. The designation of the respective addressee, address, and/or telephone number may be changed by written notice given in the same manner as provided herein.

10. Miscellaneous

A. Officials Not to Benefit. No Member or Delegate to Congress or Resident Commissioner or official of the United States or the State of Colorado shall benefit from this Contract and Grant of Easement other than as a water user or landowner in the manner as other water users or landowners.

B. Assignment Limited - Successors and Assigns Obligated. The provisions of this Contract and Grant of Easement shall apply to and bind the successors and assigns of the parties hereto and no assignment or transfer of this Contract and Grant of Easement or any right or interest herein shall be valid until approved in writing by all parties hereto.

C. No Improper Payments. The parties hereto warrant that they have not employed any person to solicit this Contract and Grant of Easement upon any contract for a commission, percentage, brokerage, or contingent fee, except those disclosed. Breach of this warranty shall give any of the parties hereto the right to annul this Contract and Grant of Easement. This warranty shall not apply to commissions payable by contractors upon contracts or sales secured or made through bona fide established commercial or selling agencies maintained by the parties hereto for the purpose of securing this Contract and Grant of Easement.

D. Appropriations. Nothing contained in this Contract and Grant of Easement shall be construed as binding the United States to expend in any one fiscal year any sum in excess of appropriations made by Congress for the purposes of this Contract and Grant of Easement for that fiscal year or as involving the United States in any contract or other obligation for the further expenditure of money in excess of such appropriations. Further, financial obligations of the state payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.

11. Terms Survive Connivance of Easement

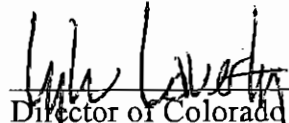
The terms of this Contract and Grant of Easement shall survive the conveyance of the easement provided for herein.

IN WITNESS WHEREOF, the parties have executed this Contract and Grant of Easement as of the day and year first written above.

**GRANTOR:**

**State of Colorado**

**Bill Owens, Governor**



Director of Colorado Division of Parks and  
Outdoor Recreation

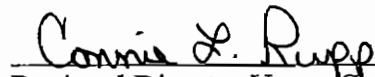
Approved as to Form:



Assistant Attorney General  
State of Colorado

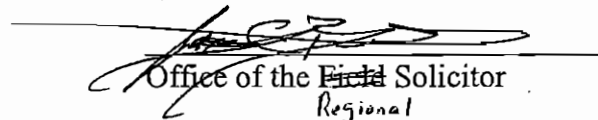
**GRANTEE:**

**United States Bureau of Reclamation**



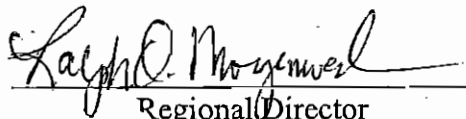
Regional Director Upper Colorado Region

Approved



Office of the ~~Field~~ Solicitor  
Regional

**United States Fish and Wildlife Service**

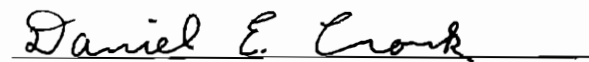


Regional Director

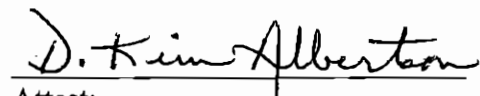
*the Regional Solicitors Office  
says that only one solicitor  
needs to sign this  
document*

Approved by Rocky Mountain  
Region 6 Regional Office of the  
Solicitor

**Grand Valley Water Users Association**



President



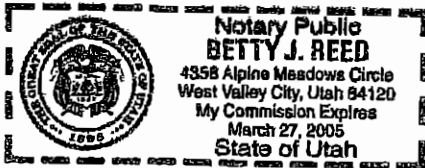
Attest:

ACKNOWLEDGMENT

State of Utah           )  
                                  )  
County of Salt Lake    )

On the 24th day of June, 2004, personally appeared before me  
Connie L. Rupp, known to me to be the Acting Regional Director  
of the Bureau of Reclamation, Upper Colorado Region, United States Department of the  
Interior, the signer of the above instrument, who duly acknowledged to me that he/she  
executed the same on behalf of the United States of America.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official  
seal the day and year first above written.



Betty J. Reed  
Notary Public in and for the  
State of Utah  
Residing at West Valley  
My commission expires: March 27, 2005

**// MOU No. 2-FC-40-6060**

**For the Commitment to Complete Grand  
Valley Water Management Improvements**

Grand Valley Project  
Colorado

MEMORANDUM OF UNDERSTANDING  
among the  
UNITED STATES OF AMERICA, DEPARTMENT OF INTERIOR  
BUREAU OF RECLAMATION  
and the  
GRAND VALLEY WATER USERS ASSOCIATION  
for  
COMMITMENT TO COMPLETE GRAND VALLEY WATER MANAGEMENT  
IMPROVEMENTS

This MEMORANDUM OF UNDERSTANDING (MOU), made this 31<sup>st</sup> day of January, 2002, pursuant to the Reclamation Act of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, particularly the Act of April 11, 1956 (70 Stat. 105), the Act of July 9, 1965 (70 Stat. 216), the Endangered Species Act, 16 U.S.C. 1531 et seq., the Fish and Wildlife Coordination Act, 16 U.S.C. 661 et seq., and the Act to Authorize the Bureau of Reclamation to Provide Cost Sharing for the Endangered Fish Recovery Implementation Programs for the Upper Colorado and San Juan River Basins, [the Act of October 30, 2000, (114 Stat. 1602, P. L. 106-392); among the UNITED STATES OF AMERICA, DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION (hereinafter styled Reclamation), acting through the Secretary of Interior, and the GRAND VALLEY WATER USERS ASSOCIATION (hereafter styled the Association) a corporation organized and existing under the laws of the State of Colorado.

WHEREAS, Reclamation constructed the Grand Valley Project ("Project") in accordance with the Act of June 25, 1910 (36 Stat. 835), which was approved by the President on January 5, 1911, for irrigation of project lands and the production of hydroelectric energy by diversion of water from the Colorado River in Mesa County, Colorado, into the Government High Line Canal ("Canal"), a major project feature;

WHEREAS, the Association is operating and maintaining the Project, including, but not limited to the Canal, pursuant to an amendatory contract with Reclamation, dated January 27, 1945 and amended April 27, 1964 (Symbol No. Ilr-644);

WHEREAS, Reclamation is the lead federal agency involved in constructing the capital improvements for the Recovery Program for the Endangered Fishes of the Upper Colorado ("Recovery Program") and is authorized to enter into this MOU under the Recovery Program;

WHEREAS, Reclamation will design and own the Grand Valley Water Management Improvements ("Improvements") as described in the Final Environmental Assessment dated September 1998. The Association will operate and maintain the Improvements, pursuant to a contract between Reclamation, the Association, and the Colorado Water Conservation Board dated May 12, 2000, Contract Encumbrance Number C150002 (the "Improvements Grant Contract"). The Improvements will consist of, but not be limited to, new check structures within the Canal, the purpose of which is to reduce the Canal's late summer diversion requirements and contribute to the goal of improving flow conditions in the 15-Mile Reach of the Colorado River for the recovery of endangered fish, and the other improvements described on Appendices A and B, attached hereto;

WHEREAS, the Improvements Grant Contract provides, at Recital D, that the Association and Reclamation will enter into a separate agreement regarding the design, construction and installation of the Improvements and Reclamation's cost-share;

WHEREAS, the Association intends to perform the work identified on Appendix A as work to be performed by the Association (the "Association Work"), and to be reimbursed for the cost of that work, pursuant to a proposed Agreement (the "NFWF Agreement") between the Association and the National Fish and Wildlife Foundation (the "Foundation"). The NFWF Agreement has not yet been executed by the parties thereto;

WHEREAS, the NFWF Agreement anticipates that Reclamation will perform certain services and other functions with respect to the Association Work. However, Reclamation will not be a party to the NFWF Agreement; and

WHEREAS, Reclamation and the Association desire to enter into this MOU to ensure the coordination of the Association Work with the services and other functions to be performed by Reclamation and to implement the requirement of separate agreement between Reclamation and the Association as set forth in Recital D of the Improvements Grant Contract.

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein, the parties agree as follows:

1. Association Work.

A. Subject to the provisions of Paragraph 1.C., below, the Association is responsible for performing the Association Work, which consists of those portions of the Appendix A improvements that are identified as being the responsibility of the Association. The Association will take the following actions in connection with the performance of the Association Work:

- (1) Obtain and install all materials necessary for the Association Work.



(2) Provide all equipment necessary for the Association Work. The Association may use its own equipment if it is available and charge prevailing rental rates for the use of its equipment or use rental equipment to accomplish the Association Work.

(3) Comply with all applicable safety requirements.

(4) Administer all subcontracts necessary to complete the Association Work.

(5) Assist Reclamation in acquisition of all necessary Federal, State, county, city and local permits.

(6) Assist Reclamation in all necessary design data activities, field verification of existing facilities, and other preconstruction assistance.

(7) Developing a process to collect canal administrative data and report the data to the Recovery Program.

(8) Establish and maintain accurate accounts and other books and records pertaining to all financial transactions and costs related to or charged against the approved Improvements feature included within the Association Work.

(9) Notify Reclamation 3 days in advance of any intended construction starts for the Association Work, and keep Reclamation informed as to the progress.

B. In the event Reclamation notifies the Association in writing it cannot perform any or all of the design, specification, inspection, or testing needed to continue the construction of Improvements, the Association may contract with an engineering firm or firms to perform these services. Reclamation will review and approve engineering plans, designs, and specifications prepared by such engineering firms in a timely manner. Nothing in this Paragraph shall be deemed to modify the scope of the Reclamation Assistance Services identified in Paragraph 2, below, or to allow Reclamation to elect not to perform any of such Services.

C. The Association shall not be responsible for the performance of its obligations under this MOU, and shall be entitled to terminate this MOU (without prejudice to any other remedies it may have), if any of the following conditions occur: (1) the NFWF Agreement is not executed by the Foundation and the Association; (2) the Recovery Program fails to allocate necessary funds to the Foundation to allow it to pay the amounts due to the Association under the NFWF Agreement; (3) Reclamation fails to perform any of the Reclamation Assistance Services in a timely manner; or (4) related facilities are not completed by others according to schedule.

## 2. Reclamation Work.

A. Certain work identified in Appendix A as work to be performed by Reclamation has already been completed. Reclamation agrees to perform the remaining work identified as Reclamation work in Appendix A in a timely manner, at no cost to the Association; provided, however, that the work relating to the Highline Lake pump station will be performed pursuant to and subject to the provisions of a separate agreement between the Association, Reclamation, the U.S. Fish and Wildlife Service, and certain agencies of the State of Colorado, which agreement is currently being negotiated by the proposed parties thereto.

B. The NFWF Agreement anticipates that Reclamation will cooperate with and assist the Association in the performance of the Association Work in certain respects, including generally the performance of planning and design work, preparation of technical specifications, provision of construction quality control services, and preparation of work schedules (the "Reclamation Assistance Services"). Reclamation and the Association agree that the term "Reclamation Assistance Services" includes, without limitation, the following specific services to be performed by Reclamation:

(1) Assist the Association in development of criteria for selection of an integrator for the SCADA system.

(2) Plan and develop the necessary designs to construct the GVWM improvement features identified in Appendix A. During implementation, the current Improvements may differ from Appendix A. Reclamation will notify the Foundation in writing of any changes that will require additional funding.

(3) Prepare technical specifications for constructing the Improvements.

(4) Provide construction quality control (inspection, testing, etc.) and construction management.

(5) With the assistance of the Association, prepare the scope of work to submit to the Recovery Program. The scope of work shall contain a description of the work to be performed, total costs, and any other details needed by the Foundation and Reclamation for budgeting purposes. Work items may include, but are not limited by this enumeration, the costs of labor, material, equipment, legal work, superintendence, administration and overhead, general expenses, inspection, special services, subcontracts, and property damage payments (except for damages caused by acts of negligence by the Association and third parties).

(6) Developing a process to collect canal administrative data and report the data to the Recovery Program.

(7) Review, approve and promptly forward to the Foundation all invoices from the Association which have been submitted to the Foundation for payment.

(8) Secure and pay compensation and damages for all temporary and permanent easements necessary for the construction, operation and maintenance of Improvements and provide appraisal for any property damage claims.

(9) Notify the Recovery Program of any change to an approved scope of work.

3. Change in Improvements. Nothing in this MOU shall preclude Reclamation and the Association from changing, modifying or adding to the Improvements to be constructed. Any such changes, modifications, or additions shall be mutually agreed upon in writing by Reclamation and the Association. Such changes may require modification to the Recovery Program scope of work if the changes increase the total estimated cost of the Improvements or change schedules as identified in the scope of work.

4. Term. Unless sooner terminated by agreement of the parties or as provided in Paragraph 1.C., above, this MOU shall continue until all Improvements have been completed.

5. Miscellaneous.

A. Officials Not to Benefit. No Member of or Delegate to Congress or Resident Commissioner or official of the United States or the State of Colorado shall benefit from this MOU other than as a water user or landowner in the manner as other water users or landowners.

B. Assignment Limited - Successors and Assigns Obligated. The provisions of this MOU shall apply to and bind the successors and assigns of the parties hereto and no assignment or transfer of the MOU or any right or interest herein shall be valid until approved in writing by all parties hereto.

C. No Improper Payments. The parties hereto warrant that they have not employed any person to solicit this MOU upon any contract for a commission, percentage, brokerage, or contingent fee, except those disclosed. Breach of this warranty shall give any of the parties hereto the right to annul the MOU. This warranty shall not apply to commissions payable by contractors upon contracts or sales secured or made through bona fide established commercial or selling agencies maintained by the parties hereto for the purpose of securing this MOU.

D. Appropriations. Nothing contained in this MOU shall be construed as binding the United States to expend in any one fiscal year any sum in excess of appropriations made by Congress for the purposes of this MOU for that fiscal year or as involving the United States in any contract or other obligation for the further expenditure of money in excess of such appropriations.

IN WITNESS WHEREOF, the parties have executed this MOU as of the day and year first written above.

GRAND VALLEY WATER USERS ASSOCIATION

By: Stu C. Pitts  
President

Attest:

Daniel E. Crowk  
Secretary V. President

UNITED STATES OF AMERICA, DEPARTMENT OF  
INTERIOR, BUREAU OF RECLAMATION

By: Mitchell Ward

## Appendix A

### Grand Valley Water Management Project

	Responsible Party
SCADA system design and layout	
design	USBR/GVWUA
base station & repeater	GVWUA
Government Highline Canal Headworks	
RTU	GVWUA
radio	GVWUA
2 water level sensors	GVWUA
electrical installation	GVWUA
Orchard Mesa Power Canal turnout	
new gate hoist	GVWUA
install air vent	GVWUA
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
electrical installation	GVWUA
Tunnel No. 3 entrance	
new gate hoist	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
RTU	GVWUA
Price-Stubb check	
install new overshot gate	GVWUA
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
electrical installation	GVWUA
Palisade Administrative Spill Pipeline	
intake structure	USBR



## Appendix A - Work Responsibilities

	Responsible Party
1,000 ft. pipeline installed	USBR
blocking & air vents	USBR
electrical service	USBR
RR crossing	USBR
Price Ditch crossing	USBR
road crossing(s)	USBR
outlet structure	USBR
easement	USBR
RTU	GVWUA
flow meter	GVWUA
gate position sensor	GVWUA
Clifton check	
add 2 manually operated sluice gates	GVWUA
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
electrical service	USBR
Lewis Wash siphon	
long crested weir	USBR
electrically operated sluice gate	USBR
electrical service	USBR
Indian Wash flume	
acoustical flow meter	USBR
water level sensor	GVWUA
RTU	GVWUA
electrical installation	GVWUA
A 1-1/4 check	
concrete structure	USBR
electrical service	USBR
2 - 12' gates w/ hoists	USBR
RTU	GVWUA
2 water level sensor	GVWUA

## Appendix A - Work Responsibilities

2 gate position sensors	Responsible Party GVWUA
A7 check	
concrete structure	USBR
electrical service	USBR
2 - 12' gates w/ hoists	USBR
RTU	GVWUA
2 water level sensors	GVWUA
2 gate position sensors	GVWUA
A15 check	
concrete structure	USBR
electrical service	USBR
2 - 12' gates w/ hoists	USBR
RTU	GVWUA
2 water level sensors	GVWUA
2 gate position sensors	GVWUA
A21-1/2 check	
concrete structure	USBR
electrical service	USBR
2 - 12' gates w/ hoists	USBR
RTU	GVWUA
2 water level sensors	GVWUA
2 gate position sensors	GVWUA
A27 check	
concrete structure	USBR
electrical service	USBR
2 - 12' gates	USBR
RTU	GVWUA
2 water level sensors	GVWUA
2 gate position sensors	GVWUA
A32 check	
concrete structure	USBR

## Appendix A - Work Responsibilities

	Responsible Party
electrical service	USBR
2 - 12' gates	USBR
RTU	GVWUA
2 water level sensors	GVWUA
2 gate position sensors	GVWUA
Stewart Wash check	
modify setpoint	GVWUA
Big Salt Wash check	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
16 Road check	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
13 Road check	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
Camp 7 spill	
100' long crested weir	GVWUA
Accusonic flowmeter	GVWUA
water level sensor	GVWUA
new sluice gate on weir	GVWUA
Highline Lake pump station (75 cfs)	
pumps	USBR
structure	USBR
waterways	USBR
electrical service	USBR
electrical transformers	USBR



## Appendix A - Work Responsibilities

	Responsible Party
misc. equipment	USBR
RTU	GVWUA
2 water level sensors	GVWUA
Camp 7 check	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
A49 check	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
East Salt Wash	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
8 Road check	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
Badger Wash check	
RTU	GVWUA
2 water level sensors	GVWUA
gate position sensor	GVWUA
Badger Wash spill	
RTU	GVWUA
2 water level sensors	GVWUA

**// Contract No. 6-07-40-R0270**

**Providing for the Rehabilitation, Operation,  
and Maintenance of Distribution Facilities to  
Reduce Salinity Inflow to the Colorado River**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

CONTRACT BETWEEN THE UNITED STATES OF AMERICA  
AND  
THE GRAND VALLEY WATER USERS ASSOCIATION PROVIDING FOR  
REHABILITATION, OPERATION, AND MAINTENANCE OF DISTRIBUTION  
FACILITIES TO REDUCE SALINITY INFLOW TO THE COLORADO RIVER

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

CONTRACT BETWEEN THE UNITED STATES OF AMERICA  
AND  
THE GRAND VALLEY WATER USERS ASSOCIATION PROVIDING FOR  
REHABILITATION, OPERATION, AND MAINTENANCE OF DISTRIBUTION  
FACILITIES TO REDUCE SALINITY INFLOW TO THE COLORADO RIVER

1           THIS CONTRACT, made this 10th day of April, 1986,  
2   between THE UNITED STATES OF AMERICA, hereinafter called the United States or  
3   Contracting Officer, acting through the Secretary of the Interior, and  
4   pursuant to the Federal Reclamation Laws, and the GRAND VALLEY WATER USERS  
5   ASSOCIATION, hereinafter called the Association or Contractor, organized and  
6   existing pursuant to laws of the State of Colorado, with its office and  
7   principal place of business at Grand Junction, Colorado;

8           WITNESSETH, THAT:

9           WHEREAS, the following statements are made in explanation:

10           a. Under the authority of Federal Reclamation Law, the United  
11   States completed construction of the Grand Valley Irrigation Project, here-  
12   inafter referred to as the project; and

13           b. WHEREAS, the United States and the Association entered into a  
14   contract dated February 13, 1913, symbol Ilr-644, which was supplemented by  
15   contracts dated January 4, 1928; January 10, 1930; September 9, 1931; March

1 10, 1936; February 7, 1942; February 9, 1942; March 27, 1942; January 27,  
2 1945; and April 27, 1964; all of said contracts being collectively referred to  
3 as the Government - Association Contract; and,

4 c. WHEREAS, the project consists of two divisions; the Garfield  
5 Gravity Division herein after called Gravity Division, and the Orchard Mesa  
6 Division, with facilities consisting of 90 miles of canals, 166 miles of  
7 laterals, and approximately 112 miles of drains; and

8 d. WHEREAS, the total irrigable area within the Gravity  
9 Division is 23,341 acres; and

10 e. WHEREAS, the United States is authorized to proceed with a  
11 program of works of improvement for the enhancement and protection of the  
12 quality of water available in the Colorado River for use in the United States  
13 and in the Republic of Mexico; and,

14 f. WHEREAS, pursuant to Public Law 93-320 of June 24, 1974  
15 (88 Stat. 266), the Secretary of the Interior is constructing the Grand Valley  
16 Unit of the Colorado River Basin Salinity Control Project, Colorado, herein-  
17 after called the Grand Valley Unit, consisting of measures and all necessary  
18 appurtenant and associated works to reduce the salinity contribution from the  
19 Grand Valley by the seepage of irrigation water from the irrigated lands of  
20 the valley into the ground water and thence into the Colorado River; and

21 g. WHEREAS, the Association and the United States executed  
22 Contract No. 0-07-40-L1352 dated March 11, 1980, providing for rehabilitation,  
23 operation and maintenance of facilities to reduce salinity inflow to the  
24 Colorado River; and

1. h. WHEREAS, upon execution of this contract, Contract No.  
2 0-07-40-L1352 between the United States and the Grand Valley Water Users  
3 Association dated March 11, 1980, will be superceded and will no longer be in  
4 force; and

5 i. WHEREAS, the United States has essentially completed work on  
6 Stage One Area Facilities as described herein in Article 1.h; and

7 j. WHEREAS, pursuant to Public Law 98-569 of October 30, 1984,  
8 which amends Public Law 93-320 of June 24, 1974 (88 Stat. 266), the Secretary  
9 shall reimburse the costs incurred by the water users as a result of the  
10 construction of the Grand Valley Unit; and

11 k. WHEREAS, the United States and the Association desire to  
12 initiate and complete work on Stage II Area facilities as described herein in  
13 Article 1.i; and

14 l. WHEREAS, the United States and the Association find it  
15 necessary to supercede Contract No. 0-07-40-L1352, dated March 11, 1980, to  
16 further provide for rehabilitation, operation, maintenance and replacement of  
17 facilities on the Gravity Division as a result of the construction of the  
18 Grand Valley Unit;

19 NOW THEREFORE, in consideration of the mutual and dependent covenants  
20 herein contained, it is mutually agreed between the parties as follows:

21 GENERAL DEFINITIONS

22 1. Where used in this contract, the term:

23 a. "Secretary" or "Contracting Officer" shall mean the Secretary  
24 of the Interior, United States of America, or his duly authorized  
25 representative.

26 b. "Association" or "Contractor" shall mean the Grand Valley  
27 Water Users Association.

1 c. "Public Law 93-320" shall mean Public Law 93-320; 88 Stat.  
2 266 dated June 24, 1974, as amended by Public Law 98-569, dated October 30,  
3 1984, known as the Colorado River Basin Salinity Control Act.

4 d. "Year" shall mean the period January 1 through the following  
5 December 31.

6 e. "Fiscal Year" shall mean the period October 1, through the  
7 following September 30, or as the Federal fiscal year may be modified by  
8 Congress.

9 f. "Distribution Works" shall include all canals, laterals,  
10 drains, and other works which serve Association lands, and which are operated  
11 and maintained by the Association; or any other works serving water user lands  
12 which may be constructed by the United States pursuant hereto for the  
13 distribution and management of water to the total irrigable area served by the  
14 Association.

15 g. "Protective Works" shall include approximately 37 miles of  
16 interceptor ditches, 17 detention ponds, and associated cross drainage  
17 structures provided for the protection of the distribution works.

18 h. "Stage One Area Facilities" shall mean that portion of the  
19 distribution works and protective works located within the Gravity Division  
20 area bounded on the north by the northern most rights-of-way for said works,  
21 the Kiefer Extension of the Grand Valley Irrigation Company Highline Canal and  
22 Highway 50 on the south, the Mack Wash on the west, and the East Branch of  
23 Reed Wash on the east and in addition to the foregoing, includes that portion  
24 of the Government Highline Canal with associated facilities, protective works  
25 and rights-of-way extending eastward from said East Branch of Reed Wash to a  
26 point approximately 500 feet east of the Big Salt Wash siphon inlet, including



1 the moss screen and debris removal structure and associated facilities. The  
2 total irrigable area within the Stage One Area of the project is approximately  
3 6,500 acres.

4 i. "Stage Two Area Facilities" shall mean the distribution works  
5 and protective works located within the Gravity Division area bounded on the  
6 north by the northern most rights-of-way for said works or the northerly  
7 boundaries of lands classified as irrigable extending beyond such  
8 rights-of-way, on the west by West Salt Creek, on the south by the northern  
9 most canals of the Grand Valley Irrigation Company and the Colorado River,  
10 except where Gravity Division lands extend south of said canals, and on the  
11 east by the Colorado River, excluding the area of Stage One as described in  
12 Article 1.h. herein. The total irrigable area for service within the Stage Two  
13 area of the project is approximately 16,841 acres.

14 j. "Replacement" shall mean a major modification or  
15 reconstruction of a completed unit, or portion thereof, which is necessitated,  
16 through no fault of the Association, by design or construction inadequacies or  
17 by normal limits on the useful life of a facility.

18 k. "Project Works" shall mean the Grand Valley Diversion Dam and  
19 all works and facilities listed in Article 1, subparagraphs f., g., h., and  
20 i., herein.

21 l. "Transferred Works" shall mean those features constructed as  
22 part of the Grand Valley Unit with, or reimbursed by, Federal funds and  
23 transferred to the Grand Valley Water Users Association for their care,  
24 operation, and maintenance.

1

2

## 11

12

1 determination of the type of system to be provided will be made upon  
2 consultation with the Association. Any device installed for measuring or  
3 regulating the flows of water installed by the Contracting Officer as a part  
4 of the project that, within 3 years of the date of transfer of the facilities  
5 to the Association and by mutual agreement of the parties, is found to be  
6 unsatisfactory or too costly to operate will be replaced. The Contracting  
7 Officer will accomplish these actions at no cost to the Association.

8 OPERATION AND MAINTENANCE OF DISTRIBUTION AND PROTECTIVE WORKS

9 4. a. The Association will be responsible for the continued  
10 operation and maintenance of the distribution and protective works constructed  
11 or improved as authorized by Section 202(2) of Public Law 93-320, Title II,  
12 dated June 24, 1974, as amended, to the standards to which they have been  
13 constructed, or improved, and in a condition which will assure the maximum  
14 reduction of salinity inflow to the Colorado River. Water deliveries within  
15 the Gravity Division shall be made only to those lands that are  
16 classified as irrigable as described in Articles l.h. and l.i herein. The  
17 remaining provisions of this contract shall apply only upon satisfactory  
18 completion of, and limited to, Stage One and each subsequent stage of  
19 construction, or portion thereof, as determined by the Contracting Officer and  
20 subsequently accepted by the Association, and then only within the stage or  
21 portion thereof so accepted. Any construction or rehabilitation pursuant to  
22 this contract must be performed in a timely fashion which will not interrupt  
23 the flow of irrigation water during the irrigation season.

24 b. Pursuant to Public Law 98-569 dated October 30, 1984, the  
25 Secretary of the Interior shall reimburse the Association for the  
26 costs of operation and maintenance to the extent the costs exceed the expenses

1 that the Association would have incurred in the thorough and timely operation  
2 and maintenance of its canal, lateral and drainage system absent the construc-  
3 tion of the Grand Valley Unit. The annual operation and maintenance (O&M)  
4 costs to be reimbursed to the Association are those costs incurred during the  
5 O&M of the Association's portion of the Grand Valley Unit in excess of the  
6 base Gravity Division operation and maintenance cost, except there will be no  
7 reimbursement for costs incurred on the "yard and livestock" turnouts beyond  
8 the guard valves. It is mutually agreed that as of July 1984, the base annual  
9 O&M cost for the Association is \$433,500. The base cost will be indexed  
10 annually in accordance with the Annual Irrigation Operation and Maintenance  
11 Cost Trends Index published by the Bureau of Reclamation. It is understood by  
12 both parties that this base cost includes the normal operation and maintenance  
13 of the Canyon Division. Normal operation is defined as that activity  
14 necessary at any given time to provide a reliable and dependable water supply  
15 for the distribution works, and normal maintenance is defined as maintenance  
16 necessary to repair, restore, stabilize and/or safeguard Canyon Division  
17 facilities. Operation and maintenance or replacement costs incurred in the  
18 Canyon Division not consistent with the above, shall be reimburseable to the  
19 Association by the United States only to the extent such costs are directly  
20 related to salinity, as determined by joint decision of the parties to this  
21 contract. [The reimbursement of costs in excess of the base cost will be made  
22 in the fiscal year following the fiscal year in which they occurred. The  
23 Association will annually submit to the Contracting Officer by October 15, or  
24 as soon as such information can be compiled, a summary of the total, actual  
25 O&M costs for the previous fiscal year, and the Contracting Officer will  
26 reimburse the Association the difference between the total, actual O&M costs  
27 and the indexed base O&M costs within 30 calendar days of receiving said

See  
letter  
dated  
Sept 15  
1987

1 information.] In addition, the Contracting Officer and the Association will  
2 meet annually prior to the beginning of each fiscal year to discuss the  
3 upcoming year's O&M work, the anticipated costs, the estimated amounts to be  
4 reimbursed, and anticipated work and costs 2 to 5 years in the future. If the  
5 amounts budgeted by the Contracting Officer for the upcoming fiscal year are  
6 less than the anticipated reimburseable O&M, then the Contracting Officer and  
7 the Association shall mutually prioritize the work to stay within the  
8 appropriated funds and/or request additional funds to accomplish the work.

9           c. Prior to the time the care, operation, and maintenance  
10 responsibilities are transferred to the Association a joint inspection will  
11 be made by the Association and the Contracting Officer or his designated  
12 representative, to determine what deficiencies, if any, exist and a course of  
13 action necessary to correct them. When the deficiencies have been defined,  
14 the corrective action program agreed upon, and with the Association's  
15 approval, the Contracting Officer will provide written notice and the Associa-  
16 tion will accept the care, operation and maintenance responsibility. The  
17 Contracting Officer may utilize the Association for correcting any or all  
18 deficiencies within the Association's capabilities. A schedule for completing  
19 this work will be developed jointly by the Association and the Contracting  
20 Officer pursuant to Article 7. If it is mutually beneficial to have the  
21 Association correct these deficiencies, funds for this work will be advanced  
22 to the Association pursuant to Article 8 herein.

23           d. During the "seasoning and testing" period following the  
24 completion of construction, but before the rehabilitated salinity facilities  
25 have been transferred to the Association for care, operation and maintenance,  
26 the Contracting Officer may utilize the Association to operate and maintain

1 any such facilities and the Association may agree to accept this O&M respon-  
2 sibility, provided adequate funds are advanced to the Association for this  
3 work.

4 e. Upon substantial completion of part or all of the project  
5 works, or as otherwise determined by the Contracting Officer, and following  
6 written notification, the care, operation, and maintenance of any or all of  
7 the project works shall be transferred to the Association in accordance with  
8 subarticle c. herein. Title to such transferred works will remain in the name  
9 of the United States unless provided otherwise by law. The Association shall  
10 care for, operate, and maintain such transferred works in full compliance with  
11 the terms of this contract, and in such manner that said transferred works  
12 remain in good and efficient condition. Necessary repairs of the transferred  
13 works shall be made promptly by the Association. In case of unusual  
14 conditions or serious deficiencies in the care, operation, and maintenance of  
15 the transferred works threatening or causing interruption of water service,  
16 the Contracting Officer may issue to the Association a special written notice  
17 of the necessary repairs. Within 60 days of receipt of such notice, the  
18 Association shall either make the necessary repairs or submit a plan  
19 acceptable to the Contracting Officer for accomplishing said repairs, the cost  
20 of which shall be reimbursed to the extent that subarticle b. herein provides.  
21 If the Association fails to do either within 60 days of receipt of said  
22 notice, the Contracting Officer may cause the repairs to be made and the cost  
23 thereof shall be advanced by the Association as directed by the Contracting  
24 Officer and will be reimbursed to the Association to the extent that  
25 subarticle b. herein provides.

1           f. The Association shall not make any substantial changes in the  
2 transferred works without first obtaining written consent of the Contracting  
3 Officer.

4           g. The Association agrees to indemnify the United States for,  
5 and hold the United States and all of its representatives harmless from, all  
6 damages resulting from suits, actions, or claims of any character brought on  
7 account of any injury to any person or property arising out of any act,  
8 omission, neglect, or misconduct in the manner or method of performing any  
9 construction, care, operation, maintenance, supervision, examination,  
10 inspection, or other duties of the Association or its representatives required  
11 under this contract.

12           h. In the event the Association is found to be operating the  
13 transferred works or any part thereof in violation of this contract, then,  
14 upon the election of the Contracting Officer, the United States may take over  
15 from the Association the care, operation, and maintenance of the transferred  
16 works by giving written notice to the Association of such election and the  
17 effective date thereof. Thereafter, during the period of operation by the  
18 United States, upon notification by the Contracting Officer, the Association  
19 shall pay to the United States, annually in advance, the indexed Gravity  
20 Division base operation and maintenance cost of the returned works. Following  
21 written notification from the Contracting Officer, the care, operation, and  
22 maintenance of the works may be retransferred to the Association.

23           SOIL AND WATER CONSERVATION AND SALINITY CONTROL

24           5. a. In the execution of this contract, the Association and the  
25 United States acknowledge the desirability and the necessity of the adoption  
26 of proper soil and water conservation and salinity control practices to  
27 protect the lands in the Association against deterioration; to make maximum

1 reductions in the return flow salinity; to permit the economic use of water;  
2 and to sustain optimum crop yields. The Contracting Officer and the  
3 Association will cooperate to attain these objectives. The Association agrees  
4 to operate the rehabilitated distribution works in a manner that will make the  
5 most effective and efficient use of the Association's water supply, with a  
6 conscious effort toward the accomplishment of salinity control in the Grand  
7 Valley. Nothing in this contract shall be construed to alter, amend, modify,  
8 or conflict with the rights of the Association to make use of all water  
9 adjudicated for use within the Gravity Division in a manner consistent with  
10 the laws and constitution of the State of Colorado; Provided, however, that  
11 any water saved by the rehabilitation and operation of project facilities may  
12 be applied only to those lands within the Gravity Division which are  
13 classified as irrigable; Provided further, that any water saved by the  
14 rehabilitation and operation of project facilities may be put to use only in a  
15 manner which shall not result in any material increase of salinity inflow to  
16 the Colorado River.

17           b. The Association further agrees to regulate the use of "excess  
18 water" by the water users through assessments, with "excess water" being  
19 defined as any water delivered to any water user in excess of the base  
20 allotment of 4 acre-feet per irrigable acre per water right agreement. The  
21 water users' base allotment shall be assessed an annual operation and  
22 maintenance charge to be paid in advance of water delivery for each irrigable  
23 acre. The base operation and maintenance assessment per acre-foot is equal to  
24 1/4 of the assessed annual operation and maintenance charges per irrigable  
25 acre.



Excess water assessments shall be as follows:

5th and 6th acre-feet/irrigable acre at 1.5 x base O&M assessment per acre-foot for each acre-foot (or fraction thereof) delivered.

7th acre-foot/irrigable acre at 2 x base O&M assessment per acre-foot for the 7th acre-foot (or fraction thereof) delivered.

8th and up acre-foot/irrigable acre at 3 x base O&M  
assessment per acre-foot for each acre-foot (or fraction thereof)  
delivered.

c. The Association has the right to negotiate the excess charges for excess water if certain weather conditions, soil structure, specific crops, etc., require such consideration. Any reductions of "excess charges" must be approved by the Contracting Officer.

d. The Association agrees to provide a program to advise the water users as to the timing and amounts of irrigation water applications, and to assist the water users with more efficient delivery of water through the improved distribution system.

e. Pursuant to Public Law 93-320, Title II, Section 206, the Association agrees to assist the Contracting Officer in maintaining a program whereby the salinity control measures provided will be continuously monitored to determine the effectiveness of such facilities and to assist in the determination of additional salinity control measures required to comply with Title II, Section 203(b), of the act.

## REPLACEMENT

6. a. Pursuant to Public Law 98-569, the United States shall be responsible for all costs associated with any replacement of salinity facilities as defined in Article 1.j. However, the Association agrees, when directed by the Contracting Officer, to make any necessary replacement of the



1 quarter covered by each schedule. The detailed work schedule for each quarter  
2 may include in the estimated costs the sums required for the preparation of  
3 designs and specifications, engineer's estimates, and other preconstruction  
4 activities required to initiate the stage of construction involved.

5           b. Engineering plans, designs, specifications, and competent  
6 engineering services required for work to be performed in any quarter shall be  
7 submitted to the Contracting Officer sufficiently in advance of the proposed  
8 construction date to permit his review and shall contain sufficient detail to  
9 permit an engineering analysis of structures and to clearly establish proposed  
10 standards of construction thereof. For purposes of this contract, the  
11 Contracting Officer shall be the judge of the adequacy of such plans and  
12 specifications to determine that they are in accord with sound engineering  
13 practices and adequate to protect the interests of the United States. No  
14 construction contract shall be awarded or construction initiated by the  
15 Association until plans and specifications for such work have been approved by  
16 the Contracting Officer. The Contracting Officer shall use due diligence in  
17 processing plans, designs, and specifications submitted by the Association and  
18 his approval, disapproval, or indicated modification thereof shall be  
19 transmitted to the Association in writing.

20           c. Any work schedule or set of engineering plans, designs, and  
21 specifications can only be modified, added to, or deleted after approval by  
22 the Contracting Officer of such modification, addition, or deletion, and upon  
23 his determination that the same is made in a timely manner with respect to the  
24 schedule affected.

ADVANCES BY THE UNITED STATES

1  
2           8.   a.   When directed by the Contracting Officer to perform work  
3 pursuant to Article 4.c., 4.d. and/or 6, and upon approval by the Contracting  
4 Officer of the master work schedule and the detailed work schedule for the  
5 initial quarter or any subsequent quarter, the Contracting Officer will  
6 advance to the Association no later than the first day of each quarter the  
7 sums of money shown as the quarterly requirement on the approved work  
8 schedules, less any estimated balance of funds available from prior advances  
9 unless it is determined by the Contracting Officer to be in the interest of  
10 the United States to make more frequent advances. In the event funds advanced  
11 by the United States are expended prior to the end of the initial quarter or  
12 any subsequent quarter, additional sums may be advanced on the basis of a  
13 supplemental detailed work schedule approved in like manner as the first. Each  
14 quarterly or other advance of funds subsequent to the initial advance shall be  
15 dependent upon performance by the Association, in a manner satisfactory to the  
16 Contracting Officer, of any prior work, but such advance shall not commit the  
17 Contracting Officer to approval of performance of such prior work. The  
18 Contracting Officer, at his election, may withhold any advance of funds  
19 contemplated hereunder at any time when, in his opinion, the Association is in  
20 default or delinquent with respect to performance of any of the terms or  
21 conditions of this contract.

22                   b.   The funds advanced hereunder by the Contracting Officer  
23 shall be used only for costs and expenses incurred by the Association for the  
24 performance of approved detailed work schedules. Such costs and expenses may  
25 include but are not limited to salaries of employees, excluding officers, the  
26 value of equipment used by the Association, materials and supplies, facilities  
27 necessary to repair and maintain pertinent equipment, administrative costs,

1 education costs, engineering and technical assistance costs, and research  
2 costs, as approved by the Contracting Officer. All costs and expenses of the  
3 work program shall be limited to costs reasonably incurred in the exercise of  
4 sound engineering, construction, O&M of facilities, and business practices and  
5 are chargeable or allocable to the work program.

6 c. Immediately upon receipt of each advance of funds from  
7 the Contracting Officer, the Association shall deposit the amount advanced in  
8 a separate, special interest-bearing account in a bank that is a member of the  
9 Federal Reserve System or, if approved by the Contracting Officer, in any  
10 special fiduciary account in the manner provided by laws of the State of  
11 Colorado. Thereafter, the Association may draw upon said special account from  
12 time to time to finance the performance of the work as provided in subdivision  
13 a. of this article. Interest credited by the depository bank on funds  
14 advanced shall be considered as advances by the Contracting Officer. In the  
15 event the funds advanced by the Contracting Officer are expended before the  
16 end of the quarter, additional funds may be made available by the Contracting  
17 Officer as provided for herein.

18 d. If the Association uses funds advanced pursuant to this  
19 contract for purposes other than authorized, as determined by the Contracting  
20 Officer, the Association shall reimburse the funds so misused. In addition,  
21 the Contracting Officer may assess a penalty of \$100, or 10 percent of the  
22 amount of misused funds, whichever is greater, and the Association shall,  
23 within 30 days from the date of notice of such penalty, pay the amount  
24 thereof.

1                   PROGRESS REPORTS, DRAWINGS, INSPECTION, AND SERVICES

2           9.   a.   When performing work pursuant to Articles 4.c., 4.d. and/or  
3   6., the Association shall prepare and furnish to the Contracting Officer, at  
4   such times as the Contracting Officer shall indicate, but not less often than  
5   once each quarter, written reports, including receipts, vouchers, and  
6   cancelled checks which fully describe the progress and cost of work performed  
7   by the Association or for which costs have been incurred or funds obligated by  
8   the Association pursuant to this contract to the end of the preceding month or  
9   other period designated by the Contracting Officer.

10           b.   Any and all work undertaken by the Association pursuant to  
11   this contract shall be open and subject to inspection by the Contracting  
12   Officer or his designated representative at all times. Should it be  
13   determined that any such work is not being performed or has not been completed  
14   in accordance with applicable schedules, plans, and specifications, and  
15   otherwise in accordance with the terms and provisions of this contract, the  
16   Association shall be given written notice thereof within a reasonable time  
17   after inspection. No work undertaken by the Association hereunder shall be  
18   deemed complete until approved by the Contracting Officer.

19           c.   The Association may utilize, in connection with the  
20   performance of work under this contract, such independent expert, consulting,  
21   or supervisory services as it may deem necessary, and the reasonable cost of  
22   such services shall be considered a part of the cost of the work performed.

23                   TRANSFER OF MOVABLE PROPERTY

24           10.   a.   Subject to the terms and conditions of this contract, the  
25   Contracting Officer will provide or allow the Association to acquire certain  
26   movable property which, in the opinion of the Contracting Officer, is  
27   necessary for project purposes.

1                   b. The transfer of title to the Association of certain movable  
2 property required in the care, operation, and maintenance of project works, as  
3 determined by the Contracting Officer, will be made after consultation with  
4 the Association.

5                   TITLE TO PROJECT WORKS TO REMAIN IN THE UNITED STATES

6                   11. Title to the project works constructed or acquired by the United  
7 States shall remain in the United States, unless provided otherwise by law,  
8 notwithstanding transfer of the care, operation and maintenance of any said  
9 works to the Association provided, however, that title to equipment may be  
10 transferred as set out in Article 10.

11                   FINANCIAL RECORDS, MANAGEMENT REPORTS, AND AUDITS

12                   12. a. Pursuant to this agreement, the Association shall maintain  
13 accounts and other books and records pertaining to its financial transactions  
14 that provide the following:

15                               (1) Accurate, current, and complete disclosure of all  
16 expenditures incurred or associated with this agreement on an accrual basis.

17                               (2) Records that identify adequately the source and  
18 application of funds for agreement supported activities.

19                               (3) Effective control over and accountability for all  
20 funds, property, and other assets. The Association shall adequately safeguard  
21 all assets and shall assure that they are used solely for authorized purposes.

22                               (4) Accounting records that are supported by source  
23 documentation, including, but not limited to, bank statements, invoices, and  
24 cancelled checks. Each entry to the accounting records must be supported by  
25 such detailed information as will permit ready identification, analysis, and  
26 verification of all facts relevant thereto.

1                   (5) A systematic method to assure timely and appropriate  
2 resolution of audit findings and recommendations.

3                   b. Reports pertaining to the financial transactions of the  
4 Association shall be furnished to the Contracting Officer on a yearly basis  
5 within 60 days after the end of the fiscal year. Representatives of the  
6 United States shall have the right to examine the Association's books and  
7 records relating to matters covered by this agreement.

8                   c. At the end of each fiscal year, the Contracting Officer may  
9 examine and/or audit the Association's books and records. Such audits shall  
10 be made by qualified individuals who are sufficiently independent of those who  
11 authorize the expenditure of Federal funds to produce unbiased opinions,  
12 conclusions, and judgments. Audits should be made in accordance with  
13 generally accepted auditing standards and the standards published by the  
14 General Accounting Office, Standards for Audit of Governmental Organizations,  
15 Programs, Activities, and Functions.

16                   ACQUISITION OF PROPERTY, EQUIPMENT, MATERIALS AND SUPPLIES

17                   13. The Association is authorized to acquire with funds advanced by  
18 the Contracting Officer, pursuant to the approved work schedule, property,  
19 equipment, materials, and supplies necessary to perform the operation and  
20 maintenance work, replacement and/or correction of deficiencies prescribed in  
21 this agreement and further detailed in the master and quarterly work  
22 schedules. Any property and equipment purchased with funds made available to  
23 the Association shall be taken in the name of the United States and remain in  
24 the ownership of the United States until such time that the title to such  
25 property and equipment is transferred to the Association pursuant to Article



1 10 herein. Any property, equipment, materials, and supplies purchased with  
2 Federal funds shall be used only for work covered by this agreement and cannot  
3 be used for personal use by Association employees.

4 FAILURE TO COMPLETE WORK

5 14. a. In the event that the Association fails, for any reason other  
6 than the failure of the United States to appropriate and allocate funds, to  
7 complete the work to be performed pursuant to this contract as mutually agreed  
8 upon under Articles 4.c., d., and/or 6; the Association shall, upon  
9 receipt of written notice from the Contracting Officer, return to the United  
10 States any unexpended, unobligated and unencumbered balances of funds advanced  
11 by the United States. Following delivery of the notice, the Contracting  
12 Officer may perform or cause to be performed all or any part of the work with  
13 the funds provided herein by the United States.

14 b. Upon giving written notice to the Association as provided  
15 above, the Contracting Officer shall have the right, without further notice,  
16 to take over the care, operation, and maintenance of the project works,  
17 pursuant to the applicable provisions of this contract. The Association shall  
18 transfer to the Contracting Officer custody and use of all equipment,  
19 materials and supplies in such work, which were acquired under the terms of  
20 this contract, and permit the Contracting Officer, its contractors and agents  
21 ingress to and egress from the lands, project works and facilities for the  
22 performance of such work; and assign to the Contracting Officer its interest  
23 in any contract for the performance of work or the supplying of equipment or  
24 material in connection with such work where requested by the Contracting  
25 Officer and agreed to by the other contracting party. Following the  
26 completion of this work, the facilities maybe retransferred to the Association  
27 for care, operation and maintenance.

1                                   ADMINISTRATION OF PROJECT LANDS

2           15. a. The lands and rights-of-way acquired in the name of the  
3 United States, and needed for the purpose of care, operation, and maintenance  
4 of project works may be used by the Association for such purposes. The  
5 Association, after consultation with the Contracting Officer, shall ensure  
6 that no unauthorized encroachment occurs on such lands and rights-of-way. The  
7 primary responsibility of identifying and preventing the encroachment of  
8 unauthorized use of rights-of-way or easements is the responsibility of the  
9 Association. This may include any legal actions necessary to prevent such  
10 encroachment or unauthorized use. The Contracting Officer hereby delegates to  
11 the Association the right to bring action in the Association's name in order  
12 to protect its interest and carry out its said responsibilities.

13           b. The Association shall not issue rights-of-way across lands  
14 acquired by the United States for the care, operation and maintenance of  
15 project works, issue land rights to such lands, or issue leases, licenses,  
16 permits, or special use agreements involving such lands, rights-of-way, or  
17 transferred works. All such land use instruments shall only be issued by the  
18 Contracting Officer, with the approval of the Association.

19                                   EXAMINATION AND INSPECTION OF TRANSFERRED WORKS FOR DETERMINING

20                                   ADEQUACY OF OPERATION, AND MAINTENANCE

21           16. a. The Contracting Officer may, from time to time, examine the  
22 Association's books, records and reports, and the transferred works being  
23 operated by the Association to assist in determining the condition of the  
24 transferred works, and the adequacy of the operation and maintenance programs  
25 and the water conservation program. The Contracting Officer may examine any or

1 all of the transferred works which were constructed by the United States, or  
2 transferred works which were constructed by the Association with funds  
3 advanced or reimbursed by the United States.

4           b. The Contracting Officer may, or the Association may request  
5 the Contracting Officer to, conduct special inspections of any transferred  
6 works being operated by the Association and special audits of the  
7 Association's books and records to ascertain the extent of any operation and  
8 maintenance deficiencies, to determine the remedial measures required for  
9 their correction, and to assist the Association in solving specific problems.  
10 Except in an emergency, a special inspection or audit shall be made only after  
11 written notice thereof has been delivered to the Association by the  
12 Contracting Officer.

13           c. The Association shall provide access to the transferred  
14 works, operate any mechanical or electrical equipment, and be available to  
15 assist in the examination, inspection or audit.

16           d. The Contracting Officer shall prepare reports based on the  
17 examination, inspections or audits, and furnish copies of such reports and any  
18 recommendations to the Association.

19           e. The Contracting Officer may provide the State an opportunity  
20 to observe and participate, at its own expense, in the examinations and  
21 inspections. The State may be provided copies of reports and any  
22 recommendations relating to such examinations and inspections.

23                           REIMBURSEMENT OF PRIOR COSTS

24           17. Upon execution of this contract, the Contracting Officer will  
25 reimburse the Association for expenses incurred by the Association over and  
26 above their normal thorough and timely O&M for the period October 30, 1984 to  
27 September 30, 1985. This amount is \$18,800, which is documented by detailed

1 records verifying the amount. Similar costs incurred from October 1, 1985 to  
2 the date of execution of this contract will be reimbursed as part of the 1986  
3 fiscal year costs as outlined in Article 4.b. herein.

4 CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS

5 18. The expenditure or advance of any money or the performance of any  
6 obligation of the United States under this contract shall be contingent upon  
7 appropriation or allotment of funds. No liability shall accrue to the United  
8 States in case funds are not appropriated or allocated.

9 EQUAL OPPORTUNITY

10  
11 19. During the performance of this contract, the Contractor agrees as  
12 follows:

13  
14 a. The Contractor will not discriminate against any employee or  
15 applicant for employment because of race, color, religion, sex, or national  
16 origin. The Contractor will take affirmative action to ensure that applicants  
17 are employed, and that employees are treated during employment, without regard  
18 to race, color, religion, sex, or national origin. Such action shall  
19 include, but not be limited to, the following: Employment, upgrading,  
20 demotion, or transfer; recruitment or recruitment advertising; layoff or  
21 termination; rates of pay or other forms of compensation; and selection for  
22 training, including apprenticeship. The Contractor agrees to post in  
23 conspicuous places, available to employees and applicants for employment,  
24 notices to be provided by the Contracting Officer setting forth the provisions  
25 of this nondiscrimination clause.

26  
27 b. The Contractor will, in all solicitations or  
28 advertisements for employees placed by or on behalf of the Contractor, state  
29 that all qualified applicants will receive consideration for employment  
30 without discrimination because of race, color, religion, sex, or national  
31 origin.

32  
33 c. The Contractor will send to each labor union or  
34 representative of workers with which it has a collective bargaining agreement  
35 or other contract or understanding, a notice, to be provided by the  
36 Contracting Officer, advising the said labor union or worker's representative  
37 of the Contractor's commitments under Section 202 of Executive Order 11246 of  
38 September 24, 1965, and shall post copies of the notice in conspicuous places  
39 available to employees and applicants for employment.

40  
41 d. The Contractor will comply with all provisions of Executive  
42 Order No. 11246 of September 24, 1965, as amended, and of the rules,  
43 regulations, and relevant orders of the Secretary of Labor.

1 e. The Contractor will furnish all information and reports  
2 required by said amended Executive Order and by the rules, regulations, and  
3 orders of the Secretary of Labor, or pursuant thereto, and will permit access  
4 to its books, records, and accounts by the Contracting Officer and the  
5 Secretary of Labor for purposes of investigation to ascertain compliance with  
6 such rules, regulations, and orders.

7  
8 f. In the event of the Contractor's noncompliance with the  
9 nondiscrimination clauses of this contract or with any of the such rules,  
10 regulations, or orders, this contract may be cancelled, terminated, or  
11 suspended, in whole or in part, and the Contractor may be declared ineligible  
12 for further Government contracts in accordance with procedures authorized in  
13 said amended Executive Order, and such other sanctions may be imposed and  
14 remedies invoked as provided in said Executive Order, or by rule, regulation,  
15 or order of the Secretary of Labor, or as otherwise provided by law.

16  
17 g. The Contractor will include the provisions of paragraphs a.  
18 through g. in every subcontract or purchase order unless exempted by the  
19 rules, regulations, or orders of the Secretary of Labor issued pursuant to  
20 Section 204 of said amended Executive Order, so that such provisions will be  
21 binding upon each subcontractor or vendor. The Contractor will take such  
22 action with respect to any subcontract or purchase order as may be directed by  
23 the Secretary of Labor as a means of enforcing such provisions, including  
24 sanctions for noncompliance: Provided, however, That in the event the  
25 Contractor becomes involved in, or is threatened with, litigation with a  
26 subcontractor or vendor as a result of such direction, the Contractor may  
27 request the United States to enter into such litigation to protect the  
28 interests of the United States.

29  
30 COMPLIANCE WITH CIVIL RIGHTS LAWS AND REGULATIONS

31  
32 20. a. The Contractor shall comply with Title VI of the Civil Rights  
33 Act of 1964 (42 U.S.C. 2000d), Section 504 of the Rehabilitation Act of 1975  
34 (P.L. 93-112, as amended), the Age Discrimination Act of 1975 (42 U.S.C. 6101,  
35 et seq.) and any other applicable civil rights laws, as well as with their  
36 respective implementing regulations and guidelines imposed by the U.S.  
37 Department of the Interior and/or Bureau of Reclamation.

38  
39 b. These statutes require that no person in the United States  
40 shall, on the grounds of race, color, national origin, handicap, or age, be  
41 excluded from participation in, be denied the benefits of, or be otherwise  
42 subjected to discrimination under any program or activity receiving financial  
43 assistance from the Bureau of Reclamation. By executing this contract, the  
44 Contractor agrees to immediately take any measures necessary to implement this  
45 obligation, including permitting officials of the United States to inspect  
46 premises, programs, and documents.

47  
48 c. The Contractor makes this agreement in consideration of and  
49 for the purpose of obtaining any and all Federal grants, loans, contracts,  
50 property discounts or other Federal financial assistance extended after the  
51 date hereof to the Contractor by the Bureau of Reclamation, including  
52 installment payments after such date on account of arrangements for Federal  
53 financial assistance which were approved before such date. The Contractor

1 recognizes and agrees that such Federal assistance will be extended in  
2 reliance on the representations and agreements made in this article, and that  
3 the United States reserve the right to seek judicial enforcement thereof.

#### 4 5 NOTICES

6  
7 21. Any notice, demand, or request authorized or required by this  
8 contract shall be deemed to have been given, on behalf of the Contractor, when  
9 mailed, postage prepaid, or delivered to the Regional Director, Upper Colorado  
10 Region, Bureau of Reclamation, P.O. Box 11568, Salt Lake City, Utah 84147,  
11 and on behalf of the United States, when mailed, postage prepaid, or delivered  
12 to the President, Grand Valley Water Users Association, 500 South Tenth  
13 Street, Grand Junction, Colorado 81501. The designation of the addressee or  
14 the address may be changed by notice given in the same manner as provided in  
15 this article for other notices.

#### 16 17 DETERMINATIONS

18  
19 22. Where the terms of this contract provide for action to be based  
20 upon the opinion or determination of either party to this contract, whether or  
21 not stated to be conclusive, said terms shall not be construed as permitting  
22 such action to be predicated upon arbitrary, capricious, or unreasonable  
23 opinions or determinations. In the event the Contractor questions any factual  
24 determination made by the Contracting Officer, the findings as to the facts  
25 shall be made by the Secretary only after consultation with the Contractor and  
26 shall be conclusive upon the parties.

#### 27 28 WATER AND AIR POLLUTION CONTROL

29  
30 23. The Contractor in carrying out this contract, shall comply with  
31 all applicable water and air pollution laws and regulations of the United  
32 States and the State of Colorado, and shall obtain all required permits or  
33 licenses from the appropriate Federal, State, or local authorities.

#### 34 35 ASSIGNMENT LIMITED--SUCCESSORS AND ASSIGNS OBLIGATED

36  
37 24. The provisions of this contract shall apply to and bind the  
38 successors and assigns of the parties hereto, but assignment or transfer of  
39 this contract or any right or interest therein shall not be valid until  
40 approved in writing by the Contracting Officer.

#### 41 42 OFFICIALS NOT TO BENEFIT

43  
44 25. No Member of or Delegate to Congress, Resident Commissioner or  
45 official of the Association shall benefit from this contract other than as a  
46 water user or landowner in the same manner as other water users or landowners.

#### 47 48 RULES, REGULATIONS, AND DETERMINATIONS

49  
50 26. a. The parties agree that the delivery of water or the use of  
51 Federal facilities pursuant to this contract is subject to Reclamation law, as  
52 amended and supplemented, and the rules and regulations promulgated by the  
53 Secretary of Interior under Reclamation law.

1           b. The Contracting Officer shall have the right to make  
2 determinations necessary to administer this contract that are consistent with  
3 the expressed and implied provisions of this contract, the laws of the United  
4 States and the State, and rules and regulations promulgated by the Secretary  
5 of the Interior. Such determinations shall be made in consultation with the  
6 Contractor.

#### 7 8                                   BOOKS, RECORDS AND REPORTS 9

10           27. The Contractor shall establish and maintain accounts and other  
11 books and records pertaining to administration of the terms and conditions of  
12 this contract, including: the Contractor's financial transactions, water  
13 supply data, project operation, maintenance and replacement logs, and project  
14 land and right-of-way use agreements; the water user's land-use, crop census,  
15 landownership, land-leasing and water-use data; and other matters that the  
16 Contracting Officer may require. Reports thereon shall be furnished to the  
17 Contracting Officer in such form and on such date or dates as the Contracting  
18 Officer may require. Subject to applicable Federal laws and regulations, each  
19 party to this contract shall have the right during office hours to examine and  
20 make copies of the other party's books and records relating to matters covered  
21 by this contract.

#### 22 23                                   CHANGES IN CONTRACTOR'S ORGANIZATION 24

25           28. While this contract is in effect, no change may be made in the  
26 Contractor's organization, by inclusion or exclusion of lands, dissolution,  
27 consolidation, merger or otherwise, except upon the Contracting Officer's  
28 written consent.

#### 29 30                                   CONTRACTS WITH THIRD PARTIES 31


32           29. a. The Contractor shall advertise each construction, equipment  
33 or supply contract exceeding \$25,000 for competitive bidding. Upon receipt of  
34 bids, any action proposed by the Contractor other than making the award to the  
35 lowest responsible bidder shall be subject to review by the Contracting  
36 Officer.

37  
38           b. For all construction contracts exceeding \$25,000, the  
39 Contractor shall require construction contracts to furnish performance bonds  
40 equal to 100 percent of the contract price and payment bonds equal to  
41 (1) 50 percent of the contract price for contracts not exceeding \$1,000,000,  
42 (2) 40 percent of the contract price for contracts exceeding \$1,000,000 but  
43 not exceeding \$5,000,000, and (3) \$2,500,000 for contracts exceeding  
44 \$5,000,000. Supply and equipment contractors may be required to furnish  
45 performance bonds on supply or equipment contracts exceeding \$25,000 when the  
46 contract calls for substantial progress payments before delivery of end items.

- 1 c. The United States shall not be a party to or obligated in any  
2 manner by contracts entered into between the Contractor and other parties  
3 pursuant to this contract.

UNITED STATES OF AMERICA

By

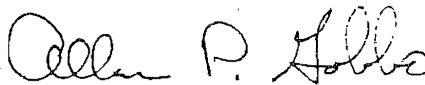
  
Regional Director  
Upper Colorado Region  
Bureau of Reclamation

W. R. McKee



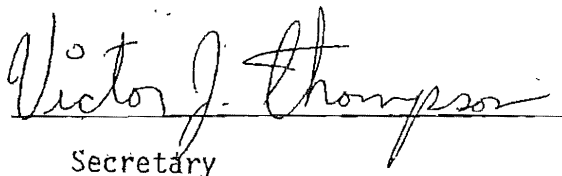
GRAND VALLEY WATER USERS ASSOCIATION

By



Title President, Board of Directors

SEAL  
ATTEST:

  
Secretary



**// Contract No. 0-07-40-P0180**

**For the Operation and Maintenance of the  
Grand Valley Powerplant**

Contract No. 0-07-40-P0180  
Amendment No. 1

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION  
GRAND VALLEY PROJECT  
  
AMENDMENT  
TO CONTRACT NO. 0-07-40-P0180  
LEASE OF POWER PRIVILEGE  
AMONG  
THE UNITED STATES OF AMERICA,  
GRAND VALLEY WATER USERS ASSOCIATION  
AND  
ORCHARD MESA IRRIGATION DISTRICT  
FOR  
THE OPERATION AND MAINTENANCE  
OF THE  
GRAND VALLEY POWERPLANT

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AMENDMENT  
TO CONTRACT NO. 0-07-40-P0180  
LEASE OF POWER PRIVILEGE  
AMONG  
BUREAU OF RECLAMATION,  
GRAND VALLEY WATER USERS ASSOCIATION  
AND  
ORCHARD MESA IRRIGATION DISTRICT FOR  
THE OPERATION AND MAINTENANCE OF THE  
GRAND VALLEY POWERPLANT

THIS Amendment to Contract No. 0-07-40-P0180 is made this 17 day of February, 2011 (the "Effective Date"), pursuant to the Act of June 17, 1902 (32 Stat. 388) and acts amendatory thereof or supplementary thereto, and particularly the Act of August 4, 1939 (53 Stat. 1189) as amended, among the BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, hereinafter referred to as the "United States"; the GRAND VALLEY WATER USERS ASSOCIATION, a corporation organized and existing under laws of the State of Colorado, having its principal place of business at Grand Junction, Colorado, hereinafter referred to as the "Association"; and ORCHARD MESA IRRIGATION DISTRICT, an irrigation district organized and existing under the laws of the State of Colorado, having its principal place of business at Palisade, Colorado, hereinafter referred to as the "District."

PREAMBLE

1. The United States has constructed the Grand Valley Irrigation Project, a Federal Reclamation Project, in Mesa County, Colorado, hereinafter called the Project.
2. The United States, the Association and Public Service Company of Colorado (Company or Xcel Energy) entered into a contract dated June 19, 1931, providing, among other things, for the construction, operation and maintenance, without expenditure of funds by the United States, of a powerplant known as the Grand Valley Powerplant (as defined herein), and appurtenant facilities upon the Project, and which contract, as extended by the interim contract of July 2, 1959, expired on December 30, 1960. Subsequently, the United States, the Association and the Company entered into a similar contract dated December 30, 1960, and said contract was twice extended and modified by including the District as a participant. Said contract expired on December 31, 1990.
3. The United States entered into a Contract for the Lease of Power Privilege with the Company, the Association and the District on December 12, 1990 (Contract), pursuant to the

Act of June 17, 1902 (32 Stat. 388) and acts amendatory thereof or supplementary thereto; and particularly the Act of August 4, 1939 (53 Stat. 1189).

4. On September 4, 1996, a Stipulation and Agreement in Case No. 91CW247, District Court, Water Division No. 5 (State of Colorado), incorporated into the Orchard Mesa Check Case Decree (as defined herein), was entered into between the United States, the Association, the District, and various other entities relating to the operation of the Orchard Mesa Check (as defined herein).

5. Due to the impending closure of the Cameo Generating Station on December 31, 2010, pursuant to Article 38 of the Contract, the Company assigned its rights and responsibilities under the Lease of Power Privilege Contract No. 0-07-40-P0180 to the Association and the District on December 30, 2010, and the United States approved such assignment.

6. The interests of the parties to this Amendment will be best served by the Association and the District providing for the operation and maintenance, including replacements, of the Grand Valley Powerplant and Private Equipment (as defined herein) in accordance with the terms and conditions hereof, without expenditure of funds by the United States.

7. The Association and the District have contracted to operate and maintain and to carry water in Project facilities to the Grand Valley Powerplant for the purposes of generating hydroelectric power at no expense to the United States in accordance with provisions of Contract No. 14-06-400-326, as amended.

8. The Grand Valley Powerplant is a part of the works of the Project and title to all the Project works, including the Grand Valley Powerplant, stands in the name of the United States, except the Private Equipment.

9. The Association and the District have purchased the Private Equipment at the Grand Valley Powerplant from the Company.

10. The Contract must be amended to define the responsibilities of the United States, the Association, and the District, following the Company's assignment of its responsibilities under the Contract.

NOW, THEREFORE, in consideration of the mutual and dependent stipulations and covenants herein contained, the parties to this Amendment agree as follows:

#### CONTRACT SUPERSEDED

1. This Amendment shall amend and supersede the Contract in its entirety.

## DEFINITIONS

2. For the purpose of this Amendment, the following definitions shall apply:

(a) "Association's Irrigation Right" means the water right described in Article 2.(l)2. herein.

(b) "District's Irrigation Right" means the water rights described in Article 2.(l)1. herein.

(c) "Grand Valley Powerplant" means the Grand Valley Powerplant and the appurtenant facilities and land on which they sit, which shall include the powerhouse, machinery, equipment, penstocks, intake structure, trash racks, ice sluiceway, headgates, draft tubes and discharge apron, and all other structures and other property useful in the full and efficient operation of said Powerplant, including the land containing the Private Equipment described hereunder adjacent to said Powerplant; but shall not include the Related Facilities, as defined in Article 2.(n) herein, or the Private Equipment, as defined in Article 2.(k) herein. The Grand Valley Powerplant shares an afterbay with the Pumping Plant.

(d) "Grand Valley Project" or "Project" shall mean the Grand Valley Irrigation Project, a Federal Reclamation Project, in Mesa County, Colorado, consisting of the Garfield Gravity Division and the Orchard Mesa Division. Both the Garfield Gravity Division and the Orchard Mesa Division divert water from the Colorado River at the Project's diversion dam on the Colorado River. The irrigation water for the Garfield Gravity Division is then conveyed through the Government Highline Canal and delivered by gravity to other laterals within the Grand Valley Project pursuant to contract with the Association. The irrigation water for the Orchard Mesa Division is conveyed through the Government Highline Canal and the Orchard Mesa Power Canal to the Pumping Plant, where it is pumped for distribution to the lands of the District (see Exhibit A).

(e) "Interconnection Agreement" means the Small Generator Interconnection Agreement between Public Service Company of Colorado, d/b/a Xcel Energy, and the Association and the District dated February 15, 2011, relating to the Grand Valley Powerplant, and any future amendments and extensions thereto or replacements thereof.

(f) "Orchard Mesa Check" or "Check" means the Orchard Mesa Check, consisting of three water level control gates and the bypass channel by which the water level in the common afterbay of the Grand Valley Powerplant and the District's pumping plant, known as the Pumping Plant (as defined herein), can be raised to a level which causes water to flow through the bypass channel and return to the Colorado River immediately upstream of the Grand Valley

Irrigation Company (GVIC) diversion dam, and shall include any replacement structure in the same location which performs the same function.

(g) "Orchard Mesa Check Case Decree" means the Findings of Fact, Conclusions of Law, Judgment and Decree entered on October 1, 1996, in Case No. 91CW247, District Court, Water Division 5, State of Colorado, including without limitation the Stipulation and Agreement attached thereto as Attachment 1 and incorporated therein by reference.

(h) "Ordinary Operation and Maintenance" means the ongoing actions, work and other activities necessary to operate the Grand Valley Powerplant and the Related Facilities to produce hydroelectric power and to maintain them in good and efficient operating condition. Ordinary Operation and Maintenance includes all maintenance other than Replacement Maintenance, as defined in Article 2.(o) herein.

(i) "Power Purchase Agreement" means the Energy Purchase Agreement between Public Service Company of Colorado and the Association and the District dated February 11, 2011, relating to the Grand Valley Powerplant and any future amendments and extensions thereto or replacements thereof.

(j) "Power Right" means the water right described in Article 2.(l)3. herein.

(k) "Private Equipment" means all equipment provided by the Association and the District for the control, transformation, distribution and metering of power from the Grand Valley Powerplant. A list of the Private Equipment that exists as of the Effective Date is attached hereto as Exhibit B.

(l) "Project Water Rights" means:

(1) The right of the District to divert up to 460.2 cubic feet per second (cfs) of water through the headgate of the Government Highline Canal under priority dates of October 1, 1900, and October 25, 1907, for irrigation purposes and for operation of the Pumping Plant;

(2) The right of the Association to divert up to 730 cfs of water through the headgate of the Government Highline Canal under priority date of February 27, 1908, for irrigation purposes; and

(3) The right of the United States to divert up to 400 cfs of water through the headgate of the Government Highline Canal under the originally-decreed priority date of February 27, 1908, for power generating purposes during the irrigation season and up to 800 cfs of water during the non-irrigation season. The priority date for this water right will be as stipulated in the Orchard Mesa Check Case Decree.

- (4) Any water from other sources that may from time to time be available for power generation.
- (m) "Pumping Plant" means the hydro pumping facility of the District used to lift water to the canals serving the lands within the District, which Pumping Plant shares an afterbay with the Grand Valley Powerplant.
- (n) "Related Facilities" means the facilities used to divert and transport water to the Grand Valley Powerplant and to return such water to the Colorado River after power has been produced. Related Facilities include, without limitation, the Grand Valley Project Diversion Dam and appurtenant works, the Government Highline Canal from the Diversion Dam to a point near Tunnel No. 3, the Colorado River Siphon, the District's Power Canal, the forebay to the Grand Valley Powerplant and the common afterbay of the Grand Valley Powerplant and the Pumping Plant.
- (o) "Replacement Maintenance" means replacement of major Grand Valley Powerplant components, including, but not limited to, turbines, generators, penstocks and governors, and replacement of or major improvements to the Related Facilities, because of an exhausted physical condition or obsolescence which requires the purchase of new major components or improvements to existing components.

#### LEASE OF POWER PRIVILEGE

3. Subject to the conditions and terms herein, the United States leases to the Association and the District, with the right of ingress and egress, the exclusive right to utilize the Grand Valley Powerplant to produce and sell hydroelectric power and for the purposes of performing the provisions of this Amendment.

#### TERM OF CONTRACT

4. This Amendment shall become effective on the Effective Date and shall remain in force until January 1, 2031, unless terminated by mutual consent among the parties to this Amendment or by default or cancellation under provisions of this Amendment.

#### UNITED STATES EXPENSES

5. (a) When required by the United States, the Association and the District shall advance funds in minimum increments of \$10,000 (Incremental Advance) to the United States to pay major future expenses which may be incurred by the United States under this Amendment. Funds advanced will be paid by the Association and the District in the same proportion as outlined in Article 6 herein. Expenses shall include an hourly rate, travel, materials, mailing, copying costs, and administration overhead costs at the then current rate, as incurred by the United States personnel, contractors or consultants; provided, however, that no charge shall be assessed for information,



services, or relationships that would normally be provided by the United States to the public at no charge. United States expenses under this Amendment may include, but are not limited to, the following:

- (1) Environmental compliance.
- (2) Inspections of the Grand Valley Powerplant called for by the United States, either routine or based upon a unique problem, major rehabilitation, or a reasonable concern for the integrity of a Federal structure or operation of other Grand Valley Powerplant features.
- (3) Preparation or review of technical studies.
- (4) Review of designs, specifications, legal and other documents.
- (5) Site visits and participation in meetings.
- (6) Copies of reports, drawings, and similar data.
- (7) Consultation, observation, review, and comment on tests of piping, valving, automated equipment, supervisory control systems, and any and all other aspects of construction, operation, maintenance and replacement that might impact the integrity of a Federal structure or environmental commitments.
- (8) Work necessitated by non-performance of the Association and the District.
- (9) The expenses incurred in the event of failure of Federal structures resulting from operations and/or maintenance of the Grand Valley Powerplant.
- (10) All administrative costs incurred in the execution of the above-listed activities.

(b) The United States will establish a non-interest bearing account for the funds advanced by the Association and the District; an initial advance of \$10,000 will be required upon execution of this Amendment. At such time when funds in the account are anticipated to be reduced to or below \$5,000, the United States will request an Incremental Advance of funds as provided in Article 5.(a) herein. The United States will not pay or credit the Association and the District for any interest. When performing work identified in Article 5.(a) herein, the United States will furnish the Association and the District, not less than on a quarterly basis prior to completion of the activity, an accounting of activity, an itemization of all expenses incurred under Article 5 herein, and a reconciliation of such expenses billed with the amounts requested under Article 5 herein. After completion of the activity an accounting of expenses will be furnished to the Association and the District on an annual basis or upon request of further Incremental Advances.

(c) Each request for an Incremental Advance of funds under Article 5 herein shall be in writing and shall include a statement describing the anticipated use of the requested funds. The United States will discuss with the Association and the District in advance of requesting funds to identify anticipated activities related to the Grand Valley Powerplant. The Association and the District shall advance the requested funds within 30 days after receiving the request.

(d) Following the expiration, cancellation or termination of this Amendment, the United States will determine its expenses associated with the Grand Valley Powerplant and submit a final accounting report to the Association and the District

within sixty days after the date of expiration, cancellation or termination. The United States will refund to the Association and the District any surplus in the account within 60 days after submitting the final accounting report. The Association and the District shall pay any deficit in the account within 60 days after receipt of the final accounting report.

#### LEASE PAYMENTS TO THE UNITED STATES

6. (a) Annual lease payments shall be made to the United States for the use of the Grand Valley Powerplant. Annual lease payments shall be determined by multiplying the total number of kilowatt hours of generation in a calendar year by the mill levy assessment. Total kilowatt hours of generation shall be based upon the meter reading as referenced in Article 15 herein. The initial mill levy assessment shall be 3 mills. Annually, the mill levy assessment shall be increased by 3 percent. The Association and the District shall each pay their proportional share of the total annual lease payment to the United States as follows:

Association: Fifty Percent (50%)

District: Fifty Percent (50%)

(b) Each payment shall be made on or before April 1 in each year for the total generation during the prior calendar year as reported in Article 10 herein. The United States will send an invoice for lease payments to the Association and the District at least 30 days prior to their due date. Invoices will be mailed to the Association and the District as specified in Article 26 herein.

(c) Lease Payments to the United States shall reference this Amendment by title and number. The Bureau of Reclamation will provide a billing document to the Association and to the District. Payment will be made payable to the "Bureau of Reclamation," and payment instructions will be followed as stated in the billing document, unless directed otherwise by the United States.

(d) The obligation for payments by the Association and the District in Article 6.(a) herein is separate and default in payment by one entity shall not be deemed a default by the other entity nor shall the other entity be obligated to assume the burden of the defaulting entity.

#### OPERATIONS AND MAINTENANCE PLAN

7. (a) On or before June 1, 2011, the Association and the District shall prepare and submit to the United States for its review and concurrence an operations and maintenance plan (Operations and Maintenance Plan) for the Grand Valley Powerplant. The Operations and Maintenance Plan will contain as a minimum the following:

(1) Operating procedures for major equipment.

- (2) Procedures for meeting emergencies.
- (3) Description and schedule for all anticipated Replacement Maintenance of items greater than \$50,000.
- (4) Description and schedule for all anticipated improvements to the Grand Valley Powerplant and to the Related Facilities.

(b) Annually, by June 1 of each year, the Association and the District shall review and, if necessary, update the Operations and Maintenance Plan to reflect changes to operating procedures, changed emergency procedures, new Replacement Maintenance schedules and new schedules for improvements to the Grand Valley Powerplant and the Related Facilities and shall submit the updated Operations and Maintenance Plan to the United States for review and concurrence.

(c) The United States shall concur with the Operations and Maintenance Plan and any updates thereto so long as:

- (1) The concurrence and the performance or effectuation of such submission will not have a material adverse impact on the Project; and
- (2) Required NEPA (National Environmental Policy Act) compliance for implementation of the proposed activity and associated concurrence has been completed; and
- (3) Such proposed activity otherwise complies with Federal law, applicable standards, contracts, and this Amendment.

In the event the United States determines that any submission or any portion thereof does not satisfy the foregoing criteria, the United States shall provide the Association and the District with a written notice describing such defect in reasonable detail. The United States may concur with any submission in whole or in part and may reject any portion of a submission without rejecting the whole.

(d) The United States' reviews and concurrences are to ensure, to the extent that the Grand Valley Powerplant is an integral part of the Project, that its operation, maintenance and replacement will not adversely affect the structural or operational soundness, or jeopardize the safety or operational requirements of the Project, and that those properties to which the United States retains title are adequately maintained and protected.

#### ENVIRONMENTAL COMPLIANCE

8. (a) National Environmental Policy Act (NEPA) compliance has been completed by the United States for this Amendment.

(b) The Association and the District, in their Ordinary Operation and Maintenance and Replacement Maintenance of the Grand Valley Powerplant, shall comply with Federal and State environmental laws and regulations including, but not limited to, the storage and disposal of hazardous waste.

## POWERPLANT OPERATION, MAINTENANCE AND REPLACEMENT

9. (a) The Association and the District, on the Effective Date of this Amendment, shall assume the operation and maintenance of the Grand Valley Powerplant and will operate and maintain said Powerplant for the term of this Amendment, performing all Ordinary Operation and Maintenance and Replacement Maintenance at their own expense, in accordance with accepted operation practices, procedures and standards of the industry, and in such a manner that the Grand Valley Powerplant will be returned at the expiration, cancellation or termination of this Amendment in as good a condition as when the Association and the District assumed operation and maintenance under this Amendment, reasonable wear excepted.
- (b) The Association and the District shall not operate or make any modifications to the Grand Valley Powerplant which could adversely affect the structural or operational soundness, jeopardize the safety, or adversely affect the operation of the Project.
- (c) Representatives of the parties to this Amendment shall make a scheduled inspection of the Grand Valley Powerplant and Private Equipment at least once a year, and shall confer at least once each calendar year to review the Association and the District's past operation and maintenance of the Grand Valley Powerplant and Private Equipment and establish maintenance and replacement schedules for the ensuing calendar year.
- (d) The United States acknowledges that the Association and the District have entered into the Power Purchase Agreement, relating to the sale of energy produced by the Grand Valley Powerplant, and the Interconnection Agreement, relating to the interconnection of the Grand Valley Powerplant to the electric system of Public Service Company of Colorado, d/b/a Xcel Energy, and that the Association and the District have obligations to operate and maintain the Grand Valley Powerplant in accordance with the provisions of those agreements. All costs incurred by the Association and the District to comply with the provisions of this Amendment, the Power Purchase Agreement and the Interconnection Agreement shall be considered, for purposes of this Amendment, to be part of the costs of Ordinary Operation and Maintenance of the Grand Valley Powerplant.

## REPORTS AND INSPECTIONS

10. (a) The Association and the District shall keep records, on a monthly basis, of the power generation in kilowatt hours at the Grand Valley Powerplant. On or before February 1 in each year beginning in 2012, the Association and the District shall furnish to the United States a report showing the monthly power generation in kilowatt hours at the Grand Valley Powerplant for the prior calendar year.

(b) The Association and the District agree that authorized agents of the United States shall have access to the Grand Valley Powerplant and Private Equipment at all reasonable times for the purpose of inspection, and further agree to permit such agents access to the operation, maintenance and replacement records of said Powerplant and Private Equipment.

#### PRIVATE EQUIPMENT

11. (a) The Association and the District shall provide, at their own expense, the Private Equipment needed for the control, distribution and sale of power from the Grand Valley Powerplant.

(b) The Association and the District, at their own expense, shall operate, maintain and replace the Private Equipment, keeping it in operable condition during times that the Grand Valley Powerplant is in operation.

#### DELIVERY OF WATER FOR POWER

12. Subject to the provisions of Article 13 herein, all water available to the Association and District in excess of that decreed for Project irrigation and pumping purposes, the Power Right and any other water that may be available to the Association and the District for power purposes, within the restrictions of the carrying capacity of the Project canals, shall be delivered by the Association and the District to the Grand Valley Powerplant. The Association and the District shall utilize such water up to the full capacity of the Grand Valley Powerplant, subject to the provisions of this Amendment. Nothing in this Amendment shall obligate the Association or the District to make water diverted or available under the Association's Irrigation Right or the District's Irrigation Right available for the production of power, and in times of shortage, the Association's Irrigation Right and the District's Irrigation Right shall always have priority for diversion and use over the Power Right or any other water available for production of power.

#### ADMINISTRATION OF PROJECT WATER RIGHTS

13. The Project Water Rights shall be administered in accordance with the following:

(a) The parties to this Amendment acknowledge that the GVIC has the right to divert 520.81 cfs of water for irrigation purposes under priority date of August 22, 1882, through the headgate of the GVIC Canal, which water right is senior to all of the Project Water Rights. The parties to this Amendment further acknowledge that GVIC has the right to divert 119.47 cfs of water for irrigation purposes under adjudication date of July 25, 1941, and appropriation date of April 26, 1914, through the headgate of the GVIC Canal. By use of the Check, some or all of the water needed to satisfy GVIC's water rights described above can be diverted by exchange through the Orchard Mesa power canal and utilized for power generation or pumping purposes and returned to the Colorado River upstream of the GVIC Diversion Dam for use by

GVIC, subject to the provisions, terms and conditions of the Orchard Mesa Check Case Decree.

(b) The parties to this Amendment acknowledge that the Association has certain contractual obligations to transport 23.5 cfs of irrigation water for the Palisade Irrigation District, which obligations are subject to that amount of water being available in priority from water flowing in the Colorado River and space being available for transportation of that water right in the Government Highline Canal, the most limiting structure in said canal being Tunnel No. 3.

(c) The obligation to carry more than 400 cfs of the District's Irrigation Right is subordinate to the obligation to carry the 23.5 cfs of irrigation water for the Palisade Irrigation District.

(d) The parties to this Amendment also acknowledge that the United States and Association are obligated by contract to transport 80 cfs of irrigation water for the Palisade Irrigation District and 40 cfs of irrigation water for the Mesa County Irrigation District and that the obligation to transport such water takes precedence over transportation of the Project Water Rights in the Government Highline Canal.

(e) Pursuant to and subject to the provisions, terms and conditions of the Orchard Mesa Check Case Decree, water can be diverted by exchange at the diversion dam of the Project, transported through the Government Highline Canal and returned to the Colorado River by the operation of the Check. Such water can be utilized to furnish water for generation of power at the Grand Valley Powerplant and for operation of the District's Pumping Plant. The parties to this Amendment agree to operate the Check in a manner consistent with the Orchard Mesa Check Case Decree.

(f) At such times as the supply of water in the Colorado River is insufficient to fill the Project Water Rights, or at such time as the capacity of the Government Highline Canal is insufficient to carry the 80 cfs of irrigation water for the Palisade Irrigation District and the 40 cfs for the Mesa County Irrigation District and all of the Project Water Rights, the Power Right will be first reduced before any reduction is made to the Association's Irrigation Right and to the District's Irrigation Right.

(g) The District agrees that it will make no claim against the Association or the United States for the expenses incurred by the District resulting from implementation of the Check for the purposes specified in Article 13.(e) herein. Notwithstanding the provisions of Article 13.(e), this Amendment shall never be construed to obligate the District to utilize the Check to satisfy the priorities of any third party which are junior to and subordinate to the Project Water Rights.

(h) Nothing in this Amendment is meant to conflict with the Orchard Mesa Check Case Decree and, if inconsistencies exist, the provisions of the Orchard Mesa Check Case Decree shall prevail.

### INTERRUPTIONS IN DELIVERY OF WATER

14. (a) The water to be made available to the Grand Valley Powerplant shall be continuous as far as due diligence will permit, with no liability for damages incurred when by reason of uncontrollable forces, suspension of the diversion of water to the canal system or any part thereof interferes with delivery of water at the Grand Valley Powerplant. The term "uncontrollable forces," for purposes of this Amendment, means any cause beyond the control of the parties to this Amendment affected, including, but not limited to failure of facilities, flood, earthquake, storm, lightning, inclemencies of the season, fire, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority which, by exercise of due diligence and foresight, such parties to this Amendment could not reasonably be expected to avoid. Inability to fulfill any obligation of this Amendment caused by uncontrollable forces shall be removed with all reasonable dispatch.
- (b) The Association, the District and the United States, whichever is operating the Project, shall have the right to cease delivery of water to the Grand Valley Powerplant temporarily whenever it shall become necessary to make repairs, replacements or additions to the Related Facilities with no liability for damages and shall give reasonable notice to each party to this Amendment of such temporary suspension of service. All such repairs, replacements and additions will be made with best efforts and diligence so that water will be available at the Grand Valley Powerplant without undue delay.

### MEASUREMENT OF ENERGY

15. As part of the Company's assignment of interests and responsibilities to the Association and the District, new meters to measure energy production have been installed. These meters are the property of Xcel Energy and will be operated and maintained by Xcel Energy, as provided for in the Interconnection Agreement.

### FAILURE TO MAKE PAYMENTS

16. Upon failure of the Association and the District to pay any sum of money when due, as provided in this Amendment, that amount due shall bear interest at a rate which is four percent (4%) per annum over the Federal Reserve Bank discount rate in effect on the due date until paid in full.

### DEFAULT; REMEDIES; CANCELLATION

17. (a) Each or any of the following events shall constitute default under this Amendment.
- (1) Failure of any party to this Amendment to comply with each and every material condition of this Amendment;
  - (2) Abandonment of the Grand Valley Powerplant by the Association and the District;

- (3) Abandonment of all or part of that portion of the Grand Valley Irrigation Project essential to the operation of the Grand Valley Powerplant, by the United States and/or the Association and the District; or
- (4) Failure or refusal to pay when due any sum required by this Amendment.

(b) Any party to this Amendment not in default may give written notice to the defaulting party, as defined Article 17.(a)(1) through (4) herein, and the defaulting party shall then be entitled to correct the default condition specified in the notice as follows: If the default is for failure to pay money, the money plus interest must be paid within 60 days to correct the default. If the money plus interest is not paid within 60 days, then the defaulting party shall be subject to the provisions of Article 17.(f) herein. If the default is for something other than for failure to pay money, the defaulting party shall have a reasonable time to correct the default if the action necessary to correct the default is commenced within thirty (30) days after the notice and if full correction of the default is diligently pursued to conclusion. If the action is not commenced within the 30 days, or if the action is timely commenced but not diligently pursued to full correction of the default, then the defaulting party shall be subject to the provisions of Article 17.(f) herein.

(c) Failure on the part of the part of the Association and the District to operate the Grand Valley Powerplant without just cause or to maintain the Grand Valley Powerplant in good condition and repair shall be considered to be abandonment of the Grand Valley Powerplant.

(d) The United States reserves the right to cancel all or any part of this Amendment in the event of failure by the Association and the District to comply with any written directive or instruction of the United States pertaining to any requirement under this Amendment, actual or threatened material impairment of the Project caused by the operation of the Grand Valley Powerplant, failure to maintain insurance, failure to make payments to the United States, or any other default by the Association and the District, after notice and failure to timely correct the condition as provided in Article 17.(b) herein.

(e) Any prevention, delay, nonperformance, or stoppage due to an act of nature or inability to obtain labor or materials or reasonable substitutes for either shall excuse nonperformance for a period equal to any such prevention, delay, nonperformance, or stoppage, except obligations for the payment of monies due under this Amendment.

(f) Each party to this Amendment may use any remedy available either at law or in equity against a party in default hereof. The waiver of a default or a provision of this Amendment shall not be deemed to be a waiver of any other provision or of a subsequent default of the same provision.

(g) If by reason of an act of default on the part of either the Association or the District, the United States has the right to and elects to cancel this Amendment with respect to the defaulting party pursuant to the provisions of Article 17 herein, then the



non-defaulting party shall have the right and option to assume without charge the obligations and rights of the defaulting party under this Amendment. If the non-defaulting party elects to assume the position of the defaulting party to operate the Grand Valley Powerplant, then effective the date this Amendment is cancelled and terminated with respect to the defaulting party the other party shall assume and agree to perform all of the provisions of this Amendment which accrue or are to be performed subsequent to the date of cancellation and, at that time, it shall assume and agree to perform all provisions of this Amendment otherwise required to be performed by both the Association and the District, including, but not limited to, the obligation to pay the United States all payments which subsequently accrue pursuant to Articles 5 and 6 herein.

### INSURANCE

18. (a) The Association and the District shall maintain workmen's compensation insurance on their own employees as may be necessary to comply with current applicable law.
- (b) The Association and the District shall, at their sole cost and expense, keep or cause the Grand Valley Powerplant to be kept insured for the mutual benefit of the United States, the Association and the District, against loss or damage by fire, flood, and such other risks as are now or hereafter included in an extended coverage endorsement in common use for hydroelectric powerplants. Insurance proceeds shall be used by the Association and the District to replace or repair the compensated loss, subject to review and concurrence by the United States.
- (c) Throughout the term of this Amendment, the Association and the District shall, at their sole cost and expense, keep or cause to be kept in force, for the benefit of the United States, the Association and the District, comprehensive broad form general public liability insurance in the amount of at least \$2,000,000 against claims and liability for personal injury, death, or property damage arising from the use, occupancy, disuse, or conditions of the Grand Valley Powerplant and, adjoining areas or ways, providing coverage for bodily injury or death to any person or persons for each accident or occurrence; and for property damage for each accident or occurrence.
- (d) The amount of insurance coverage shall be adjusted annually by the insurance company based upon accepted standard adjustment practices.
- (e) For each policy or certificate evidencing insurance, the Association and the District shall instruct the insurance company to notify the United States not less than 30 days prior to the effective date of any cancellation, termination, or assignment of the policy or certificate or any modification of the policy or certificate. The notice shall be sent to the United States and shall identify the Amendment, the policy and the insured.

(f) The Association and the District agree to maintain insurance coverage as stated in Article 18 herein throughout the term of this Amendment in substantially the same form and amounts as are provided for in the attached certificates of insurance identified as and made a part thereof.

(g) Any insurance proceeds remaining after complying with the provisions of this Amendment shall be the Association and the District's sole property.

#### INDEMNITY

19. (a) The Association agrees to indemnify the United States for any injury, loss or damage incurred by the United States resulting from the failure of the Association to properly operate and maintain the Association's facilities associated with delivery of water to the Grand Valley Powerplant.

(b) The District agrees to indemnify the United States for any injury, loss or damage incurred by the United States resulting from the failure of the District to properly operate and maintain the District's facilities associated with delivery of water to the Grand Valley Powerplant.

(c) Notwithstanding Articles 19.(a) and (b) herein, no party to this Amendment shall be liable to any other party for any injury, loss or damage to the extent that such is caused by the negligence of another party or parties other than the Association, the District or the United States, including their officers, agents, contractors or employees.

(d) The United States shall in no way be liable for the operations of the Association or the District under this Amendment.

(e) The United States shall not be liable for any review, inspection, or concurrence which it may perform or fail to perform under the terms of this Amendment.

(f) Each party to this Amendment will be responsible for acts or omissions of its contractors.

(g) Nothing in this Amendment shall be construed as releasing the United States from liability for its own negligence; *Provided*, That nothing herein shall be deemed to increase the liability of the United States beyond the provisions of the Federal Tort Claims Act, Act of June 25, 1948, 62 Stat. 982 (28 U.S.C. § 1346(b), 2671 *et seq.*) or other applicable law.

#### TERMINATION

20. This Amendment may be terminated 1) by mutual consent of the parties to the Amendment; or 2) in the event that the amount of Power Revenues (as defined in Article 22 herein) is insufficient for the Association and the District to satisfy their respective obligations under this Amendment. Prior to terminating this Amendment

because of insufficient Power Revenues, the parties shall meet and discuss, in good faith, mutually acceptable alternatives to address the insufficient revenues and maintain this Amendment in full force and effect. If the parties are not able to mutually agree on such alternatives, either the United States or the Association and the District may then terminate this Amendment on ninety (90) days' notice to the other party or parties. Upon termination of this Amendment under this Article, operation of the Grand Valley Powerplant shall revert to the title holder, the United States. The United States will assume operation and maintenance of the Grand Valley Powerplant, initiate the lease of power privilege process, or cease operations of the Grand Valley Powerplant.

#### DUTY TO SURRENDER

21. (a) If, after expiration of the term of this Amendment, cancellation of this Amendment due to default by the Association and the District or other termination of this Amendment the United States elects to retain the Grand Valley Powerplant for its own use or lease to someone or some entity other than the Association and the District, the Private Equipment may be purchased by the United States for book value of the Private Equipment which is defined as original cost less accumulated depreciation. Said option shall be exercised by payment of the book value by the United States to the Association and the District on or before the date of expiration, cancellation or termination. The book value of the Private Equipment shall be quoted by the Association and the District upon demand.
- (b) In the event, during the term, or upon expiration of this Amendment, it is no longer feasible to operate the Grand Valley Powerplant as determined by the parties to this Amendment or upon cancellation or termination of this Amendment, and the option to purchase in Article 21.(a) herein is not exercised, the Private Equipment will be removed from Federal lands at the option of the United States. Such removal shall be at the sole expense of the Association and the District within a reasonable period of time and as approved by the United States.
- (c) Upon cancellation or termination, any remaining lease payments shall be determined as of the date of cancellation or termination in the same manner as set forth in Article 6 herein, and payment shall be made within 60 days of the date of cancellation or termination. Any other remaining debts shall be the responsibility of the incurring party unless otherwise provided for in this Amendment.

#### DISTRIBUTION OF REVENUES

22. (a) All power revenues received by the Association and the District from the Grand Valley Powerplant hydroelectric operations ("Power Revenues") shall be applied in the following order of priority:

- (1) To make lease payments to the United States under Article 6 herein and payments for Incremental Advances to the United States under Article 5 herein.
- (2) To pay the annual Ordinary Operation and Maintenance costs of the Grand Valley Powerplant, and the annual Ordinary Operation and Maintenance costs of the Related Facilities to the extent the Related Facilities are used to transport water to the Grand Valley Powerplant and to return that water to the Colorado River.
- (3) To create and maintain the Powerplant Reserve Account (see Article 23 herein).
- (4) To create and maintain the Powerplant Rehabilitation and Replacement Account (see Article 23 herein).
- (5) To be retained by the Association and the District and used in the manner and for the purposes specified in Article 22.(b) herein.

(b) All Power Revenues received by the Association and the District from the Grand Valley Powerplant hydroelectric operations that are not used for the purposes specified in Articles 22.(a)(1) through (4) herein ("Excess Power Revenues") shall be retained by the Association and the District and used as follows:

- (1) One-half of the Excess Power Revenues shall be retained by the Association and shall be used by the Association to operate, maintain, repair, make replacements to and improve the Garfield Gravity Division of the Project.
- (2) One-half of the Excess Power Revenues shall be retained by the District and shall be used by the District to operate, maintain, repair, make replacements to and improve the Orchard Mesa Division of the Project.

#### POWERPLANT RESERVE AND REHABILITATION AND REPLACEMENT ACCOUNTS

23. (a) The Association and the District shall create and maintain a Powerplant Reserve Account, which will be funded and used as follows:

- (1) The Association and the District shall create a single account that shall be known as the "Powerplant Reserve Account."
- (2) On or before February 28, 2013, the Association and the District shall deposit into the Powerplant Reserve Account from the Power Revenues an amount equal to the sum of the Ordinary Operation and Maintenance expenses (but not including Replacement Maintenance expenses) for the Powerplant for the calendar year 2012 and the annual lease payment due to the United States for the calendar year 2012. This amount shall be referred to in Article 23.(a) herein as the "Annual O&M Base Amount."
- (3) Subject to the provisions of Article 23.(a)(4) through (7) herein, the Association and the District shall maintain in the Powerplant Reserve Account an amount at least equal to the Annual O&M Base Amount, increased or decreased annually by the change in the Consumer Price Index for All Urban Consumers (CPI-U) for the Denver-Boulder-Greeley, Colo., metropolitan

area. If in the future such index no longer exists, the parties to this Amendment shall choose a similar index to replace it.

- (4) The Association and the District shall be entitled to use the funds in the Powerplant Reserve Account for Replacement Maintenance expenses, improvements to the Grand Valley Powerplant and the Related Facilities, and for emergency or other unexpected costs related to the operation, maintenance and improvement of the Grand Valley Powerplant and the Related Facilities; *Provided*, That the funds in the Powerplant Reserve Account are used for these general purposes in a manner consistent with the Operations and Maintenance Plan described in Article 7 herein. The specific projects or uses of the funds in the Powerplant Reserve Account shall be determined at the discretion of the Association and the District, also in a manner consistent with the Operations and Maintenance Plan described in Article 7 herein.
- (5) If the Association and the District use funds from the Powerplant Reserve Account during a calendar year, they shall replenish the Powerplant Reserve Account no later than February 28 of the following calendar year.
- (6) The Association and the District shall be entitled to use the Power Revenues to fund, replenish and otherwise maintain the Powerplant Reserve Account.
- (7) The Association and the District shall be entitled to let the interest earned on the funds in the Powerplant Reserve Account accrue to the Powerplant Reserve Account or to transfer any or all of such interest to the Powerplant Rehabilitation and Replacement Account, described in Article 23.(b) herein, at their discretion.

(b) The Association and the District shall create and maintain a Powerplant Rehabilitation and Replacement Account, which will be funded and used as follows:

- (1) The Association and the District shall create a single account that shall be known as the "Powerplant Rehabilitation and Replacement Account."
- (2) The Powerplant Rehabilitation and Replacement Account shall be funded from the Power Revenues, from interest earned on funds in the Powerplant Reserve Account, from interest earned on the funds in the Powerplant Rehabilitation and Replacement Account, and from funds from any other sources that the Association and the District determine at their discretion to deposit into the Powerplant Rehabilitation and Replacement Account. The amount of Power Revenues and other funds to be deposited into the Powerplant Rehabilitation and Replacement Account each year shall be determined by the Association and the District based on funding needs for anticipated Replacement Maintenance consistent with the Operations and Maintenance Plan developed in accordance with Article 7 herein, and for anticipated improvements to the Grand Valley Powerplant and the Related Facilities.
- (3) Subject to the provisions of Article 23.(b)(4) herein, the Association and the District shall use the funds in the Powerplant Rehabilitation and Replacement Account to improve the Powerplant and the Related Facilities and for Replacement Maintenance on the Grand Valley Powerplant; *Provided*, That

the funds in the Powerplant Rehabilitation and Replacement Account are used for these general purposes, the specific projects or uses of the funds in the Powerplant Rehabilitation and Replacement Account shall be determined at the discretion of the Association and the District.

- (4) If the Association and the District determine, in the exercise of their reasonable discretion, that some or all of the funds in the Powerplant Rehabilitation and Replacement Account are no longer needed to improve the Grand Valley Powerplant or the Related Facilities or for Replacement Maintenance, they shall be entitled to transfer the excess funds in the Powerplant Rehabilitation and Replacement Account to each of them, one-half to the Association and one-half to the District. Such excess funds that are transferred to the Association and the District shall be used for the purposes specified in Article 22.(b) herein.

(c) If the Association and the District fail to maintain either the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund in accordance with the provisions of Article 23 herein, this shall be construed as default under this Amendment as specified in Article 17.(a)1. herein.

(d) Upon expiration of the term of this Amendment or upon any cancellation or termination of this Amendment, any amounts then remaining in either the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund, after fulfillment of obligations under this Amendment, shall be disbursed one-half to the Association and one-half to the District.

(e) The amounts required to be maintained in the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund may be adjusted from time to time as mutually agreed to by the United States, the Association and the District.

#### STATEMENT OF COSTS

24. The Association and the District shall submit annually to the United States, on or before June 30 of each year that this Amendment is in effect, an accounting showing Power Revenues received during the preceding calendar year and how such Power Revenues were applied during the preceding calendar year.

#### AUDIT

25. (a) The parties to this Amendment shall maintain accurate records and books of account in accordance with generally accepted accounting principles and consistent with this Amendment. Said books and records shall present fairly all costs and expenses utilized either directly or indirectly in computing any charges or payments to the other parties to this Amendment.
- (b) Upon 30 days written notice each party to this Amendment shall afford the other party or its independent auditors reasonable access to the relevant records and books

of account during the term of the Amendment, and for a period of twenty-four months thereafter.

(c) The party to this Amendment that requests the audit under Article 25.(b) herein will be solely responsible for its own costs incurred to perform the audit.

#### NOTICES

26. (a) Any notice authorized or required to be given to the Association shall be delivered to or mailed postage prepaid to the Manager, Grand Valley Water Users Association, 1147 24 Road, Grand Junction, Colorado 81505. Any notice authorized or required to be given to the District shall be delivered to or mailed postage prepaid to the Manager, Orchard Mesa Irrigation District, 668 38 Road, Palisade, Colorado 81526. Any notice authorized or required to be given to the United States shall be delivered to or mailed postage prepaid to the Area Manager, Bureau of Reclamation, 2764 Compass Drive Suite 106, Grand Junction, Colorado 81506. Notice shall be effective on the date of delivery or mailing.

(b) The designation of the addresses or the addresses given above may be changed by notice given in the same manner as provided in Article 26 herein for other notices.

#### RULES, REGULATIONS AND DETERMINATIONS

27. (a) The parties to this Amendment agree that the delivery of water or the use of Federal facilities pursuant to this Amendment is subject to Reclamation law, as presently amended and supplemented, and the rules and regulations promulgated by the Secretary of the Interior under Reclamation law.

(b) The United States shall have the right to make determinations necessary to administer this Amendment that are consistent with the laws of the United States of America and the State of Colorado, and the express and implied provisions of this Amendment, and the rules and regulations promulgated by the Secretary of the Interior. Such determinations shall be made in consultation with the parties to this Amendment.

#### ENTIRETY CLAUSE

28. This Amendment constitutes the entire agreement between and among the parties to this Amendment with respect to the subject matter hereof and after the Effective Date hereof, shall supersede all prior agreements, contracts and understandings, written or oral, with respect to such subject matter. The parties to this Amendment acknowledge that the Association and the District intend to enter into a separate Operating Agreement between those two entities to set forth agreed procedures for their joint operation of the Grand Valley Powerplant. The Association and the District will provide a copy of the Operating Agreement to the United States after it is

executed by them. If there are any conflicts between the provisions in the Operating Agreement and this Amendment, this Amendment shall control.

#### OFFICIALS NOT TO BENEFIT

29. No member of or delegate to Congress or Resident Commissioner or officer of the Association or the District shall be admitted to any share or part of this Amendment or to any benefit that may arise herefrom, other than as a water user or landowner in the same manner as other water users or landowners or as a shareholder in the company.

#### AMENDMENT

30. This Amendment may not be amended, altered, or modified except in writing and must be signed by all of the parties to this Amendment.

#### SEVERABILITY

31. If any provisions of this Amendment or the application thereof to any person or circumstances shall be invalid or unenforceable to any extent, the remainder of this Amendment and the application of such provisions to other persons or circumstances shall not be affected thereby and may be enforced to the greatest extent permitted by law.

#### ASSIGNMENT LIMITED—SUCCESSORS AND ASSIGNS OBLIGATED

32. The provisions of this Amendment shall apply to and bind the successors and assigns of the parties to this Amendment, but no assignment or transfer of this Amendment or any right or interest therein shall be valid until approved in writing by the United States.

#### LIMITATION OF LIABILITY

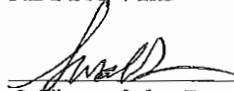
33. Subject to Article 19 herein, the liability of the Association and the District for their obligations under this Amendment, including without limitation, their obligations to operate and maintain the Grand Valley Powerplant, to perform Replacement Maintenance, to return the Grand Valley Powerplant in as good condition as when received, reasonable wear and tear excepted, and to provide the Private Equipment shall be limited to the total amount of Power Revenues actually received by the Association and the District during the term of this Amendment.

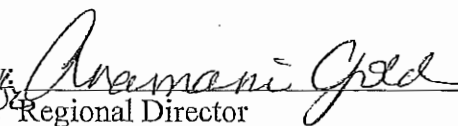


IN WITNESS WHEREOF, the parties to this Amendment have caused this Amendment to be duly executed as the day and year first written above.

DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

APPROVED

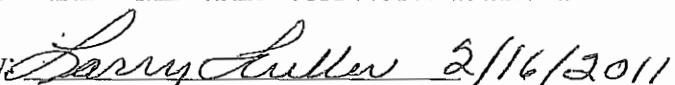
  
Office of the Regional Solicitor  
Intermountain Region

By:   
Regional Director

ATTEST:

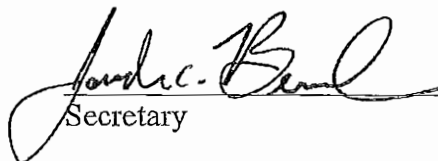
  
Secretary

ORCHARD MESA IRRIGATION DISTRICT

By:  2/16/2011  
President

ATTEST:

GRAND VALLEY WATER USERS ASSOCIATION

  
Secretary

By:   
President

DISTRICT COURT, WATER DIVISION NO. 5, STATE OF COLORADO

Case No. 91CW247

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STIPULATION AND AGREEMENT

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CONCERNING THE APPLICATION FOR WATER RIGHTS OF THE GRAND VALLEY WATER USERS ASSOCIATION, ORCHARD MESA IRRIGATION DISTRICT, AND THE UNITED STATES OF AMERICA, IN MESA COUNTY, COLORADO

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This Stipulation and Agreement, dated as of September 4, 1996, is made between the Co-Applicants, the Grand Valley Water Users Association, the Orchard Mesa Irrigation District ("OMID"), the United States of America ("United States"), and the following parties who are collectively referred to herein as the "Objectors":

Aurora, City of  
Basalt, Town of  
Basalt Water Conservancy District  
Carbondale, Town of  
Colorado Division of Wildlife  
Colorado River Water Conservation District  
Colorado Springs, City of  
Colorado State Engineer  
Colorado Water Conservation Board  
Copper Mountain, Inc.  
Copper Mountain Consolidated Metropolitan District (successor-in-interest to  
Copper Mountain Water and Sanitation District)  
Cyprus Climax Metals Company  
DeBeque, Town of  
Division Engineer, Water Division No. 5  
Eagle, Town of  
Exxon Company, U.S.A.  
Frisco, Town of  
Glenwood Springs, City of  
Grand County Water & Sanitation District No. 1  
Grand Valley Irrigation Company  
Middle Park Water Conservancy District  
Mid Valley Metropolitan District  
Mobil Mining & Minerals Company

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New Castle, Town of  
North Barton Creek Ltd. Liability Company  
Palisade, Town of  
Parachute, Town of  
Pueblo, Board of Water Works of  
Public Service Company of Colorado  
Ralston Resorts, Inc. (successor-in-interest to Keystone Resorts Management,  
Inc., and Breckenridge Ski Corporation)  
Rifle, City of  
Rifle Land Associates, Ltd.  
Silverthorne, Town of  
Spruce Valley Ranch Foundation  
Summit County Commissioners, Board of  
Union Oil Company of California  
Upper Eagle Regional Water Authority  
Vail Associates, Inc.  
Vail Valley Consolidated Water District

In consideration of the mutual agreements contained herein, Co-Applicants and Objectors agree as follows:

1. Definitions. Unless otherwise indicated, the following terms shall have the following definitions in this Stipulation and Agreement and in any decree which may be subsequently entered in this case:

- "15-Mile Reach" shall mean the reach of the Colorado River which extends, from the point at which the tailrace common to the Grand Valley Power Plant and the OMID pumping plant returns to the Colorado River below the Grand Valley Irrigation Company ("GVIC") diversion dam, downstream to the confluence of the Colorado River and Gunnison River.

- "Blue River Decrees" shall mean the stipulations, judgments, orders and decrees entered in consolidated Civil Action Nos. 2782, 5016 and 5017, United States District Court, District of Colorado, including without limitation the decrees dated October 12, 1955, and April 16, 1964.

- "HUP" shall mean the so-called "historic users pool" defined as water to be released from the Green Mountain Reservoir power pool as described in paragraphs 2 and 3 of the Operating Policy.

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- "HUP beneficiaries" shall mean those persons or entities for whose benefit releases are made from the HUP pursuant to the Operating Policy.

- "OMID Right" shall mean the 450 c.f.s. decreed as Priority No. 197 as renumbered to the OMID System of Canals and Ditches by decree of the Mesa County District Court entered on July 25, 1941, in Case No. 5812.

- "Operating Policy" shall mean the Operating Policy for Green Mountain Reservoir; Colorado-Big Thompson Project, Colorado (Volume 48, No. 247 Federal Register 12/22/83; as amended in Volume 52, No. 176 Federal Register 9/11/87).

- "Orchard Mesa Check" shall mean the three mechanically operated radial gates and the bypass channel by which the water level in the common afterbay of the Grand Valley Power Plant and the OMID pumping plant can be raised to a level which causes water to flow through the bypass channel and return to the Colorado River immediately upstream of the GVIC diversion dam, and shall include any replacement structure in the same location which performs that same function.

- "Parties" shall mean each of the parties to this Stipulation and Agreement as identified in the first unnumbered paragraph, above. A "party" shall mean one of the parties.

- "Power Right" shall mean the 800 c.f.s., 400 c.f.s. during the irrigation season, decreed to the United States for the Grand Valley Project by decree of the Mesa County District Court entered July 25, 1941, in Case No. 5812.

- "Shoshone Rights" shall mean the water rights decreed for and associated with the Shoshone Power Plant (a.k.a. the Glenwood Power Canal), adjudicated for 1,250 c.f.s. on December 9, 1907, with an appropriation date of January 7, 1902, and adjudicated for 158 c.f.s. on February 7, 1956, with an appropriation date of May 15, 1929.

2. Application. The Co-Applicants filed an application on December 30, 1991, which application was amended on May 24, 1993, for approval of an exchange of water based upon the discharge of water from the common afterbay of the Grand Valley Power Plant and the OMID pumping plant into the Colorado River upstream from the GVIC diversion dam by means of the Orchard Mesa Check. The Co-Applicants have claimed an absolute right for an existing exchange of water with a 1926 priority date. Attached hereto as Exhibit A and incorporated herein by this reference is a list of all of the decreed water

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rights of the Co-Applicants (the "Co-Applicants' Water Rights"), Mesa County Irrigation District and Palisade Irrigation District which are legally divertible at the headgate of the Government Highline Canal (commonly referred to as the "Roller Dam"). Attached hereto as Exhibit B and incorporated herein by this reference is a list of all the decreed water rights of the GVIC (the "GVIC Water Rights") which are legally divertible at the GVIC diversion dam.

3. Decree Provisions. The parties agree to the entry of a decree in Case No. 91CW247, in the form of the proposed decree attached hereto as Exhibit C, granting the application as amended and incorporating the terms of this Stipulation and Agreement.

3.a. Except as provided in paragraphs 3.a.(1), (2) and (3), below, the United States agrees not to exercise the Power Right from April 1 through October 31 of each year so as to place an administrative call which results in the curtailment of diversions by upstream water rights.

3.a.(1) During the months April through October, at any time diversions at the Roller Dam under the irrigation rights listed on Exhibit A are less than 1,310 c.f.s., the Power Right may be exercised so as to maintain a total call of 1,310 c.f.s. at the Roller Dam by the water rights listed on Exhibit A.

3.a.(2) In addition, at any time during the months April through October that diversions by the GVIC Water Rights are less than 400 c.f.s., the Power Right may be exercised for up to the amount that diversions by such GVIC rights are less than 400 c.f.s.; provided, however, that if GVIC gives written notice to the parties pursuant to paragraphs 3.e.(1) or (2) that the GVIC Water Rights shall no longer be subject to the terms of paragraph 3.b., then, at any time during the months April through October, the Power Right may be exercised for up to the amount that GVIC's diversions are less than the amount of GVIC's then existing decreed water rights or less than 400 c.f.s., whichever is less.

3.a.(3) If the Orchard Mesa Check is physically inoperable due to an Act of God or an emergency situation beyond the control of the Co-Applicants, the United States may exercise the Power Right to the full decreed amount for a period not to exceed a total of 14 days during the April 1 through October 31 period in any given year or until the Orchard Mesa Check becomes operable, whichever occurs first. For purposes of this provision, an emergency situation shall not be deemed to occur if the Orchard Mesa Check is inoperable due to a lack of funding or the non-performance of ordinary maintenance.

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3.a.(4) Any calls of the Power Right pursuant to paragraphs 3.a.(1), (2) and (3), above, may be made only when and to the extent the Power Right is in priority, there is capacity in the power canal, and all water called thereunder is delivered to and through the Grand Valley Power Plant.

3.a.(5) For purposes of paragraph 3 of this Stipulation and Agreement, the priority date of the Power Right shall be considered to be August 3, 1934. So long as none of the provisions of paragraph 3 of this Stipulation and Agreement are suspended, the United States agrees not to seek administration under a more senior priority, which the United States asserts is decreed as February 27, 1908. By agreeing not to assert a 1908 priority for the Power Right while paragraph 3 of this Stipulation and Agreement is not suspended, the United States does not waive and shall not be estopped from asserting the right to seek administration under a 1908 priority, nor shall Objectors be estopped from challenging a 1908 priority, in the event any of the provisions of paragraph 3 of this Stipulation and Agreement shall be suspended, as addressed in paragraphs 3.b.(6), 5.c. and 5.d., below. The parties agree that the time for raising claims and defenses concerning the priority of the Power Right is tolled so long as none of the provisions of paragraph 3 of this Stipulation and Agreement are suspended.

3.a.(6) No provision of this Stipulation and Agreement shall be considered to affect in any way the right of the United States to call for the 800 c.f.s. power right from November 1 through March 31.

3.b. During the period April 1 through October 31 of any year that the conditions set forth in paragraphs 3.b.(1), (2) and (3), below, are met, diversions by HUP beneficiaries (except the HUP beneficiaries who own and/or operate the water rights listed in Exhibits A and B) shall not be curtailed by any administrative call by the water rights listed in Exhibits A and B:

3.b.(1) the Orchard Mesa Check is physically operable. For purposes of this provision, the Orchard Mesa Check shall be considered to be physically operable unless it is rendered inoperable due to an Act of God or an emergency situation beyond the control of the Co-Applicants. An emergency situation shall not be deemed to occur if the Orchard Mesa Check is inoperable due to a lack of funding or the non-performance of ordinary maintenance. If the Orchard Mesa Check is rendered inoperable, Co-Applicants shall make best efforts to bring the facility back into operation as soon as possible.





## **Exhibit B**

### **Private Equipment**

#### New Private Equipment (photos attached)

- 1) Material: 1- 40' class 2 pole and associated hardware  
9 - 300A bladed cutout switches  
3- Metering Current Transformers  
3 -Metering accuracy Potential Transformers  
1 - primary electric meter with recorder  
Total Estimated Cost: \$21,586
  
- 2) Material: 3 - 40' class 3 poles and associated hardware  
800' - #2 ACSR Bare Primary conductors  
3- 50kva xfmr's for 120/208v service  
80'- 4/0 al quad 120/208v conductors to new meter.  
3- metering accuracy current transformers.  
Total Estimated Cost: \$25,000

- 3) Telemetry equipment: After initial energization and before March 31, 2011, Public Service shall upgrade the standard watt-hour meter to install a Nexus meter with advanced communication capability and a suitable telecommunications channel device and related equipment to comply with the telemetry requirements for this installation (see Section 8.4 of the Technical Requirements). Cost is an incremental \$5,000 for the cost differential between the standard and advanced meter plus the telemetry equipment.

#### Original Private Equipment (located in the transformer yard)

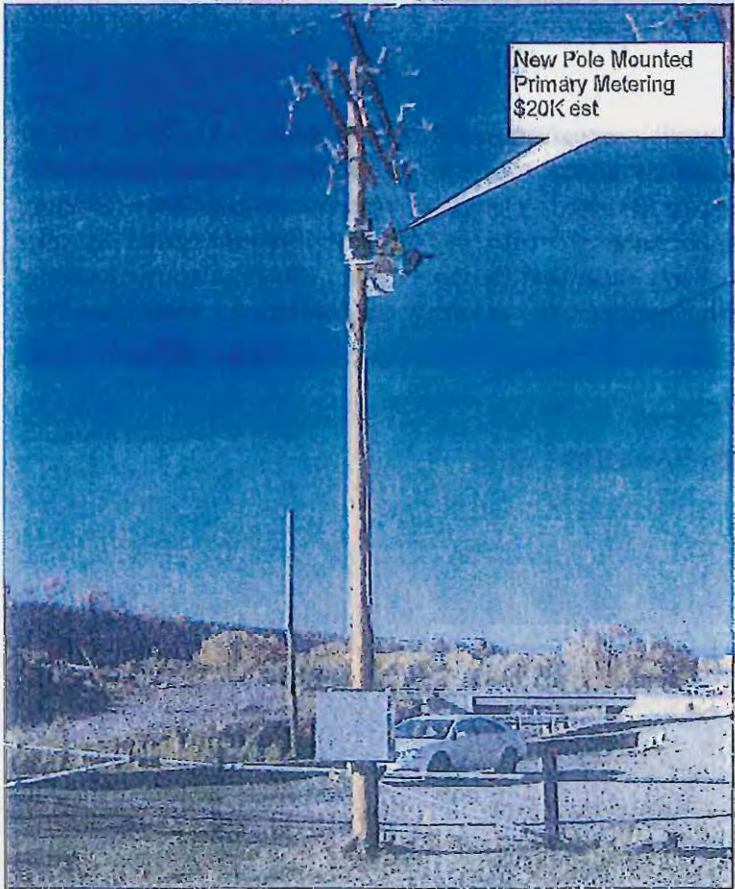
See attached list and photo.



New Private  
Equipment

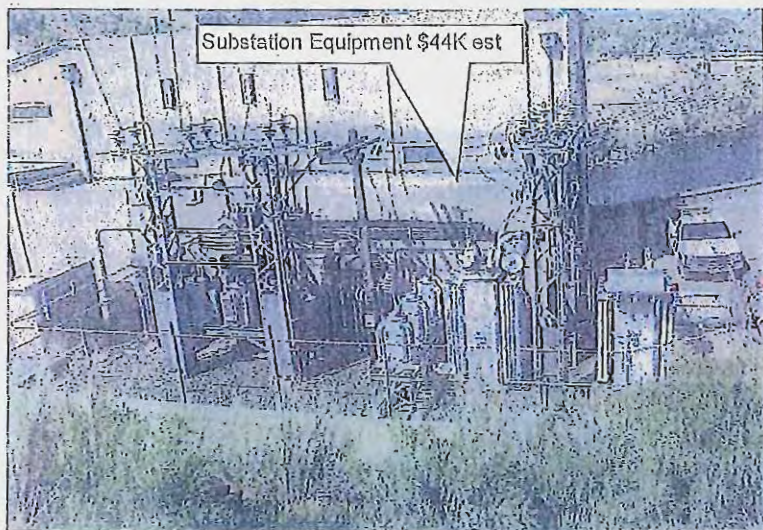


New OMID  
Control Computer,  
Associated  
Equipment, &  
Display \$30K est



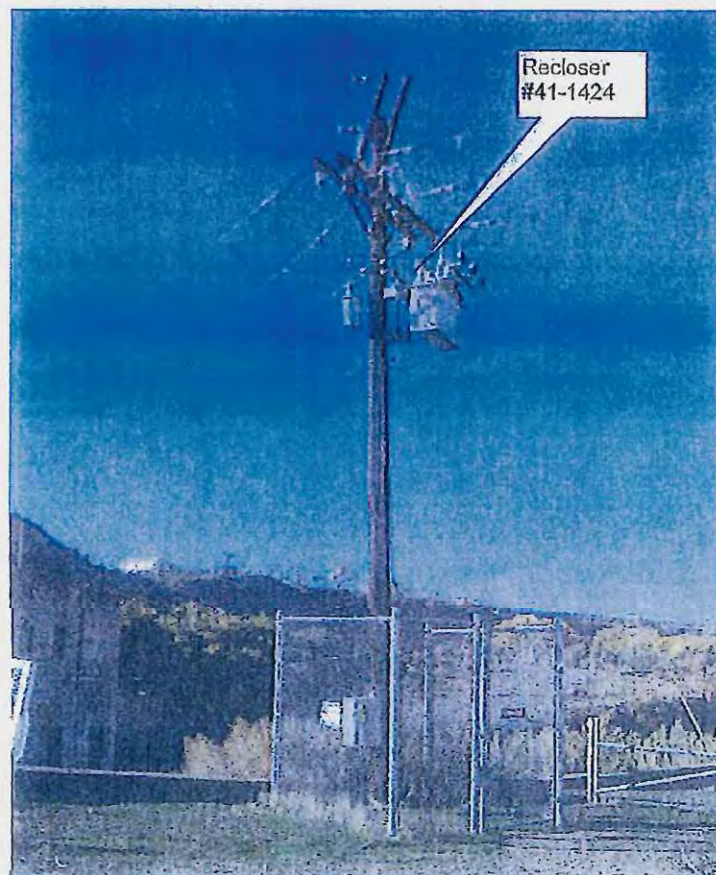
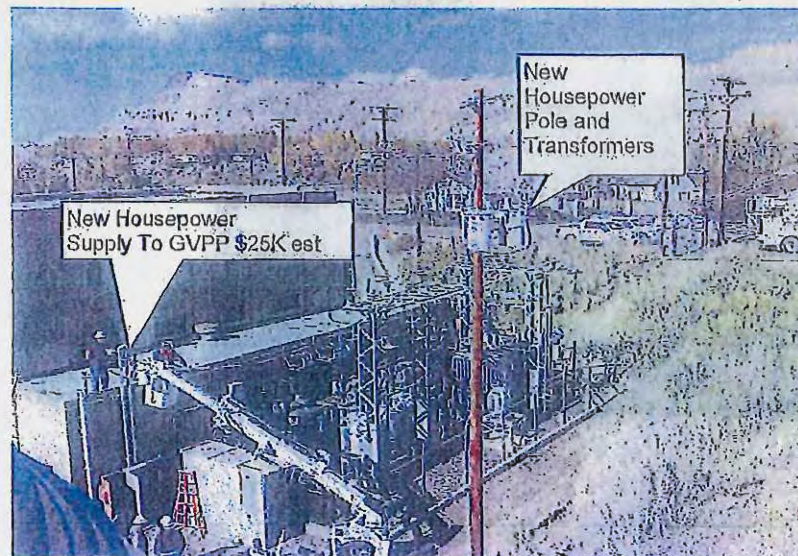
New Pole Mounted  
Primary Metering  
\$20K est

New Private  
Equipment





New Private  
Equipment

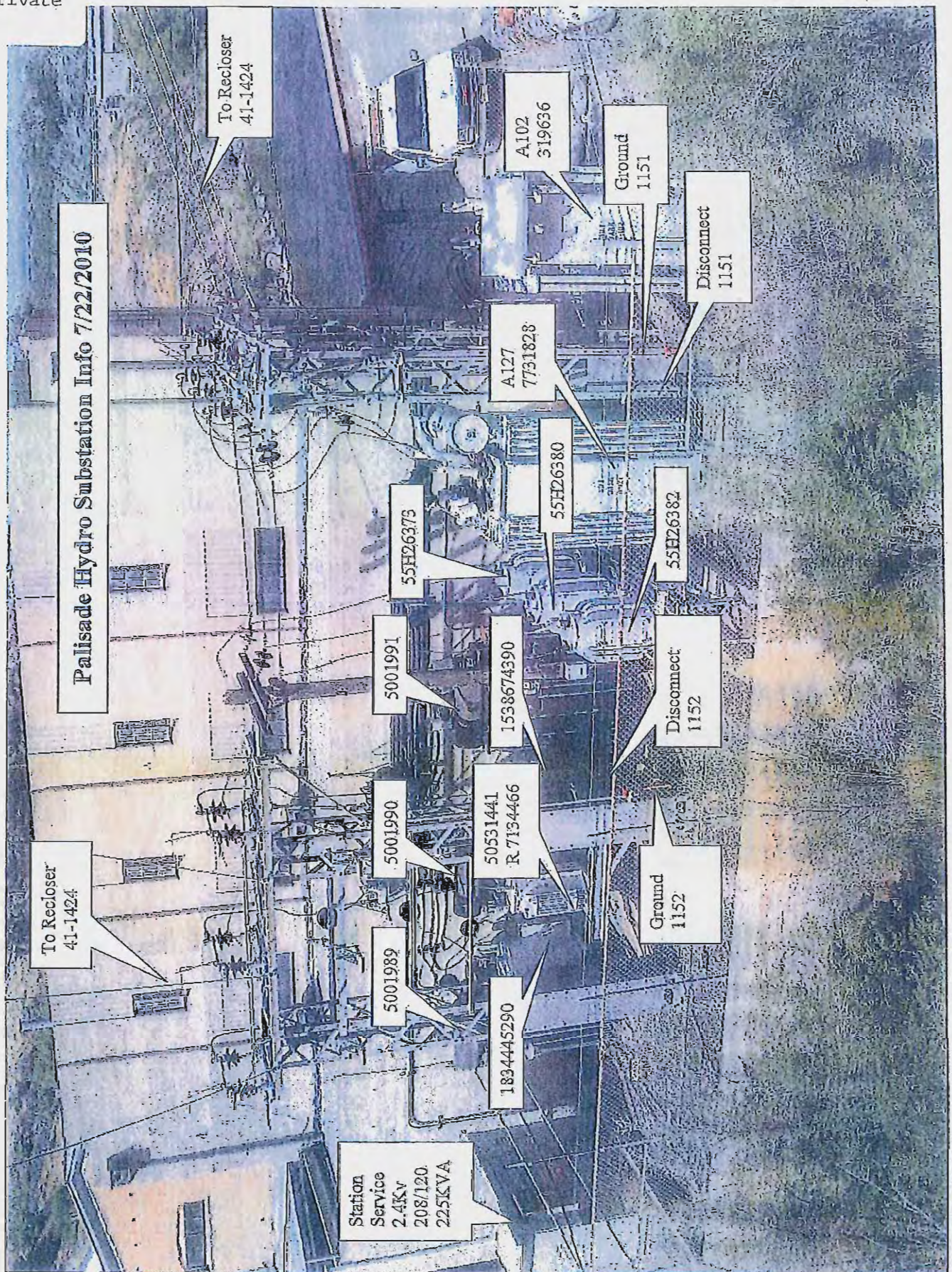


Original Private  
Equipment

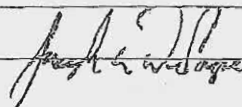
vinlage	refillment_unit_desc	cp_tiedger_long_description	cp_ae_long_description	activity_qty	activity_cost	asset_id	asset_location	utility_account_id	serial_number
1955	Transf Substation 1PH Distr	TR PWR 1PH 7200V / 220V	Transformer 1 Phase 7.2KV / 220V	1	1,090.00	11376057	Elec Dist-Sub-CO- Under 44KV-Palisade Station.	10362000	59426373
1955	Transf Substation 1PH Distr	TR PWR 1PH 7200V / 220V	Transformer 1 Phase 7.2KV / 220V	-1	-1,090.00	11376058	Elec Dist-Sub-CO- Under 44KV-Palisade Station.	10362000	55126382
1955	Transf Substation 1PH Distr	TR PWR 1PH 7200V / 220V	Transformer 1 Phase 7.2KV / 220V	1	1,090.00	11376059	Elec Dist-Sub-CO- Under 44KV-Palisade Station.	10362000	55126390
1951	Transf Substation 1PH Distr	TR PWR 1PH 43000V / 7200V	Transformer 1 Phase 13KV / 7.2KV	1	2,596.00	11376177	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	56500046
1951	Transf Substation 1PH Distr	TR PWR 1PH 43000V / 7200V	Transformer 1 Phase 13KV / 7.2KV	1	2,596.00	11376178	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	56500046
1951	Transf Substation 1PH Distr	TR PWR 1PH 25000V / 4000V	Transformer 1 Phase 25KV / 4KV	1	4,890.00	11375434	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	59000047
1934	Transf Substation 1PH Distr	TR PWR 1PH 25000V / 4000V	Transformer 1 Phase 25KV / 4KV	1	4,890.00	11375435	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	50011989
1934	Transf Substation 1PH Distr	TR PWR 1PH 25000V / 4000V	Transformer 1 Phase 25KV / 4KV	1	4,890.00	11375436	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	50011991
1945	Transf Substation 3PH Distr	TR PWR 3PH 13000V / 2300V	Transformer 3 Phase 13KV / 2.3KV	-1	5,312.00	11375483	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	7731028
1940	Transf Substation 3PH Distr	TR PWR 3PH 13000V / 4000V	Transformer 3 Phase 13KV / 4KV	1	3,464.00	11376060	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	3119636

Red = input file site.  
Green = not on the list.

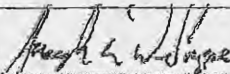






CERTIFICATE OF COVERAGE						Certificate # 5057	
<b>Administrator</b> Colorado Special Districts Property and Liability Pool P.O. Box 1539 Portland OR 97207-1539				THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.			
				<b>COMPANIES AFFORDING COVERAGE</b>			
<b>NAMED MEMBER</b> Orchard Mesa Irrigation District 668 38 Rd Palisade, CO 81526				COMPANY A Colorado Special Districts Property and Liability Pool			
				COMPANY B General Reinsurance Corporation			
				COMPANY C Certain Underwriters at Lloyd's, London			
				COMPANY D Safety National Casualty Corporation			
<b>COVERAGE</b>							
This is to certify that coverage documents listed herein have been issued to the Named Member herein for the Coverage period indicated. Notwithstanding any requirement, term or condition of any contract or other document with respect to which the certificate may be issued or may pertain, the coverage afforded by the coverage documents listed herein is subject to all the terms, conditions and exclusions of such coverage documents.							
CO LTR	Type of Coverage	Coverage #	Effective Date	Expiration Date	Limits		
A, B	<b>General Liability</b>	24C56325-570	1/1/2011	1/1/2012	General Aggregate	Unlimited	
	<input checked="" type="checkbox"/> Commercial General Liability	* Except that for claims, occurrences or suits to which the monetary limits of the Colorado Governmental Immunity Act, C.R.S. 24-10-101, et. seq., as amended, apply, there shall be a further sublimit of (a) \$150,000 for an injury to any one person in any single occurrence; and (b) \$600,000 for an injury to two or more persons in any single occurrence; but in the event of an injury to two or more persons in any single occurrence, the sublimit shall not exceed \$150,000 for each injured person.			Each Occurrence *	\$1,000,000	
	<input checked="" type="checkbox"/> Public Officials Liability						
	<input checked="" type="checkbox"/> Employment Practices						
	<input checked="" type="checkbox"/> Occurrence						
A, B	<b>Automobile Liability</b>	24C56325-570	1/1/2011	1/1/2012	Each Occurrence *	\$1,000,000	
	<input checked="" type="checkbox"/> Scheduled Autos						
	<input checked="" type="checkbox"/> Hired Autos						
	<input checked="" type="checkbox"/> Non-Owned Autos						
A, C	<b>Auto Physical Damage</b>	24C56325-570	1/1/2011	1/1/2012	See below if applicable.		
	<input checked="" type="checkbox"/> Scheduled Autos						
	<input checked="" type="checkbox"/> Hired Autos						
	<b>Excess Liability</b>				General Aggregate		
	<input type="checkbox"/> Other Than Umbrella Form				Each Occurrence *		
A, C	<b>Property</b>	24C56325-570	1/1/2011	1/1/2012	See below if applicable.		
	<input checked="" type="checkbox"/>						
<b>DESCRIPTION</b> Certificate Holder is an additional covered Member for those coverages noted hereunder but only with respect to those liabilities that are covered by the Pool's coverage document for the Member District arising from lease agreement for the Property located at 668 38 Road, Palisade, CO 81526 Subject to the provisions and limitations contained in C.R.S. 24-10-101. The Pool will limit any amounts to the monetary limits and sublimits of the Colorado Governmental Immunity Act, C.R.S. 24-10-101 et. Seq., as amended, would apply to the Covered Member. Pollution Liability Coverage is \$1,000,000 per Pollution Condition & \$5,000,000 aggregate all Pollution Conditions both are all Members combined.							
<b>CERTIFICATE HOLDER</b> Public Service Corporation dba Xcel Energy c/o Manager Area Engineering PO Box 840 Denver, CO 80201				<b>CANCELLATION:</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.			
				By: Joseph E. DePaepe  Date: 1/19/2011			



CERTIFICATE OF COVERAGE					CERTIFICATE NUMBER 272	
<b>ADMINISTRATOR</b>  Colorado Special Districts Property and Liability Pool POB 1539 Portland OR 97207-1539			THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.  <div style="text-align: center;"><b>COMPANIES AFFORDING COVERAGE</b></div>			
<b>NAMED MEMBER</b> Orchard Mesa Irrigation District ATTN: 668 38 Road Palisade, CO 81526			COMPANY A - Colorado Special Districts Property and Liability Pool COMPANY B COMPANY C COMPANY D			
<b>COVERAGES</b>						
THIS IS TO CERTIFY THAT COVERAGE DOCUMENTS LISTED HEREIN HAVE BEEN ISSUED TO THE NAMED MEMBER HEREIN FOR THE COVERAGE PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH COVERAGE DOCUMENTS.						
CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION	LIMITS	
	<b>GENERAL LIABILITY</b>				GENERAL AGGREGATE	
	<input type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	
	<input type="checkbox"/> CLAIMS MAD <input type="checkbox"/> OCCUR				PERSONAL & ADV. INJURY	
	<input type="checkbox"/> OWNER'S & CONTRACTORS PROT				EACH OCCURRENCE	
					FIRE DAMAGE (Any one fire)	
					MED EXPENSE (Any one person)	
	<b>AUTOMOBILE LIABILITY</b>				COMBINED SINGLE LIMIT	
	<input type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE	
	<input type="checkbox"/> HIRED AUTOS					
	<input type="checkbox"/> NON-OWNED AUTOS					
	<b>GARAGE LIABILITY</b>				AUTO ONLY - EA ACCIDENT	
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY:	
					EACH ACCIDENT	
					AGGREGATE	
	<b>EXCESS LIABILITY</b>				EACH OCCURRENCE	
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE	
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM					
A	<b>WORKERS COMPENSATION AND EMPLOYERS LIABILITY</b>	11W56325-70	1/1/2011	1/1/2012	<input checked="" type="checkbox"/> WC STATU- TORY LIMITS <input type="checkbox"/> OTHER	
					EL EACH ACCIDENT	2,000,000
					EL DISEASE - POLICY LIMIT	2,000,000
					EL DISEASE - EACH EMPLOYEE	2,000,000
	<b>OTHER</b>					
<b>DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS (LIMITS MAY BE SUBJECT TO DEDUCTIBLES OR RETENTIONS)</b> Subject to the terms and conditions of the Workers' Compensation Coverage Document. Proof of Coverage Only.						
<b>CERTIFICATE HOLDER</b>			<b>CANCELLATION</b>			
Public Service Corporation dba Xcel Energy c/o Manager Area Engineering PO Box 840 Denver, CO 80201			SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  <div style="text-align: right;">               By: Joseph E. DePaape           </div>			
VALID AS OF: 1/19/2011						





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/17/2011

PRODUCER (970)243-6600 FAX: (970)243-3914

Home Loan &amp; Investment Company

205 North 4th Street

P. O. Box 100

Grand Junction CO 81502-0100

INSURED

Grand Valley Water Users Assoc

1147 - 24 Road

Grand Junction CO 81505

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: American Alternative Ins.

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR	ADD'L	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
LTR	INSRD					
A		GENERAL LIABILITY				EACH OCCURRENCE \$ 1,000,000
		<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000
		<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR	SP9151853-02	6/1/2010	6/1/2011	MED EXP (Any one person) \$ 10,000
						PERSONAL & ADV INJURY \$ 1,000,000
						GENERAL AGGREGATE \$ 3,000,000
		GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COM/OP AGG \$ 3,000,000
		<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO- JECT <input type="checkbox"/> LOC				
A		AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
		<input checked="" type="checkbox"/> ANY AUTO	SA8051916-03	6/1/2010	6/1/2011	BODILY INJURY (Per person) \$
		<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
		<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident) \$
		<input type="checkbox"/> HIRED AUTOS				
		<input type="checkbox"/> NON-OWNED AUTOS				
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
		<input type="checkbox"/> ANY AUTO				OTHER THAN EA ACC \$
						AUTO ONLY: AGG \$
A		EXCESS / UMBRELLA LIABILITY				EACH OCCURRENCE \$ 10,000,000
		<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE \$
						\$
		DEDUCTIBLE	SX9250664-02	6/1/2010	6/1/2011	\$
		RETENTION \$				\$
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU- TORY LIMITS
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N			OTH- ER
		If yes, describe under SPECIAL PROVISIONS below				E.L. EACH ACCIDENT \$
						E.L. DISEASE - EA EMPLOYEE \$
A		OTHER Leased/Rented Equip	SP9151853-02	6/1/2010	6/1/2011	E.L. DISEASE - POLICY LIMIT \$
						Limit \$100,000

## DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Certificate Holder is listed as an Additional Insured with coverage applying on a primary and non-contributory basis.  
\*10-day for non-payment.

## CERTIFICATE HOLDER

Public Service Corporation  
d/b/a Xcel Energy  
Manager Area Engineering  
PO Box 840  
1123 W.3rd Ave.  
Denver, CO 80201

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30\* DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Matthew Hall/CHAN

ACORD 25 (2009/01)

INS025 (200901)

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
1/18/2011

PRODUCER (970) 243-6600 FAX: (970) 243-3914

Home Loan & Investment Company

205 North 4th Street

P. O. Box 100

Grand Junction CO 81502-0100

INSURED

Grand Valley Water Users Assoc

1147 - 24 Road

Grand Junction CO 81505

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: SIP/Pinnacle

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC				EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) \$  BODILY INJURY (Per person) \$  BODILY INJURY (Per accident) \$  PROPERTY DAMAGE (Per accident) \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$  OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
	<b>EXCESS / UMBRELLA LIABILITY</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  DEDUCTIBLE RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$ \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N If yes, describe under SPECIAL PROVISIONS below	190612	7/1/2010	7/1/2011	WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
	<b>OTHER</b>				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

\*\*10-day for non-payment

## CERTIFICATE HOLDER

Public Service Corporation  
d/b/a Xcel Energy  
Manager Area Engineering  
PO Box 840  
1123 W.3rd Ave.  
Denver, CO 80201

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30\* DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Matthew Hall/KITTY





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/17/2011

PRODUCER (970) 243-6600 FAX: (970) 243-3914

Home Loan &amp; Investment Company

205 North 4th Street

P. O. Box 100

Grand Junction CO 81502-0100

INSURED

Grand Valley Water Users Assoc

1147 - 24 Road

Grand Junction CO 81505

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## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: American Alternative Ins.

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

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INSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY	SP9151853-02	6/1/2010	6/1/2011	EACH OCCURRENCE \$ 1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person) \$ 10,000
					PERSONAL & ADV INJURY \$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:				GENERAL AGGREGATE \$ 3,000,000
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC				PRODUCTS - COM/OP AGG \$ 3,000,000
A	AUTOMOBILE LIABILITY	SA8051916-03	6/1/2010	6/1/2011	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person) \$
	ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident) \$
	HIRED AUTOS				
	NON-OWNED AUTOS				
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN EA ACC \$
					AUTO ONLY: AGG \$
A	EXCESS / UMBRELLA LIABILITY	SX9250664-02	6/1/2010	6/1/2011	EACH OCCURRENCE \$ 10,000,000
	<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE \$
					\$
					\$
	DEDUCTIBLE \$				\$
	RETENTION \$				\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER <input type="checkbox"/>
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)				E.L. EACH ACCIDENT \$
	If yes, describe under SPECIAL PROVISIONS below				E.L. DISEASE - EA EMPLOYEE \$
A	OTHER Leased/Rented Equip	SP9151853-02	6/1/2010	6/1/2011	E.L. DISEASE - POLICY LIMIT \$
					Limit \$100,000

## DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Certificate holder is listed as an Additional Insured with coverage applying on a primary and non-contributory basis.

## CERTIFICATE HOLDER

(970) 464-5928

Orchard Mesa Irrigation District

Max Schmidt

668 38 Road

Palisade, CO 81526

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Matthew Hall/CHAN

ACORD 25 (2009/01)

INS025 (200901)

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
1/18/2011

PRODUCER (970)243-6600 FAX: (970)243-3914

Home Loan & Investment Company  
205 North 4th Street  
P. O. Box 100

Grand Junction CO 81502-0100

## INSURED

Grand Valley Water Users Assoc  
1147 - 24 Road

Grand Junction CO 81505

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION  
ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE  
HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR  
ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

## INSURERS AFFORDING COVERAGE

## NAIC #

INSURER A: SIP/Pinnacol

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC				EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMPI/OP AGG \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) \$  BODILY INJURY (Per person) \$  BODILY INJURY (Per accident) \$  PROPERTY DAMAGE (Per accident) \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
	<b>EXCESS / UMBRELLA LIABILITY</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  DEDUCTIBLE \$ RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$ \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under SPECIAL PROVISIONS below  OTHER	190612	7/1/2010	7/1/2011	WC STATUTORY LIMITS <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

## CERTIFICATE HOLDER

(970) 464-5928

Orchard Mesa Irrigation District  
Max Schmidt  
668 38 Road  
Palisade, CO 81526

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.AUTHORIZED REPRESENTATIVE  
Matthew Hall/KITTY



# CERTIFICATE OF COVERAGE

Certificate #: 058

**Administrator**  
Colorado Special Districts Property and Liability Pool  
P.O. Box 1539  
Portland OR 97207-1539

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.

## COMPANIES AFFORDING COVERAGE

**NAMED MEMBER**  
Orchard Mesa Irrigation District  
668 38 Rd  
Pallisade, CO 81526

COMPANY A Colorado Special Districts Property and Liability Pool  
COMPANY B General Reinsurance Corporation  
COMPANY C Certain Underwriters at Lloyd's, London  
COMPANY D Safety National Casualty Corporation

## COVERAGE

This is to certify that coverage documents listed herein have been issued to the Named Member herein for the Coverage period indicated. Notwithstanding any requirement, term or condition of any contract or other document with respect to which the certificate may be issued or may pertain, the coverage afforded by the coverage documents listed herein is subject to all the terms, conditions and exclusions of such coverage documents.

CO LTR	Type of Coverage	Coverage #	Effective Date	Expiration Date	Limits	
A, B	General Liability	24C56325-570	1/1/2011	1/1/2012	General Aggregate	Unlimited
	<input checked="" type="checkbox"/> Commercial General Liability	* Except that for claims, occurrences or suits to which the monetary limits of the Colorado Governmental Immunity Act, C.R.S. 24-10-101, et. seq., as amended, apply, there shall be a further sublimit of (a) \$150,000 for an injury to any one person in any single occurrence; and (b) \$600,000 for an injury to two or more persons in any single occurrence; but in the event of an injury to two or more persons in any single occurrence, the sublimit shall not exceed \$150,000 for each injured person.			Each Occurrence *	\$1,000,000
	<input checked="" type="checkbox"/> Public Officials Liability					
	<input checked="" type="checkbox"/> Employment Practices					
	<input checked="" type="checkbox"/> Occurrence					
A, B	Automobile Liability	24C56325-570	1/1/2011	1/1/2012	Each Occurrence *	\$1,000,000
	<input checked="" type="checkbox"/> Scheduled Autos					
	<input checked="" type="checkbox"/> Hired Autos					
	<input checked="" type="checkbox"/> Non-Owned Autos					
A, C	Auto Physical Damage	24C56325-570	1/1/2011	1/1/2012	See below if applicable.	
	<input checked="" type="checkbox"/> Scheduled Autos					
	<input checked="" type="checkbox"/> Hired Autos					
	Excess Liability				General Aggregate	
	<input type="checkbox"/> Other Than Umbrella Form				Each Occurrence *	
A, C	Property	24C56325-570	1/1/2011	1/1/2012	See below if applicable.	
	<input checked="" type="checkbox"/>					

## DESCRIPTION:

Certificate Holder is an Additional Covered Member but only as respect Property as their interest may appear. Certificate Holder is an Additional Covered Member but only as respect to liability for those sums which the Member shall be legally obligated to pay as damage caused by the Member's act or omission, or the acts or omission of those acting on its behalf, in the performance of authorized operations; all acting within the scope of their employment or duties whether arising out of a governmental or proprietary function for property located at 668 38 Road, Pallisade, CO 81526, subject to provisions and limitations contained in C.R.S. 24-10-101. The Pool will limit any amounts to the monetary limits and sublimits of the Colorado Governmental Immunity Act, 24-10-101 et. Seq., as amended, would apply to the Covered Member. Pollution Liability Coverage is \$1,000,000 per Pollution Condition & \$5,000,000 aggregate all Pollution Conditions both are all Members combined.

## CERTIFICATE HOLDER

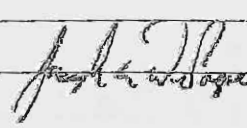
Grand Valley Water Users Association  
1147 24 Road

Grand Junction, CO 81505

CANCELLATION: SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

By: Joseph E. DePaep

Date: 1/19/2011





CERTIFICATE OF COVERAGE					CERTIFICATE NUMBER 273	
<b>ADMINISTRATOR</b>  Colorado Special Districts Property and Liability Pool POB 1539 Portland OR 97207-1539			THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.  <div style="text-align: center;"><b>COMPANIES AFFORDING COVERAGE</b></div>			
<b>NAMED MEMBER</b> Orchard Mesa Irrigation District ATTN: 668 38 Road Palisade, CO 81526			COMPANY A - Colorado Special Districts Property and Liability Pool COMPANY B COMPANY C COMPANY D			
COVERAGES						
THIS IS TO CERTIFY THAT COVERAGE DOCUMENTS LISTED HEREIN HAVE BEEN ISSUED TO THE NAMED MEMBER HEREIN FOR THE COVERAGE PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH COVERAGE DOCUMENTS.						
CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION	LIMITS	
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MAD <input type="checkbox"/> OCCUR <input type="checkbox"/> OWNER'S & CONTRACTORS PROT				GENERAL AGGREGATE PRODUCTS - COMP/OP AGG PERSONAL & ADV. INJURY EACH OCCURRENCE FIRE DAMAGE (Any one fire) MED EXPENSE (Any one person)	
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE	
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EACH ACCIDENT AGGREGATE	
	<b>EXCESS LIABILITY</b> <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE AGGREGATE	
A	<b>WORKERS COMPENSATION AND EMPLOYERS LIABILITY</b>	11W56325-70	1/1/2011	1/1/2012	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER	
					EL EACH ACCIDENT EL DISEASE - POLICY LIMIT EL DISEASE - EACH EMPLOYEE	2,000,000 2,000,000 2,000,000
	<b>OTHER</b>					
<b>DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS (LIMITS MAY BE SUBJECT TO DEDUCTIBLES OR RETENTIONS)</b> Subject to the terms and conditions of the Workers' Compensation Coverage Document.						
<b>CERTIFICATE HOLDER</b>				<b>CANCELLATION</b>		
Grand Valley Water Users Association  1147 24 Road Grand Junction, CO 81505				SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  <div style="text-align: right;">             By: Joseph E. DePaepe  </div>		
VALID AS OF 4/19/2012						

Contract No. 0-07-40-P0180  
Amendment No. 1

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION  
GRAND VALLEY PROJECT  
  
AMENDMENT  
TO CONTRACT NO. 0-07-40-P0180  
LEASE OF POWER PRIVILEGE  
AMONG  
THE UNITED STATES OF AMERICA,  
GRAND VALLEY WATER USERS ASSOCIATION  
AND  
ORCHARD MESA IRRIGATION DISTRICT  
FOR  
THE OPERATION AND MAINTENANCE  
OF THE  
GRAND VALLEY POWERPLANT

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AMENDMENT  
TO CONTRACT NO. 0-07-40-P0180  
LEASE OF POWER PRIVILEGE  
AMONG  
BUREAU OF RECLAMATION,  
GRAND VALLEY WATER USERS ASSOCIATION  
AND  
ORCHARD MESA IRRIGATION DISTRICT FOR  
THE OPERATION AND MAINTENANCE OF THE  
GRAND VALLEY POWERPLANT

THIS Amendment to Contract No. 0-07-40-P0180 is made this 17 day of February, 2011 (the "Effective Date"), pursuant to the Act of June 17, 1902 (32 Stat. 388) and acts amendatory thereof or supplementary thereto, and particularly the Act of August 4, 1939 (53 Stat. 1189) as amended, among the BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, hereinafter referred to as the "United States"; the GRAND VALLEY WATER USERS ASSOCIATION, a corporation organized and existing under laws of the State of Colorado, having its principal place of business at Grand Junction, Colorado, hereinafter referred to as the "Association"; and ORCHARD MESA IRRIGATION DISTRICT, an irrigation district organized and existing under the laws of the State of Colorado, having its principal place of business at Palisade, Colorado, hereinafter referred to as the "District."

PREAMBLE

1. The United States has constructed the Grand Valley Irrigation Project, a Federal Reclamation Project, in Mesa County, Colorado, hereinafter called the Project.
2. The United States, the Association and Public Service Company of Colorado (Company or Xcel Energy) entered into a contract dated June 19, 1931, providing, among other things, for the construction, operation and maintenance, without expenditure of funds by the United States, of a powerplant known as the Grand Valley Powerplant (as defined herein), and appurtenant facilities upon the Project, and which contract, as extended by the interim contract of July 2, 1959, expired on December 30, 1960. Subsequently, the United States, the Association and the Company entered into a similar contract dated December 30, 1960, and said contract was twice extended and modified by including the District as a participant. Said contract expired on December 31, 1990.
3. The United States entered into a Contract for the Lease of Power Privilege with the Company, the Association and the District on December 12, 1990 (Contract), pursuant to the



Act of June 17, 1902 (32 Stat. 388) and acts amendatory thereof or supplementary thereto; and particularly the Act of August 4, 1939 (53 Stat. 1189).

4. On September 4, 1996, a Stipulation and Agreement in Case No. 91CW247, District Court, Water Division No. 5 (State of Colorado), incorporated into the Orchard Mesa Check Case Decree (as defined herein), was entered into between the United States, the Association, the District, and various other entities relating to the operation of the Orchard Mesa Check (as defined herein).

5. Due to the impending closure of the Cameo Generating Station on December 31, 2010, pursuant to Article 38 of the Contract, the Company assigned its rights and responsibilities under the Lease of Power Privilege Contract No. 0-07-40-P0180 to the Association and the District on December 30, 2010, and the United States approved such assignment.

6. The interests of the parties to this Amendment will be best served by the Association and the District providing for the operation and maintenance, including replacements, of the Grand Valley Powerplant and Private Equipment (as defined herein) in accordance with the terms and conditions hereof, without expenditure of funds by the United States.

7. The Association and the District have contracted to operate and maintain and to carry water in Project facilities to the Grand Valley Powerplant for the purposes of generating hydroelectric power at no expense to the United States in accordance with provisions of Contract No. 14-06-400-326, as amended.

8. The Grand Valley Powerplant is a part of the works of the Project and title to all the Project works, including the Grand Valley Powerplant, stands in the name of the United States, except the Private Equipment.

9. The Association and the District have purchased the Private Equipment at the Grand Valley Powerplant from the Company.

10. The Contract must be amended to define the responsibilities of the United States, the Association, and the District, following the Company's assignment of its responsibilities under the Contract.

NOW, THEREFORE, in consideration of the mutual and dependent stipulations and covenants herein contained, the parties to this Amendment agree as follows:

#### CONTRACT SUPERSEDED

1. This Amendment shall amend and supersede the Contract in its entirety.

## DEFINITIONS

2. For the purpose of this Amendment, the following definitions shall apply:

(a) "Association's Irrigation Right" means the water right described in Article 2.(l)2. herein.

(b) "District's Irrigation Right" means the water rights described in Article 2.(l)1. herein.

(c) "Grand Valley Powerplant" means the Grand Valley Powerplant and the appurtenant facilities and land on which they sit, which shall include the powerhouse, machinery, equipment, penstocks, intake structure, trash racks, ice sluiceway, headgates, draft tubes and discharge apron, and all other structures and other property useful in the full and efficient operation of said Powerplant, including the land containing the Private Equipment described hereunder adjacent to said Powerplant; but shall not include the Related Facilities, as defined in Article 2.(n) herein, or the Private Equipment, as defined in Article 2.(k) herein. The Grand Valley Powerplant shares an afterbay with the Pumping Plant.

(d) "Grand Valley Project" or "Project" shall mean the Grand Valley Irrigation Project, a Federal Reclamation Project, in Mesa County, Colorado, consisting of the Garfield Gravity Division and the Orchard Mesa Division. Both the Garfield Gravity Division and the Orchard Mesa Division divert water from the Colorado River at the Project's diversion dam on the Colorado River. The irrigation water for the Garfield Gravity Division is then conveyed through the Government Highline Canal and delivered by gravity to other laterals within the Grand Valley Project pursuant to contract with the Association. The irrigation water for the Orchard Mesa Division is conveyed through the Government Highline Canal and the Orchard Mesa Power Canal to the Pumping Plant, where it is pumped for distribution to the lands of the District (see Exhibit A).

(e) "Interconnection Agreement" means the Small Generator Interconnection Agreement between Public Service Company of Colorado, d/b/a Xcel Energy, and the Association and the District dated February 15, 2011, relating to the Grand Valley Powerplant, and any future amendments and extensions thereto or replacements thereof.

(f) "Orchard Mesa Check" or "Check" means the Orchard Mesa Check, consisting of three water level control gates and the bypass channel by which the water level in the common afterbay of the Grand Valley Powerplant and the District's pumping plant, known as the Pumping Plant (as defined herein), can be raised to a level which causes water to flow through the bypass channel and return to the Colorado River immediately upstream of the Grand Valley

Irrigation Company (GVIC) diversion dam, and shall include any replacement structure in the same location which performs the same function.

(g) "Orchard Mesa Check Case Decree" means the Findings of Fact, Conclusions of Law, Judgment and Decree entered on October 1, 1996, in Case No. 91CW247, District Court, Water Division 5, State of Colorado, including without limitation the Stipulation and Agreement attached thereto as Attachment 1 and incorporated therein by reference.

(h) "Ordinary Operation and Maintenance" means the ongoing actions, work and other activities necessary to operate the Grand Valley Powerplant and the Related Facilities to produce hydroelectric power and to maintain them in good and efficient operating condition. Ordinary Operation and Maintenance includes all maintenance other than Replacement Maintenance, as defined in Article 2.(o) herein.

(i) "Power Purchase Agreement" means the Energy Purchase Agreement between Public Service Company of Colorado and the Association and the District dated February 11, 2011, relating to the Grand Valley Powerplant and any future amendments and extensions thereto or replacements thereof.

(j) "Power Right" means the water right described in Article 2.(l)3. herein.

(k) "Private Equipment" means all equipment provided by the Association and the District for the control, transformation, distribution and metering of power from the Grand Valley Powerplant. A list of the Private Equipment that exists as of the Effective Date is attached hereto as Exhibit B.

(l) "Project Water Rights" means:

(1) The right of the District to divert up to 460.2 cubic feet per second (cfs) of water through the headgate of the Government Highline Canal under priority dates of October 1, 1900, and October 25, 1907, for irrigation purposes and for operation of the Pumping Plant;

(2) The right of the Association to divert up to 730 cfs of water through the headgate of the Government Highline Canal under priority date of February 27, 1908, for irrigation purposes; and

(3) The right of the United States to divert up to 400 cfs of water through the headgate of the Government Highline Canal under the originally-decreed priority date of February 27, 1908, for power generating purposes during the irrigation season and up to 800 cfs of water during the non-irrigation season. The priority date for this water right will be as stipulated in the Orchard Mesa Check Case Decree.

- (4) Any water from other sources that may from time to time be available for power generation.
- (m) "Pumping Plant" means the hydro pumping facility of the District used to lift water to the canals serving the lands within the District, which Pumping Plant shares an afterbay with the Grand Valley Powerplant.
- (n) "Related Facilities" means the facilities used to divert and transport water to the Grand Valley Powerplant and to return such water to the Colorado River after power has been produced. Related Facilities include, without limitation, the Grand Valley Project Diversion Dam and appurtenant works, the Government Highline Canal from the Diversion Dam to a point near Tunnel No. 3, the Colorado River Siphon, the District's Power Canal, the forebay to the Grand Valley Powerplant and the common afterbay of the Grand Valley Powerplant and the Pumping Plant.
- (o) "Replacement Maintenance" means replacement of major Grand Valley Powerplant components, including, but not limited to, turbines, generators, penstocks and governors, and replacement of or major improvements to the Related Facilities, because of an exhausted physical condition or obsolescence which requires the purchase of new major components or improvements to existing components.

#### LEASE OF POWER PRIVILEGE

3. Subject to the conditions and terms herein, the United States leases to the Association and the District, with the right of ingress and egress, the exclusive right to utilize the Grand Valley Powerplant to produce and sell hydroelectric power and for the purposes of performing the provisions of this Amendment.

#### TERM OF CONTRACT

4. This Amendment shall become effective on the Effective Date and shall remain in force until January 1, 2031, unless terminated by mutual consent among the parties to this Amendment or by default or cancellation under provisions of this Amendment.

#### UNITED STATES EXPENSES

5. (a) When required by the United States, the Association and the District shall advance funds in minimum increments of \$10,000 (Incremental Advance) to the United States to pay major future expenses which may be incurred by the United States under this Amendment. Funds advanced will be paid by the Association and the District in the same proportion as outlined in Article 6 herein. Expenses shall include an hourly rate, travel, materials, mailing, copying costs, and administration overhead costs at the then current rate, as incurred by the United States personnel, contractors or consultants; provided, however, that no charge shall be assessed for information,

services, or relationships that would normally be provided by the United States to the public at no charge. United States expenses under this Amendment may include, but are not limited to, the following:

- (1) Environmental compliance.
- (2) Inspections of the Grand Valley Powerplant called for by the United States, either routine or based upon a unique problem, major rehabilitation, or a reasonable concern for the integrity of a Federal structure or operation of other Grand Valley Powerplant features.
- (3) Preparation or review of technical studies.
- (4) Review of designs, specifications, legal and other documents.
- (5) Site visits and participation in meetings.
- (6) Copies of reports, drawings, and similar data.
- (7) Consultation, observation, review, and comment on tests of piping, valving, automated equipment, supervisory control systems, and any and all other aspects of construction, operation, maintenance and replacement that might impact the integrity of a Federal structure or environmental commitments.
- (8) Work necessitated by non-performance of the Association and the District.
- (9) The expenses incurred in the event of failure of Federal structures resulting from operations and/or maintenance of the Grand Valley Powerplant.
- (10) All administrative costs incurred in the execution of the above-listed activities.

(b) The United States will establish a non-interest bearing account for the funds advanced by the Association and the District; an initial advance of \$10,000 will be required upon execution of this Amendment. At such time when funds in the account are anticipated to be reduced to or below \$5,000, the United States will request an Incremental Advance of funds as provided in Article 5.(a) herein. The United States will not pay or credit the Association and the District for any interest. When performing work identified in Article 5.(a) herein, the United States will furnish the Association and the District, not less than on a quarterly basis prior to completion of the activity, an accounting of activity, an itemization of all expenses incurred under Article 5 herein, and a reconciliation of such expenses billed with the amounts requested under Article 5 herein. After completion of the activity an accounting of expenses will be furnished to the Association and the District on an annual basis or upon request of further Incremental Advances.

(c) Each request for an Incremental Advance of funds under Article 5 herein shall be in writing and shall include a statement describing the anticipated use of the requested funds. The United States will discuss with the Association and the District in advance of requesting funds to identify anticipated activities related to the Grand Valley Powerplant. The Association and the District shall advance the requested funds within 30 days after receiving the request.

(d) Following the expiration, cancellation or termination of this Amendment, the United States will determine its expenses associated with the Grand Valley Powerplant and submit a final accounting report to the Association and the District

within sixty days after the date of expiration, cancellation or termination. The United States will refund to the Association and the District any surplus in the account within 60 days after submitting the final accounting report. The Association and the District shall pay any deficit in the account within 60 days after receipt of the final accounting report.

#### LEASE PAYMENTS TO THE UNITED STATES

6. (a) Annual lease payments shall be made to the United States for the use of the Grand Valley Powerplant. Annual lease payments shall be determined by multiplying the total number of kilowatt hours of generation in a calendar year by the mill levy assessment. Total kilowatt hours of generation shall be based upon the meter reading as referenced in Article 15 herein. The initial mill levy assessment shall be 3 mills. Annually, the mill levy assessment shall be increased by 3 percent. The Association and the District shall each pay their proportional share of the total annual lease payment to the United States as follows:

Association: Fifty Percent (50%)

District: Fifty Percent (50%)

(b) Each payment shall be made on or before April 1 in each year for the total generation during the prior calendar year as reported in Article 10 herein. The United States will send an invoice for lease payments to the Association and the District at least 30 days prior to their due date. Invoices will be mailed to the Association and the District as specified in Article 26 herein.

(c) Lease Payments to the United States shall reference this Amendment by title and number. The Bureau of Reclamation will provide a billing document to the Association and to the District. Payment will be made payable to the "Bureau of Reclamation," and payment instructions will be followed as stated in the billing document, unless directed otherwise by the United States.

(d) The obligation for payments by the Association and the District in Article 6.(a) herein is separate and default in payment by one entity shall not be deemed a default by the other entity nor shall the other entity be obligated to assume the burden of the defaulting entity.

#### OPERATIONS AND MAINTENANCE PLAN

7. (a) On or before June 1, 2011, the Association and the District shall prepare and submit to the United States for its review and concurrence an operations and maintenance plan (Operations and Maintenance Plan) for the Grand Valley Powerplant. The Operations and Maintenance Plan will contain as a minimum the following:

(1) Operating procedures for major equipment.

- (2) Procedures for meeting emergencies.
- (3) Description and schedule for all anticipated Replacement Maintenance of items greater than \$50,000.
- (4) Description and schedule for all anticipated improvements to the Grand Valley Powerplant and to the Related Facilities.

(b) Annually, by June 1 of each year, the Association and the District shall review and, if necessary, update the Operations and Maintenance Plan to reflect changes to operating procedures, changed emergency procedures, new Replacement Maintenance schedules and new schedules for improvements to the Grand Valley Powerplant and the Related Facilities and shall submit the updated Operations and Maintenance Plan to the United States for review and concurrence.

(c) The United States shall concur with the Operations and Maintenance Plan and any updates thereto so long as:

- (1) The concurrence and the performance or effectuation of such submission will not have a material adverse impact on the Project; and
- (2) Required NEPA (National Environmental Policy Act) compliance for implementation of the proposed activity and associated concurrence has been completed; and
- (3) Such proposed activity otherwise complies with Federal law, applicable standards, contracts, and this Amendment.

In the event the United States determines that any submission or any portion thereof does not satisfy the foregoing criteria, the United States shall provide the Association and the District with a written notice describing such defect in reasonable detail. The United States may concur with any submission in whole or in part and may reject any portion of a submission without rejecting the whole.

(d) The United States' reviews and concurrences are to ensure, to the extent that the Grand Valley Powerplant is an integral part of the Project, that its operation, maintenance and replacement will not adversely affect the structural or operational soundness, or jeopardize the safety or operational requirements of the Project, and that those properties to which the United States retains title are adequately maintained and protected.

#### ENVIRONMENTAL COMPLIANCE

- 8. (a) National Environmental Policy Act (NEPA) compliance has been completed by the United States for this Amendment.
- (b) The Association and the District, in their Ordinary Operation and Maintenance and Replacement Maintenance of the Grand Valley Powerplant, shall comply with Federal and State environmental laws and regulations including, but not limited to, the storage and disposal of hazardous waste.

## POWERPLANT OPERATION, MAINTENANCE AND REPLACEMENT

9. (a) The Association and the District, on the Effective Date of this Amendment, shall assume the operation and maintenance of the Grand Valley Powerplant and will operate and maintain said Powerplant for the term of this Amendment, performing all Ordinary Operation and Maintenance and Replacement Maintenance at their own expense, in accordance with accepted operation practices, procedures and standards of the industry, and in such a manner that the Grand Valley Powerplant will be returned at the expiration, cancellation or termination of this Amendment in as good a condition as when the Association and the District assumed operation and maintenance under this Amendment, reasonable wear excepted.
- (b) The Association and the District shall not operate or make any modifications to the Grand Valley Powerplant which could adversely affect the structural or operational soundness, jeopardize the safety, or adversely affect the operation of the Project.
- (c) Representatives of the parties to this Amendment shall make a scheduled inspection of the Grand Valley Powerplant and Private Equipment at least once a year, and shall confer at least once each calendar year to review the Association and the District's past operation and maintenance of the Grand Valley Powerplant and Private Equipment and establish maintenance and replacement schedules for the ensuing calendar year.
- (d) The United States acknowledges that the Association and the District have entered into the Power Purchase Agreement, relating to the sale of energy produced by the Grand Valley Powerplant, and the Interconnection Agreement, relating to the interconnection of the Grand Valley Powerplant to the electric system of Public Service Company of Colorado, d/b/a Xcel Energy, and that the Association and the District have obligations to operate and maintain the Grand Valley Powerplant in accordance with the provisions of those agreements. All costs incurred by the Association and the District to comply with the provisions of this Amendment, the Power Purchase Agreement and the Interconnection Agreement shall be considered, for purposes of this Amendment, to be part of the costs of Ordinary Operation and Maintenance of the Grand Valley Powerplant.

## REPORTS AND INSPECTIONS

10. (a) The Association and the District shall keep records, on a monthly basis, of the power generation in kilowatt hours at the Grand Valley Powerplant. On or before February 1 in each year beginning in 2012, the Association and the District shall furnish to the United States a report showing the monthly power generation in kilowatt hours at the Grand Valley Powerplant for the prior calendar year.



(b) The Association and the District agree that authorized agents of the United States shall have access to the Grand Valley Powerplant and Private Equipment at all reasonable times for the purpose of inspection, and further agree to permit such agents access to the operation, maintenance and replacement records of said Powerplant and Private Equipment.

#### PRIVATE EQUIPMENT

11. (a) The Association and the District shall provide, at their own expense, the Private Equipment needed for the control, distribution and sale of power from the Grand Valley Powerplant.

(b) The Association and the District, at their own expense, shall operate, maintain and replace the Private Equipment, keeping it in operable condition during times that the Grand Valley Powerplant is in operation.

#### DELIVERY OF WATER FOR POWER

12. Subject to the provisions of Article 13 herein, all water available to the Association and District in excess of that decreed for Project irrigation and pumping purposes, the Power Right and any other water that may be available to the Association and the District for power purposes, within the restrictions of the carrying capacity of the Project canals, shall be delivered by the Association and the District to the Grand Valley Powerplant. The Association and the District shall utilize such water up to the full capacity of the Grand Valley Powerplant, subject to the provisions of this Amendment. Nothing in this Amendment shall obligate the Association or the District to make water diverted or available under the Association's Irrigation Right or the District's Irrigation Right available for the production of power, and in times of shortage, the Association's Irrigation Right and the District's Irrigation Right shall always have priority for diversion and use over the Power Right or any other water available for production of power.

#### ADMINISTRATION OF PROJECT WATER RIGHTS

13. The Project Water Rights shall be administered in accordance with the following:

(a) The parties to this Amendment acknowledge that the GVIC has the right to divert 520.81 cfs of water for irrigation purposes under priority date of August 22, 1882, through the headgate of the GVIC Canal, which water right is senior to all of the Project Water Rights. The parties to this Amendment further acknowledge that GVIC has the right to divert 119.47 cfs of water for irrigation purposes under adjudication date of July 25, 1941, and appropriation date of April 26, 1914, through the headgate of the GVIC Canal. By use of the Check, some or all of the water needed to satisfy GVIC's water rights described above can be diverted by exchange through the Orchard Mesa power canal and utilized for power generation or pumping purposes and returned to the Colorado River upstream of the GVIC Diversion Dam for use by

GVIC, subject to the provisions, terms and conditions of the Orchard Mesa Check Case Decree.

(b) The parties to this Amendment acknowledge that the Association has certain contractual obligations to transport 23.5 cfs of irrigation water for the Palisade Irrigation District, which obligations are subject to that amount of water being available in priority from water flowing in the Colorado River and space being available for transportation of that water right in the Government Highline Canal, the most limiting structure in said canal being Tunnel No. 3.

(c) The obligation to carry more than 400 cfs of the District's Irrigation Right is subordinate to the obligation to carry the 23.5 cfs of irrigation water for the Palisade Irrigation District.

(d) The parties to this Amendment also acknowledge that the United States and Association are obligated by contract to transport 80 cfs of irrigation water for the Palisade Irrigation District and 40 cfs of irrigation water for the Mesa County Irrigation District and that the obligation to transport such water takes precedence over transportation of the Project Water Rights in the Government Highline Canal.

(e) Pursuant to and subject to the provisions, terms and conditions of the Orchard Mesa Check Case Decree, water can be diverted by exchange at the diversion dam of the Project, transported through the Government Highline Canal and returned to the Colorado River by the operation of the Check. Such water can be utilized to furnish water for generation of power at the Grand Valley Powerplant and for operation of the District's Pumping Plant. The parties to this Amendment agree to operate the Check in a manner consistent with the Orchard Mesa Check Case Decree.

(f) At such times as the supply of water in the Colorado River is insufficient to fill the Project Water Rights, or at such time as the capacity of the Government Highline Canal is insufficient to carry the 80 cfs of irrigation water for the Palisade Irrigation District and the 40 cfs for the Mesa County Irrigation District and all of the Project Water Rights, the Power Right will be first reduced before any reduction is made to the Association's Irrigation Right and to the District's Irrigation Right.

(g) The District agrees that it will make no claim against the Association or the United States for the expenses incurred by the District resulting from implementation of the Check for the purposes specified in Article 13.(e) herein. Notwithstanding the provisions of Article 13.(e), this Amendment shall never be construed to obligate the District to utilize the Check to satisfy the priorities of any third party which are junior to and subordinate to the Project Water Rights.

(h) Nothing in this Amendment is meant to conflict with the Orchard Mesa Check Case Decree and, if inconsistencies exist, the provisions of the Orchard Mesa Check Case Decree shall prevail.

### INTERRUPTIONS IN DELIVERY OF WATER

14. (a) The water to be made available to the Grand Valley Powerplant shall be continuous as far as due diligence will permit, with no liability for damages incurred when by reason of uncontrollable forces, suspension of the diversion of water to the canal system or any part thereof interferes with delivery of water at the Grand Valley Powerplant. The term "uncontrollable forces," for purposes of this Amendment, means any cause beyond the control of the parties to this Amendment affected, including, but not limited to failure of facilities, flood, earthquake, storm, lightning, inclemencies of the season, fire, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority which, by exercise of due diligence and foresight, such parties to this Amendment could not reasonably be expected to avoid. Inability to fulfill any obligation of this Amendment caused by uncontrollable forces shall be removed with all reasonable dispatch.
- (b) The Association, the District and the United States, whichever is operating the Project, shall have the right to cease delivery of water to the Grand Valley Powerplant temporarily whenever it shall become necessary to make repairs, replacements or additions to the Related Facilities with no liability for damages and shall give reasonable notice to each party to this Amendment of such temporary suspension of service. All such repairs, replacements and additions will be made with best efforts and diligence so that water will be available at the Grand Valley Powerplant without undue delay.

### MEASUREMENT OF ENERGY

15. As part of the Company's assignment of interests and responsibilities to the Association and the District, new meters to measure energy production have been installed. These meters are the property of Xcel Energy and will be operated and maintained by Xcel Energy, as provided for in the Interconnection Agreement.

### FAILURE TO MAKE PAYMENTS

16. Upon failure of the Association and the District to pay any sum of money when due, as provided in this Amendment, that amount due shall bear interest at a rate which is four percent (4%) per annum over the Federal Reserve Bank discount rate in effect on the due date until paid in full.

### DEFAULT; REMEDIES; CANCELLATION

17. (a) Each or any of the following events shall constitute default under this Amendment.
- (1) Failure of any party to this Amendment to comply with each and every material condition of this Amendment;
  - (2) Abandonment of the Grand Valley Powerplant by the Association and the District;

- (3) Abandonment of all or part of that portion of the Grand Valley Irrigation Project essential to the operation of the Grand Valley Powerplant, by the United States and/or the Association and the District; or
- (4) Failure or refusal to pay when due any sum required by this Amendment.

(b) Any party to this Amendment not in default may give written notice to the defaulting party, as defined Article 17.(a)(1) through (4) herein, and the defaulting party shall then be entitled to correct the default condition specified in the notice as follows: If the default is for failure to pay money, the money plus interest must be paid within 60 days to correct the default. If the money plus interest is not paid within 60 days, then the defaulting party shall be subject to the provisions of Article 17.(f) herein. If the default is for something other than for failure to pay money, the defaulting party shall have a reasonable time to correct the default if the action necessary to correct the default is commenced within thirty (30) days after the notice and if full correction of the default is diligently pursued to conclusion. If the action is not commenced within the 30 days, or if the action is timely commenced but not diligently pursued to full correction of the default, then the defaulting party shall be subject to the provisions of Article 17.(f) herein.

(c) Failure on the part of the part of the Association and the District to operate the Grand Valley Powerplant without just cause or to maintain the Grand Valley Powerplant in good condition and repair shall be considered to be abandonment of the Grand Valley Powerplant.

(d) The United States reserves the right to cancel all or any part of this Amendment in the event of failure by the Association and the District to comply with any written directive or instruction of the United States pertaining to any requirement under this Amendment, actual or threatened material impairment of the Project caused by the operation of the Grand Valley Powerplant, failure to maintain insurance, failure to make payments to the United States, or any other default by the Association and the District, after notice and failure to timely correct the condition as provided in Article 17.(b) herein.

(e) Any prevention, delay, nonperformance, or stoppage due to an act of nature or inability to obtain labor or materials or reasonable substitutes for either shall excuse nonperformance for a period equal to any such prevention, delay, nonperformance, or stoppage, except obligations for the payment of monies due under this Amendment.

(f) Each party to this Amendment may use any remedy available either at law or in equity against a party in default hereof. The waiver of a default or a provision of this Amendment shall not be deemed to be a waiver of any other provision or of a subsequent default of the same provision.

(g) If by reason of an act of default on the part of either the Association or the District, the United States has the right to and elects to cancel this Amendment with respect to the defaulting party pursuant to the provisions of Article 17 herein, then the

non-defaulting party shall have the right and option to assume without charge the obligations and rights of the defaulting party under this Amendment. If the non-defaulting party elects to assume the position of the defaulting party to operate the Grand Valley Powerplant, then effective the date this Amendment is cancelled and terminated with respect to the defaulting party the other party shall assume and agree to perform all of the provisions of this Amendment which accrue or are to be performed subsequent to the date of cancellation and, at that time, it shall assume and agree to perform all provisions of this Amendment otherwise required to be performed by both the Association and the District, including, but not limited to, the obligation to pay the United States all payments which subsequently accrue pursuant to Articles 5 and 6 herein.

### INSURANCE

18. (a) The Association and the District shall maintain workmen's compensation insurance on their own employees as may be necessary to comply with current applicable law.
- (b) The Association and the District shall, at their sole cost and expense, keep or cause the Grand Valley Powerplant to be kept insured for the mutual benefit of the United States, the Association and the District, against loss or damage by fire, flood, and such other risks as are now or hereafter included in an extended coverage endorsement in common use for hydroelectric powerplants. Insurance proceeds shall be used by the Association and the District to replace or repair the compensated loss, subject to review and concurrence by the United States.
- (c) Throughout the term of this Amendment, the Association and the District shall, at their sole cost and expense, keep or cause to be kept in force, for the benefit of the United States, the Association and the District, comprehensive broad form general public liability insurance in the amount of at least \$2,000,000 against claims and liability for personal injury, death, or property damage arising from the use, occupancy, disuse, or conditions of the Grand Valley Powerplant and, adjoining areas or ways, providing coverage for bodily injury or death to any person or persons for each accident or occurrence; and for property damage for each accident or occurrence.
- (d) The amount of insurance coverage shall be adjusted annually by the insurance company based upon accepted standard adjustment practices.
- (e) For each policy or certificate evidencing insurance, the Association and the District shall instruct the insurance company to notify the United States not less than 30 days prior to the effective date of any cancellation, termination, or assignment of the policy or certificate or any modification of the policy or certificate. The notice shall be sent to the United States and shall identify the Amendment, the policy and the insured.

(f) The Association and the District agree to maintain insurance coverage as stated in Article 18 herein throughout the term of this Amendment in substantially the same form and amounts as are provided for in the attached certificates of insurance identified as and made a part thereof.

(g) Any insurance proceeds remaining after complying with the provisions of this Amendment shall be the Association and the District's sole property.

#### INDEMNITY

19. (a) The Association agrees to indemnify the United States for any injury, loss or damage incurred by the United States resulting from the failure of the Association to properly operate and maintain the Association's facilities associated with delivery of water to the Grand Valley Powerplant.

(b) The District agrees to indemnify the United States for any injury, loss or damage incurred by the United States resulting from the failure of the District to properly operate and maintain the District's facilities associated with delivery of water to the Grand Valley Powerplant.

(c) Notwithstanding Articles 19.(a) and (b) herein, no party to this Amendment shall be liable to any other party for any injury, loss or damage to the extent that such is caused by the negligence of another party or parties other than the Association, the District or the United States, including their officers, agents, contractors or employees.

(d) The United States shall in no way be liable for the operations of the Association or the District under this Amendment.

(e) The United States shall not be liable for any review, inspection, or concurrence which it may perform or fail to perform under the terms of this Amendment.

(f) Each party to this Amendment will be responsible for acts or omissions of its contractors.

(g) Nothing in this Amendment shall be construed as releasing the United States from liability for its own negligence; *Provided*, That nothing herein shall be deemed to increase the liability of the United States beyond the provisions of the Federal Tort Claims Act, Act of June 25, 1948, 62 Stat. 982 (28 U.S.C. § 1346(b), 2671 *et seq.*) or other applicable law.

#### TERMINATION

20. This Amendment may be terminated 1) by mutual consent of the parties to the Amendment; or 2) in the event that the amount of Power Revenues (as defined in Article 22 herein) is insufficient for the Association and the District to satisfy their respective obligations under this Amendment. Prior to terminating this Amendment

because of insufficient Power Revenues, the parties shall meet and discuss, in good faith, mutually acceptable alternatives to address the insufficient revenues and maintain this Amendment in full force and effect. If the parties are not able to mutually agree on such alternatives, either the United States or the Association and the District may then terminate this Amendment on ninety (90) days' notice to the other party or parties. Upon termination of this Amendment under this Article, operation of the Grand Valley Powerplant shall revert to the title holder, the United States. The United States will assume operation and maintenance of the Grand Valley Powerplant, initiate the lease of power privilege process, or cease operations of the Grand Valley Powerplant.

#### DUTY TO SURRENDER

21. (a) If, after expiration of the term of this Amendment, cancellation of this Amendment due to default by the Association and the District or other termination of this Amendment the United States elects to retain the Grand Valley Powerplant for its own use or lease to someone or some entity other than the Association and the District, the Private Equipment may be purchased by the United States for book value of the Private Equipment which is defined as original cost less accumulated depreciation. Said option shall be exercised by payment of the book value by the United States to the Association and the District on or before the date of expiration, cancellation or termination. The book value of the Private Equipment shall be quoted by the Association and the District upon demand.
- (b) In the event, during the term, or upon expiration of this Amendment, it is no longer feasible to operate the Grand Valley Powerplant as determined by the parties to this Amendment or upon cancellation or termination of this Amendment, and the option to purchase in Article 21.(a) herein is not exercised, the Private Equipment will be removed from Federal lands at the option of the United States. Such removal shall be at the sole expense of the Association and the District within a reasonable period of time and as approved by the United States.
- (c) Upon cancellation or termination, any remaining lease payments shall be determined as of the date of cancellation or termination in the same manner as set forth in Article 6 herein, and payment shall be made within 60 days of the date of cancellation or termination. Any other remaining debts shall be the responsibility of the incurring party unless otherwise provided for in this Amendment.

#### DISTRIBUTION OF REVENUES

22. (a) All power revenues received by the Association and the District from the Grand Valley Powerplant hydroelectric operations ("Power Revenues") shall be applied in the following order of priority:

- (1) To make lease payments to the United States under Article 6 herein and payments for Incremental Advances to the United States under Article 5 herein.
- (2) To pay the annual Ordinary Operation and Maintenance costs of the Grand Valley Powerplant, and the annual Ordinary Operation and Maintenance costs of the Related Facilities to the extent the Related Facilities are used to transport water to the Grand Valley Powerplant and to return that water to the Colorado River.
- (3) To create and maintain the Powerplant Reserve Account (see Article 23 herein).
- (4) To create and maintain the Powerplant Rehabilitation and Replacement Account (see Article 23 herein).
- (5) To be retained by the Association and the District and used in the manner and for the purposes specified in Article 22.(b) herein.

(b) All Power Revenues received by the Association and the District from the Grand Valley Powerplant hydroelectric operations that are not used for the purposes specified in Articles 22.(a)(1) through (4) herein ("Excess Power Revenues") shall be retained by the Association and the District and used as follows:

- (1) One-half of the Excess Power Revenues shall be retained by the Association and shall be used by the Association to operate, maintain, repair, make replacements to and improve the Garfield Gravity Division of the Project.
- (2) One-half of the Excess Power Revenues shall be retained by the District and shall be used by the District to operate, maintain, repair, make replacements to and improve the Orchard Mesa Division of the Project.

#### POWERPLANT RESERVE AND REHABILITATION AND REPLACEMENT ACCOUNTS

23. (a) The Association and the District shall create and maintain a Powerplant Reserve Account, which will be funded and used as follows:

- (1) The Association and the District shall create a single account that shall be known as the "Powerplant Reserve Account."
- (2) On or before February 28, 2013, the Association and the District shall deposit into the Powerplant Reserve Account from the Power Revenues an amount equal to the sum of the Ordinary Operation and Maintenance expenses (but not including Replacement Maintenance expenses) for the Powerplant for the calendar year 2012 and the annual lease payment due to the United States for the calendar year 2012. This amount shall be referred to in Article 23.(a) herein as the "Annual O&M Base Amount."
- (3) Subject to the provisions of Article 23.(a)(4) through (7) herein, the Association and the District shall maintain in the Powerplant Reserve Account an amount at least equal to the Annual O&M Base Amount, increased or decreased annually by the change in the Consumer Price Index for All Urban Consumers (CPI-U) for the Denver-Boulder-Greeley, Colo., metropolitan



area. If in the future such index no longer exists, the parties to this Amendment shall choose a similar index to replace it.

- (4) The Association and the District shall be entitled to use the funds in the Powerplant Reserve Account for Replacement Maintenance expenses, improvements to the Grand Valley Powerplant and the Related Facilities, and for emergency or other unexpected costs related to the operation, maintenance and improvement of the Grand Valley Powerplant and the Related Facilities; *Provided*, That the funds in the Powerplant Reserve Account are used for these general purposes in a manner consistent with the Operations and Maintenance Plan described in Article 7 herein. The specific projects or uses of the funds in the Powerplant Reserve Account shall be determined at the discretion of the Association and the District, also in a manner consistent with the Operations and Maintenance Plan described in Article 7 herein.
- (5) If the Association and the District use funds from the Powerplant Reserve Account during a calendar year, they shall replenish the Powerplant Reserve Account no later than February 28 of the following calendar year.
- (6) The Association and the District shall be entitled to use the Power Revenues to fund, replenish and otherwise maintain the Powerplant Reserve Account.
- (7) The Association and the District shall be entitled to let the interest earned on the funds in the Powerplant Reserve Account accrue to the Powerplant Reserve Account or to transfer any or all of such interest to the Powerplant Rehabilitation and Replacement Account, described in Article 23.(b) herein, at their discretion.

(b) The Association and the District shall create and maintain a Powerplant Rehabilitation and Replacement Account, which will be funded and used as follows:

- (1) The Association and the District shall create a single account that shall be known as the "Powerplant Rehabilitation and Replacement Account."
- (2) The Powerplant Rehabilitation and Replacement Account shall be funded from the Power Revenues, from interest earned on funds in the Powerplant Reserve Account, from interest earned on the funds in the Powerplant Rehabilitation and Replacement Account, and from funds from any other sources that the Association and the District determine at their discretion to deposit into the Powerplant Rehabilitation and Replacement Account. The amount of Power Revenues and other funds to be deposited into the Powerplant Rehabilitation and Replacement Account each year shall be determined by the Association and the District based on funding needs for anticipated Replacement Maintenance consistent with the Operations and Maintenance Plan developed in accordance with Article 7 herein, and for anticipated improvements to the Grand Valley Powerplant and the Related Facilities.
- (3) Subject to the provisions of Article 23.(b)(4) herein, the Association and the District shall use the funds in the Powerplant Rehabilitation and Replacement Account to improve the Powerplant and the Related Facilities and for Replacement Maintenance on the Grand Valley Powerplant; *Provided*, That

the funds in the Powerplant Rehabilitation and Replacement Account are used for these general purposes, the specific projects or uses of the funds in the Powerplant Rehabilitation and Replacement Account shall be determined at the discretion of the Association and the District.

- (4) If the Association and the District determine, in the exercise of their reasonable discretion, that some or all of the funds in the Powerplant Rehabilitation and Replacement Account are no longer needed to improve the Grand Valley Powerplant or the Related Facilities or for Replacement Maintenance, they shall be entitled to transfer the excess funds in the Powerplant Rehabilitation and Replacement Account to each of them, one-half to the Association and one-half to the District. Such excess funds that are transferred to the Association and the District shall be used for the purposes specified in Article 22.(b) herein.

(c) If the Association and the District fail to maintain either the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund in accordance with the provisions of Article 23 herein, this shall be construed as default under this Amendment as specified in Article 17.(a)1. herein.

(d) Upon expiration of the term of this Amendment or upon any cancellation or termination of this Amendment, any amounts then remaining in either the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund, after fulfillment of obligations under this Amendment, shall be disbursed one-half to the Association and one-half to the District.

(e) The amounts required to be maintained in the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund may be adjusted from time to time as mutually agreed to by the United States, the Association and the District.

#### STATEMENT OF COSTS

24. The Association and the District shall submit annually to the United States, on or before June 30 of each year that this Amendment is in effect, an accounting showing Power Revenues received during the preceding calendar year and how such Power Revenues were applied during the preceding calendar year.

#### AUDIT

25. (a) The parties to this Amendment shall maintain accurate records and books of account in accordance with generally accepted accounting principles and consistent with this Amendment. Said books and records shall present fairly all costs and expenses utilized either directly or indirectly in computing any charges or payments to the other parties to this Amendment.
- (b) Upon 30 days written notice each party to this Amendment shall afford the other party or its independent auditors reasonable access to the relevant records and books

of account during the term of the Amendment, and for a period of twenty-four months thereafter.

(c) The party to this Amendment that requests the audit under Article 25.(b) herein will be solely responsible for its own costs incurred to perform the audit.

#### NOTICES

26. (a) Any notice authorized or required to be given to the Association shall be delivered to or mailed postage prepaid to the Manager, Grand Valley Water Users Association, 1147 24 Road, Grand Junction, Colorado 81505. Any notice authorized or required to be given to the District shall be delivered to or mailed postage prepaid to the Manager, Orchard Mesa Irrigation District, 668 38 Road, Palisade, Colorado 81526. Any notice authorized or required to be given to the United States shall be delivered to or mailed postage prepaid to the Area Manager, Bureau of Reclamation, 2764 Compass Drive Suite 106, Grand Junction, Colorado 81506. Notice shall be effective on the date of delivery or mailing.

(b) The designation of the addresses or the addresses given above may be changed by notice given in the same manner as provided in Article 26 herein for other notices.

#### RULES, REGULATIONS AND DETERMINATIONS

27. (a) The parties to this Amendment agree that the delivery of water or the use of Federal facilities pursuant to this Amendment is subject to Reclamation law, as presently amended and supplemented, and the rules and regulations promulgated by the Secretary of the Interior under Reclamation law.

(b) The United States shall have the right to make determinations necessary to administer this Amendment that are consistent with the laws of the United States of America and the State of Colorado, and the express and implied provisions of this Amendment, and the rules and regulations promulgated by the Secretary of the Interior. Such determinations shall be made in consultation with the parties to this Amendment.

#### ENTIRETY CLAUSE

28. This Amendment constitutes the entire agreement between and among the parties to this Amendment with respect to the subject matter hereof and after the Effective Date hereof, shall supersede all prior agreements, contracts and understandings, written or oral, with respect to such subject matter. The parties to this Amendment acknowledge that the Association and the District intend to enter into a separate Operating Agreement between those two entities to set forth agreed procedures for their joint operation of the Grand Valley Powerplant. The Association and the District will provide a copy of the Operating Agreement to the United States after it is

executed by them. If there are any conflicts between the provisions in the Operating Agreement and this Amendment, this Amendment shall control.

#### OFFICIALS NOT TO BENEFIT

29. No member of or delegate to Congress or Resident Commissioner or officer of the Association or the District shall be admitted to any share or part of this Amendment or to any benefit that may arise herefrom, other than as a water user or landowner in the same manner as other water users or landowners or as a shareholder in the company.

#### AMENDMENT

30. This Amendment may not be amended, altered, or modified except in writing and must be signed by all of the parties to this Amendment.

#### SEVERABILITY

31. If any provisions of this Amendment or the application thereof to any person or circumstances shall be invalid or unenforceable to any extent, the remainder of this Amendment and the application of such provisions to other persons or circumstances shall not be affected thereby and may be enforced to the greatest extent permitted by law.

#### ASSIGNMENT LIMITED—SUCCESSORS AND ASSIGNS OBLIGATED

32. The provisions of this Amendment shall apply to and bind the successors and assigns of the parties to this Amendment, but no assignment or transfer of this Amendment or any right or interest therein shall be valid until approved in writing by the United States.

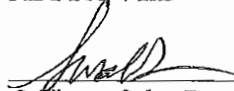
#### LIMITATION OF LIABILITY

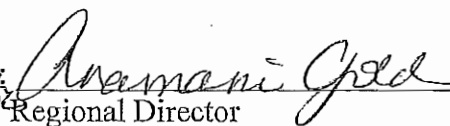
33. Subject to Article 19 herein, the liability of the Association and the District for their obligations under this Amendment, including without limitation, their obligations to operate and maintain the Grand Valley Powerplant, to perform Replacement Maintenance, to return the Grand Valley Powerplant in as good condition as when received, reasonable wear and tear excepted, and to provide the Private Equipment shall be limited to the total amount of Power Revenues actually received by the Association and the District during the term of this Amendment.

IN WITNESS WHEREOF, the parties to this Amendment have caused this Amendment to be duly executed as the day and year first written above.

DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

APPROVED

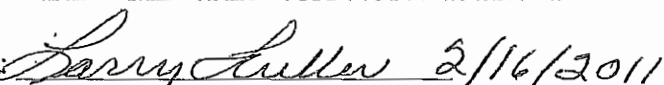
  
Office of the Regional Solicitor  
Intermountain Region

By:   
Regional Director

ATTEST:

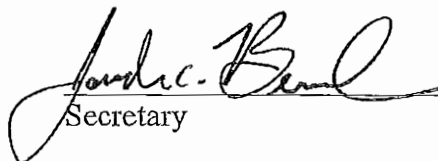
  
Secretary

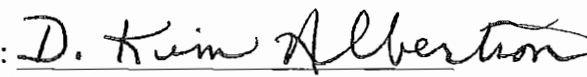
ORCHARD MESA IRRIGATION DISTRICT

By:  2/16/2011  
President

ATTEST:

GRAND VALLEY WATER USERS ASSOCIATION

  
Secretary

By:   
President

DISTRICT COURT, WATER DIVISION NO. 5, STATE OF COLORADO

Case No. 91CW247

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STIPULATION AND AGREEMENT

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CONCERNING THE APPLICATION FOR WATER RIGHTS OF THE GRAND VALLEY WATER USERS ASSOCIATION, ORCHARD MESA IRRIGATION DISTRICT, AND THE UNITED STATES OF AMERICA, IN MESA COUNTY, COLORADO

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This Stipulation and Agreement, dated as of September 4, 1996, is made between the Co-Applicants, the Grand Valley Water Users Association, the Orchard Mesa Irrigation District ("OMID"), the United States of America ("United States"), and the following parties who are collectively referred to herein as the "Objectors":

Aurora, City of  
Basalt, Town of  
Basalt Water Conservancy District  
Carbondale, Town of  
Colorado Division of Wildlife  
Colorado River Water Conservation District  
Colorado Springs, City of  
Colorado State Engineer  
Colorado Water Conservation Board  
Copper Mountain, Inc.  
Copper Mountain Consolidated Metropolitan District (successor-in-interest to  
Copper Mountain Water and Sanitation District)  
Cyprus Climax Metals Company  
DeBeque, Town of  
Division Engineer, Water Division No. 5  
Eagle, Town of  
Exxon Company, U.S.A.  
Frisco, Town of  
Glenwood Springs, City of  
Grand County Water & Sanitation District No. 1  
Grand Valley Irrigation Company  
Middle Park Water Conservancy District  
Mid Valley Metropolitan District  
Mobil Mining & Minerals Company

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New Castle, Town of  
North Barton Creek Ltd. Liability Company  
Palisade, Town of  
Parachute, Town of  
Pueblo, Board of Water Works of  
Public Service Company of Colorado  
Ralston Resorts, Inc. (successor-in-interest to Keystone Resorts Management,  
Inc., and Breckenridge Ski Corporation)  
Rifle, City of  
Rifle Land Associates, Ltd.  
Silverthorne, Town of  
Spruce Valley Ranch Foundation  
Summit County Commissioners, Board of  
Union Oil Company of California  
Upper Eagle Regional Water Authority  
Vail Associates, Inc.  
Vail Valley Consolidated Water District

In consideration of the mutual agreements contained herein, Co-Applicants and Objectors agree as follows:

1. Definitions. Unless otherwise indicated, the following terms shall have the following definitions in this Stipulation and Agreement and in any decree which may be subsequently entered in this case:

- "15-Mile Reach" shall mean the reach of the Colorado River which extends, from the point at which the tailrace common to the Grand Valley Power Plant and the OMID pumping plant returns to the Colorado River below the Grand Valley Irrigation Company ("GVIC") diversion dam, downstream to the confluence of the Colorado River and Gunnison River.

- "Blue River Decrees" shall mean the stipulations, judgments, orders and decrees entered in consolidated Civil Action Nos. 2782, 5016 and 5017, United States District Court, District of Colorado, including without limitation the decrees dated October 12, 1955, and April 16, 1964.

- "HUP" shall mean the so-called "historic users pool" defined as water to be released from the Green Mountain Reservoir power pool as described in paragraphs 2 and 3 of the Operating Policy.



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- "HUP beneficiaries" shall mean those persons or entities for whose benefit releases are made from the HUP pursuant to the Operating Policy.

- "OMID Right" shall mean the 450 c.f.s. decreed as Priority No. 197 as renumbered to the OMID System of Canals and Ditches by decree of the Mesa County District Court entered on July 25, 1941, in Case No. 5812.

- "Operating Policy" shall mean the Operating Policy for Green Mountain Reservoir; Colorado-Big Thompson Project, Colorado (Volume 48, No. 247 Federal Register 12/22/83; as amended in Volume 52, No. 176 Federal Register 9/11/87).

- "Orchard Mesa Check" shall mean the three mechanically operated radial gates and the bypass channel by which the water level in the common afterbay of the Grand Valley Power Plant and the OMID pumping plant can be raised to a level which causes water to flow through the bypass channel and return to the Colorado River immediately upstream of the GVIC diversion dam, and shall include any replacement structure in the same location which performs that same function.

- "Parties" shall mean each of the parties to this Stipulation and Agreement as identified in the first unnumbered paragraph, above. A "party" shall mean one of the parties.

- "Power Right" shall mean the 800 c.f.s., 400 c.f.s. during the irrigation season, decreed to the United States for the Grand Valley Project by decree of the Mesa County District Court entered July 25, 1941, in Case No. 5812.

- "Shoshone Rights" shall mean the water rights decreed for and associated with the Shoshone Power Plant (a.k.a. the Glenwood Power Canal), adjudicated for 1,250 c.f.s. on December 9, 1907, with an appropriation date of January 7, 1902, and adjudicated for 158 c.f.s. on February 7, 1956, with an appropriation date of May 15, 1929.

2. Application. The Co-Applicants filed an application on December 30, 1991, which application was amended on May 24, 1993, for approval of an exchange of water based upon the discharge of water from the common afterbay of the Grand Valley Power Plant and the OMID pumping plant into the Colorado River upstream from the GVIC diversion dam by means of the Orchard Mesa Check. The Co-Applicants have claimed an absolute right for an existing exchange of water with a 1926 priority date. Attached hereto as Exhibit A and incorporated herein by this reference is a list of all of the decreed water



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rights of the Co-Applicants (the "Co-Applicants' Water Rights"), Mesa County Irrigation District and Palisade Irrigation District which are legally divertible at the headgate of the Government Highline Canal (commonly referred to as the "Roller Dam"). Attached hereto as Exhibit B and incorporated herein by this reference is a list of all the decreed water rights of the GVIC (the "GVIC Water Rights") which are legally divertible at the GVIC diversion dam.

3. Decree Provisions. The parties agree to the entry of a decree in Case No. 91CW247, in the form of the proposed decree attached hereto as Exhibit C, granting the application as amended and incorporating the terms of this Stipulation and Agreement.

3.a. Except as provided in paragraphs 3.a.(1), (2) and (3), below, the United States agrees not to exercise the Power Right from April 1 through October 31 of each year so as to place an administrative call which results in the curtailment of diversions by upstream water rights.

3.a.(1) During the months April through October, at any time diversions at the Roller Dam under the irrigation rights listed on Exhibit A are less than 1,310 c.f.s., the Power Right may be exercised so as to maintain a total call of 1,310 c.f.s. at the Roller Dam by the water rights listed on Exhibit A.

3.a.(2) In addition, at any time during the months April through October that diversions by the GVIC Water Rights are less than 400 c.f.s., the Power Right may be exercised for up to the amount that diversions by such GVIC rights are less than 400 c.f.s.; provided, however, that if GVIC gives written notice to the parties pursuant to paragraphs 3.e.(1) or (2) that the GVIC Water Rights shall no longer be subject to the terms of paragraph 3.b., then, at any time during the months April through October, the Power Right may be exercised for up to the amount that GVIC's diversions are less than the amount of GVIC's then existing decreed water rights or less than 400 c.f.s., whichever is less.

3.a.(3) If the Orchard Mesa Check is physically inoperable due to an Act of God or an emergency situation beyond the control of the Co-Applicants, the United States may exercise the Power Right to the full decreed amount for a period not to exceed a total of 14 days during the April 1 through October 31 period in any given year or until the Orchard Mesa Check becomes operable, whichever occurs first. For purposes of this provision, an emergency situation shall not be deemed to occur if the Orchard Mesa Check is inoperable due to a lack of funding or the non-performance of ordinary maintenance.

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3.a.(4) Any calls of the Power Right pursuant to paragraphs 3.a.(1), (2) and (3), above, may be made only when and to the extent the Power Right is in priority, there is capacity in the power canal, and all water called thereunder is delivered to and through the Grand Valley Power Plant.

3.a.(5) For purposes of paragraph 3 of this Stipulation and Agreement, the priority date of the Power Right shall be considered to be August 3, 1934. So long as none of the provisions of paragraph 3 of this Stipulation and Agreement are suspended, the United States agrees not to seek administration under a more senior priority, which the United States asserts is decreed as February 27, 1908. By agreeing not to assert a 1908 priority for the Power Right while paragraph 3 of this Stipulation and Agreement is not suspended, the United States does not waive and shall not be estopped from asserting the right to seek administration under a 1908 priority, nor shall Objectors be estopped from challenging a 1908 priority, in the event any of the provisions of paragraph 3 of this Stipulation and Agreement shall be suspended, as addressed in paragraphs 3.b.(6), 5.c. and 5.d., below. The parties agree that the time for raising claims and defenses concerning the priority of the Power Right is tolled so long as none of the provisions of paragraph 3 of this Stipulation and Agreement are suspended.

3.a.(6) No provision of this Stipulation and Agreement shall be considered to affect in any way the right of the United States to call for the 800 c.f.s. power right from November 1 through March 31.

3.b. During the period April 1 through October 31 of any year that the conditions set forth in paragraphs 3.b.(1), (2) and (3), below, are met, diversions by HUP beneficiaries (except the HUP beneficiaries who own and/or operate the water rights listed in Exhibits A and B) shall not be curtailed by any administrative call by the water rights listed in Exhibits A and B:

3.b.(1) the Orchard Mesa Check is physically operable. For purposes of this provision, the Orchard Mesa Check shall be considered to be physically operable unless it is rendered inoperable due to an Act of God or an emergency situation beyond the control of the Co-Applicants. An emergency situation shall not be deemed to occur if the Orchard Mesa Check is inoperable due to a lack of funding or the non-performance of ordinary maintenance. If the Orchard Mesa Check is rendered inoperable, Co-Applicants shall make best efforts to bring the facility back into operation as soon as possible.



## **Exhibit B**

### **Private Equipment**

#### New Private Equipment (photos attached)

- 1) Material: 1- 40' class 2 pole and associated hardware  
9 - 300A bladed cutout switches  
3- Metering Current Transformers  
3 -Metering accuracy Potential Transformers  
1 - primary electric meter with recorder  
Total Estimated Cost: \$21,586
  
- 2) Material: 3 - 40' class 3 poles and associated hardware  
800' - #2 ACSR Bare Primary conductors  
3- 50kva xfmr's for 120/208v service  
80' - 4/0 al quad 120/208v conductors to new meter.  
3- metering accuracy current transformers.  
Total Estimated Cost: \$25,000

- 3) Telemetry equipment: After initial energization and before March 31, 2011, Public Service shall upgrade the standard watt-hour meter to install a Nexus meter with advanced communication capability and a suitable telecommunications channel device and related equipment to comply with the telemetry requirements for this installation (see Section 8.4 of the Technical Requirements). Cost is an incremental \$5,000 for the cost differential between the standard and advanced meter plus the telemetry equipment.

#### Original Private Equipment (located in the transformer yard)

See attached list and photo.

New Private  
Equipment



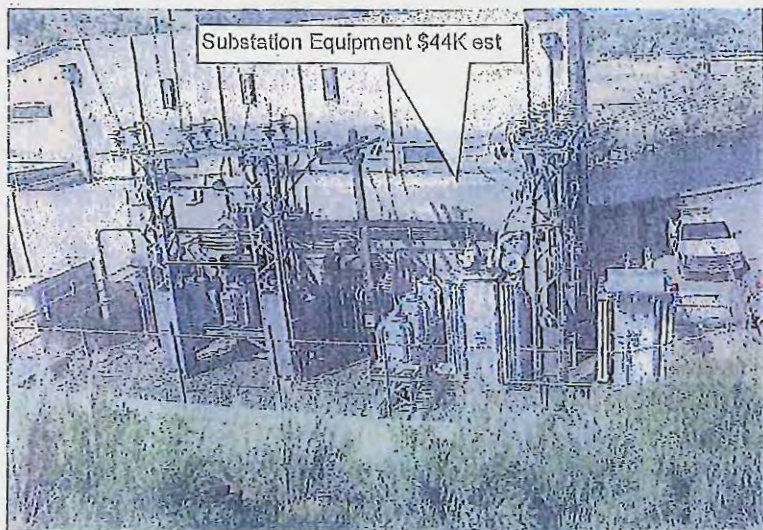
New OMID  
Control Computer,  
Associated  
Equipment, &  
Display \$30K est



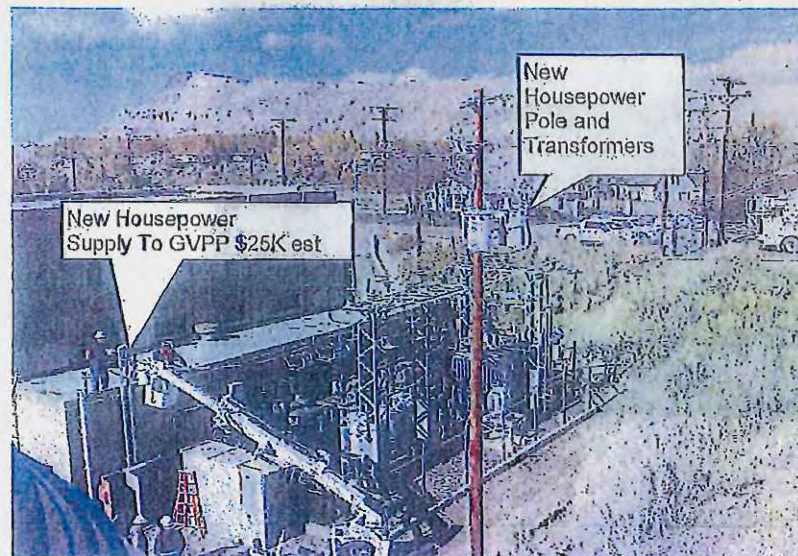
New Pole Mounted  
Primary Metering  
\$20K est



New Private  
Equipment



New Private  
Equipment



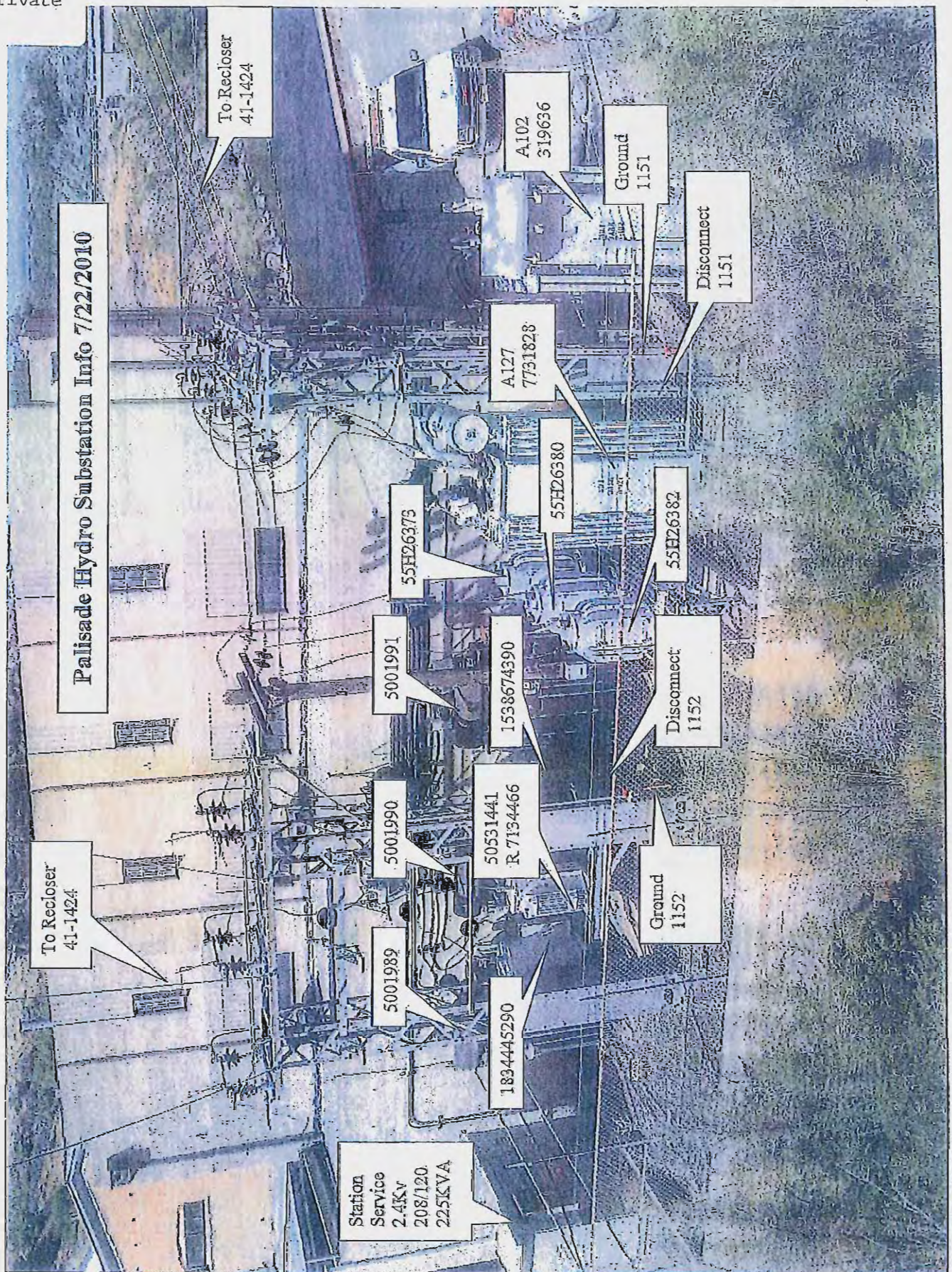


Original Private  
Equipment

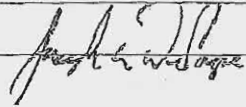
vinlage	refillment_unit_desc	cp_tiedger_long_description	cp_ae_long_description	activity_qty	activity_cost	asset_id	asset_location	utility_account_id	serial_number
1955	Transf Substation 1PH Distr	TR PWR 1PH 7200V / 220V	Transformer 1 Phase 7.2KV / 220V	1	1,090.00	11376057	Elec Dist-Sub-CO- Under 44KV-Palisade Station.	10362000	59426373
1955	Transf Substation 1PH Distr	TR PWR 1PH 7200V / 220V	Transformer 1 Phase 7.2KV / 220V	1	1,090.00	11376058	Elec Dist-Sub-CO- Under 44KV-Palisade Station.	10362000	55126382
1955	Transf Substation 1PH Distr	TR PWR 1PH 7200V / 220V	Transformer 1 Phase 7.2KV / 220V	1	1,090.00	11376059	Elec Dist-Sub-CO- Under 44KV-Palisade Station.	10362000	55126390
1951	Transf Substation 1PH Distr	TR PWR 1PH 43000V / 7200V	Transformer 1 Phase 13KV / 7.2KV	1	2,596.00	11376177	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	56500046
1951	Transf Substation 1PH Distr	TR PWR 1PH 43000V / 7200V	Transformer 1 Phase 13KV / 7.2KV	1	2,596.00	11376178	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	56500046
1951	Transf Substation 1PH Distr	TR PWR 1PH 25000V / 4000V	Transformer 1 Phase 25KV / 4KV	1	4,890.00	11375434	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	59000047
1934	Transf Substation 1PH Distr	TR PWR 1PH 25000V / 4000V	Transformer 1 Phase 25KV / 4KV	1	4,890.00	11375435	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	50011989
1934	Transf Substation 1PH Distr	TR PWR 1PH 25000V / 4000V	Transformer 1 Phase 25KV / 4KV	1	4,890.00	11375436	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	50011991
1945	Transf Substation 3PH Distr	TR PWR 3PH 13000V / 2300V	Transformer 3 Phase 13KV / 2.3KV	1	3,464.00	11376060	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	7731028
1940	Transf Substation 3PH Distr	TR PWR 3PH 13000V / 4000V	Transformer 3 Phase 13KV / 4KV	1	3,464.00	11376060	Elec Dist-Sub-CO- Under 44KV-Palisade Station	10362000	3119636

Red = input file site.  
Green = not on the list.

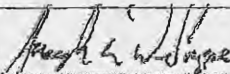






CERTIFICATE OF COVERAGE						Certificate # 5057	
<b>Administrator</b> Colorado Special Districts Property and Liability Pool P.O. Box 1539 Portland OR 97207-1539				THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.			
				<b>COMPANIES AFFORDING COVERAGE</b>			
<b>NAMED MEMBER</b> Orchard Mesa Irrigation District 668 38 Rd Palisade, CO 81526				COMPANY A Colorado Special Districts Property and Liability Pool			
				COMPANY B General Reinsurance Corporation			
				COMPANY C Certain Underwriters at Lloyd's, London			
				COMPANY D Safety National Casualty Corporation			
<b>COVERAGE</b>							
This is to certify that coverage documents listed herein have been issued to the Named Member herein for the Coverage period indicated. Notwithstanding any requirement, term or condition of any contract or other document with respect to which the certificate may be issued or may pertain, the coverage afforded by the coverage documents listed herein is subject to all the terms, conditions and exclusions of such coverage documents.							
CO LTR	Type of Coverage	Coverage #	Effective Date	Expiration Date	Limits		
A, B	<b>General Liability</b>	24C56325-570	1/1/2011	1/1/2012	General Aggregate	Unlimited	
	<input checked="" type="checkbox"/> Commercial General Liability	* Except that for claims, occurrences or suits to which the monetary limits of the Colorado Governmental Immunity Act, C.R.S. 24-10-101, et. seq., as amended, apply, there shall be a further sublimit of (a) \$150,000 for an injury to any one person in any single occurrence; and (b) \$600,000 for an injury to two or more persons in any single occurrence; but in the event of an injury to two or more persons in any single occurrence, the sublimit shall not exceed \$150,000 for each injured person.			Each Occurrence *	\$1,000,000	
	<input checked="" type="checkbox"/> Public Officials Liability						
	<input checked="" type="checkbox"/> Employment Practices						
	<input checked="" type="checkbox"/> Occurrence						
A, B	<b>Automobile Liability</b>	24C56325-570	1/1/2011	1/1/2012	Each Occurrence *	\$1,000,000	
	<input checked="" type="checkbox"/> Scheduled Autos						
	<input checked="" type="checkbox"/> Hired Autos						
	<input checked="" type="checkbox"/> Non-Owned Autos						
A, C	<b>Auto Physical Damage</b>	24C56325-570	1/1/2011	1/1/2012	See below if applicable.		
	<input checked="" type="checkbox"/> Scheduled Autos						
	<input checked="" type="checkbox"/> Hired Autos						
	<b>Excess Liability</b>				General Aggregate		
	<input type="checkbox"/> Other Than Umbrella Form				Each Occurrence *		
A, C	<b>Property</b>	24C56325-570	1/1/2011	1/1/2012	See below if applicable.		
	<input checked="" type="checkbox"/>						
<b>DESCRIPTION</b> Certificate Holder is an additional covered Member for those coverages noted hereunder but only with respect to those liabilities that are covered by the Pool's coverage document for the Member District arising from lease agreement for the Property located at 668 38 Road, Palisade, CO 81526 Subject to the provisions and limitations contained in C.R.S. 24-10-101. The Pool will limit any amounts to the monetary limits and sublimits of the Colorado Governmental Immunity Act, C.R.S. 24-10-101 et. Seq., as amended, would apply to the Covered Member. Pollution Liability Coverage is \$1,000,000 per Pollution Condition & \$5,000,000 aggregate all Pollution Conditions both are all Members combined.							
<b>CERTIFICATE HOLDER</b> Public Service Corporation dba Xcel Energy c/o Manager Area Engineering PO Box 840 Denver, CO 80201				<b>CANCELLATION:</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.			
				By: Joseph E. DePaepe  Date: 1/19/2011			



CERTIFICATE OF COVERAGE					CERTIFICATE NUMBER 272	
<b>ADMINISTRATOR</b>  Colorado Special Districts Property and Liability Pool POB 1539 Portland OR 97207-1539			THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.			
<b>NAMED MEMBER</b> Orchard Mesa Irrigation District ATTN: 668 38 Road Palisade, CO 81526			<b>COMPANIES AFFORDING COVERAGE</b>  COMPANY A - Colorado Special Districts Property and Liability Pool COMPANY B COMPANY C COMPANY D			
COVERAGES						
THIS IS TO CERTIFY THAT COVERAGE DOCUMENTS LISTED HEREIN HAVE BEEN ISSUED TO THE NAMED MEMBER HEREIN FOR THE COVERAGE PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH COVERAGE DOCUMENTS.						
CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION	LIMITS	
	<b>GENERAL LIABILITY</b>				GENERAL AGGREGATE	
	<input type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	
	<input type="checkbox"/> CLAIMS MAD <input type="checkbox"/> OCCUR				PERSONAL & ADV. INJURY	
	<input type="checkbox"/> OWNER'S & CONTRACTORS PROT				EACH OCCURRENCE	
					FIRE DAMAGE (Any one fire)	
					MED EXPENSE (Any one person)	
	<b>AUTOMOBILE LIABILITY</b>				COMBINED SINGLE LIMIT	
	<input type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE	
	<input type="checkbox"/> HIRED AUTOS					
	<input type="checkbox"/> NON-OWNED AUTOS					
	<b>GARAGE LIABILITY</b>				AUTO ONLY - EA ACCIDENT	
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY:	
					EACH ACCIDENT	
					AGGREGATE	
	<b>EXCESS LIABILITY</b>				EACH OCCURRENCE	
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE	
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM					
A	<b>WORKERS COMPENSATION AND EMPLOYERS LIABILITY</b>	11W56325-70	1/1/2011	1/1/2012	<input checked="" type="checkbox"/> WC STATU- TORY LIMITS	
					OTHER	
	EL EACH ACCIDENT				2,000,000	
	EL DISEASE - POLICY LIMIT				2,000,000	
					EL DISEASE - EACH EMPLOYEE	2,000,000
	<b>OTHER</b>					
<b>DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS (LIMITS MAY BE SUBJECT TO DEDUCTIBLES OR RETENTIONS)</b> Subject to the terms and conditions of the Workers' Compensation Coverage Document. Proof of Coverage Only.						
CERTIFICATE HOLDER			CANCELLATION			
Public Service Corporation dba Xcel Energy c/o Manager Area Engineering PO Box 840 Denver, CO 80201			SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.			
By: Joseph E. DePaape						
VALID AS OF: 1/19/2011						





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/17/2011

PRODUCER (970)243-6600 FAX: (970)243-3914

Home Loan &amp; Investment Company

205 North 4th Street

P. O. Box 100

Grand Junction CO 81502-0100

INSURED

Grand Valley Water Users Assoc

1147 - 24 Road

Grand Junction CO 81505

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: American Alternative Ins.

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR	ADD'L	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
LTR	INSRD					
A		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR	SP9151853-02	6/1/2010	6/1/2011	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 3,000,000 PRODUCTS - COM/OP AGG \$ 3,000,000
		GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO- JECT <input type="checkbox"/> LOC				
A		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	SA8051916-03	6/1/2010	6/1/2011	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
A		EXCESS / UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  DEDUCTIBLE RETENTION \$	SX9250664-02	6/1/2010	6/1/2011	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ \$ \$ \$
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under SPECIAL PROVISIONS below				WC STATU- TORY LIMITS <input type="checkbox"/> OTH- ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
A		OTHER Leased/Rented Equip	SP9151853-02	6/1/2010	6/1/2011	Limit \$100,000

## DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Certificate Holder is listed as an Additional Insured with coverage applying on a primary and non-contributory basis.  
\*10-day for non-payment.

## CERTIFICATE HOLDER

Public Service Corporation  
d/b/a Xcel Energy  
Manager Area Engineering  
PO Box 840  
1123 W.3rd Ave.  
Denver, CO 80201

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30\* DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Matthew Hall/CHAN

ACORD 25 (2009/01)

INS025 (200901)

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/18/2011

PRODUCER (970) 243-6600 FAX: (970) 243-3914

Home Loan &amp; Investment Company

205 North 4th Street

P. O. Box 100

Grand Junction CO 81502-0100

INSURED

Grand Valley Water Users Assoc

1147 - 24 Road

Grand Junction CO 81505

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## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: SIP/Pinnacle

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC				EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) \$  BODILY INJURY (Per person) \$  BODILY INJURY (Per accident) \$  PROPERTY DAMAGE (Per accident) \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$  OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
	<b>EXCESS / UMBRELLA LIABILITY</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  DEDUCTIBLE RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$ \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under SPECIAL PROVISIONS below  OTHER	190612	7/1/2010	7/1/2011	WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

\*\*10-day for non-payment

## CERTIFICATE HOLDER

Public Service Corporation  
d/b/a Xcel Energy  
Manager Area Engineering  
PO Box 840  
1123 W.3rd Ave.  
Denver, CO 80201

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30\* DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Matthew Hall/KITTY

ACORD 25 (2009/01)

INS025 (200901)

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/17/2011

PRODUCER (970) 243-6600 FAX: (970) 243-3914

Home Loan &amp; Investment Company

205 North 4th Street

P. O. Box 100

Grand Junction CO 81502-0100

INSURED

Grand Valley Water Users Assoc

1147 - 24 Road

Grand Junction CO 81505

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## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: American Alternative Ins.

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY	SP9151853-02	6/1/2010	6/1/2011	EACH OCCURRENCE	\$ 1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person)	\$ 10,000
					PERSONAL & ADV INJURY	\$ 1,000,000
					GENERAL AGGREGATE	\$ 3,000,000
	GENTL AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMPIOP AGG	\$ 3,000,000
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC					
A	AUTOMOBILE LIABILITY	SA8051916-03	6/1/2010	6/1/2011	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	\$
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$
	SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	\$
	HIRED AUTOS					
NON-OWNED AUTOS						
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	\$
	<input type="checkbox"/> ANY AUTO				OTHER THAN EA ACC	\$
					AUTO ONLY: AGG	\$
A	EXCESS / UMBRELLA LIABILITY	SX9250664-02	6/1/2010	6/1/2011	EACH OCCURRENCE	\$ 10,000,000
	<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE	\$
						\$
	<input type="checkbox"/> DEDUCTIBLE					\$
	RETENTION \$					\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU-TORY LIMITS	OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)				E.L. EACH ACCIDENT	\$
	If yes, describe under SPECIAL PROVISIONS below				E.L. DISEASE - EA EMPLOYEE	\$
					E.L. DISEASE - POLICY LIMIT	\$
A	OTHER Leased/Rented Equip	SP9151853-02	6/1/2010	6/1/2011	Limit	\$100,000

## DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Certificate holder is listed as an Additional Insured with coverage applying on a primary and non-contributory basis.

## CERTIFICATE HOLDER

(970) 464-5928

Orchard Mesa Irrigation District

Max Schmidt

668 38 Road

Palisade, CO 81526

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Matthew Hall/CHAN

ACORD 25 (2009/01)

INS025 (200901)

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
1/18/2011

PRODUCER (970)243-6600 FAX: (970)243-3914

Home Loan & Investment Company  
205 North 4th Street  
P. O. Box 100

Grand Junction CO 81502-0100

## INSURED

Grand Valley Water Users Assoc  
1147 - 24 Road

Grand Junction CO 81505

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## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: SIP/Pinnacol

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

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INSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC				EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMPI/OP AGG \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) \$  BODILY INJURY (Per person) \$  BODILY INJURY (Per accident) \$  PROPERTY DAMAGE (Per accident) \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
	<b>EXCESS / UMBRELLA LIABILITY</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  DEDUCTIBLE \$ RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$ \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under SPECIAL PROVISIONS below  OTHER	190612	7/1/2010	7/1/2011	WC STATUTORY LIMITS OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

## CERTIFICATE HOLDER

(970) 464-5928

Orchard Mesa Irrigation District  
Max Schmidt  
668 38 Road  
Palisade, CO 81526

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.AUTHORIZED REPRESENTATIVE  
Matthew Hall/KITTY



# CERTIFICATE OF COVERAGE

Certificate #: 058

**Administrator**

Colorado Special Districts Property and Liability Pool  
P.O. Box 1539  
Portland OR 97207-1539

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.

**COMPANIES AFFORDING COVERAGE**

**NAMED MEMBER**

Orchard Mesa Irrigation District  
668 38 Rd  
Pallisade, CO 81526

COMPANY A Colorado Special Districts Property and Liability Pool  
COMPANY B General Reinsurance Corporation  
COMPANY C Certain Underwriters at Lloyd's, London  
COMPANY D Safety National Casualty Corporation

**COVERAGE**

This is to certify that coverage documents listed herein have been issued to the Named Member herein for the Coverage period indicated. Notwithstanding any requirement, term or condition of any contract or other document with respect to which the certificate may be issued or may pertain, the coverage afforded by the coverage documents listed herein is subject to all the terms, conditions and exclusions of such coverage documents.

CO LTR	Type of Coverage	Coverage #	Effective Date	Expiration Date	Limits	
A, B	General Liability	24C56325-570	1/1/2011	1/1/2012	General Aggregate	Unlimited
	<input checked="" type="checkbox"/> Commercial General Liability	* Except that for claims, occurrences or suits to which the monetary limits of the Colorado Governmental Immunity Act, C.R.S. 24-10-101, et. seq., as amended, apply, there shall be a further sublimit of (a) \$150,000 for an injury to any one person in any single occurrence; and (b) \$600,000 for an injury to two or more persons in any single occurrence; but in the event of an injury to two or more persons in any single occurrence, the sublimit shall not exceed \$150,000 for each injured person.			Each Occurrence *	\$1,000,000
	<input checked="" type="checkbox"/> Public Officials Liability					
	<input checked="" type="checkbox"/> Employment Practices					
	<input checked="" type="checkbox"/> Occurrence					
A, B	Automobile Liability	24C56325-570	1/1/2011	1/1/2012	Each Occurrence *	\$1,000,000
	<input checked="" type="checkbox"/> Scheduled Autos					
	<input checked="" type="checkbox"/> Hired Autos					
	<input checked="" type="checkbox"/> Non-Owned Autos					
A, C	Auto Physical Damage	24C56325-570	1/1/2011	1/1/2012	See below if applicable.	
	<input checked="" type="checkbox"/> Scheduled Autos					
	<input checked="" type="checkbox"/> Hired Autos					
	Excess Liability				General Aggregate	
	<input type="checkbox"/> Other Than Umbrella Form				Each Occurrence *	
A, C	Property	24C56325-570	1/1/2011	1/1/2012	See below if applicable.	
	<input checked="" type="checkbox"/>					

**DESCRIPTION:**

Certificate Holder is an Additional Covered Member but only as respect Property as their interest may appear. Certificate Holder is an Additional Covered Member but only as respect to liability for those sums which the Member shall be legally obligated to pay as damage caused by the Member's act or omission, or the acts or omission of those acting on its behalf, in the performance of authorized operations; all acting within the scope of their employment or duties whether arising out of a governmental or proprietary function for property located at 668 38 Road, Pallisade, CO 81526, subject to provisions and limitations contained in C.R.S. 24-10-101. The Pool will limit any amounts to the monetary limits and sublimits of the Colorado Governmental Immunity Act, 24-10-101 et. Seq., as amended, would apply to the Covered Member. Pollution Liability Coverage is \$1,000,000 per Pollution Condition & \$5,000,000 aggregate all Pollution Conditions both are all Members combined.

**CERTIFICATE HOLDER**

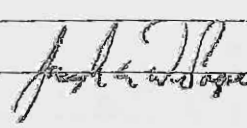
Grand Valley Water Users Association  
1147 24 Road

Grand Junction, CO 81505

CANCELLATION: SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

By: Joseph E. DePaep

Date: 1/19/2011



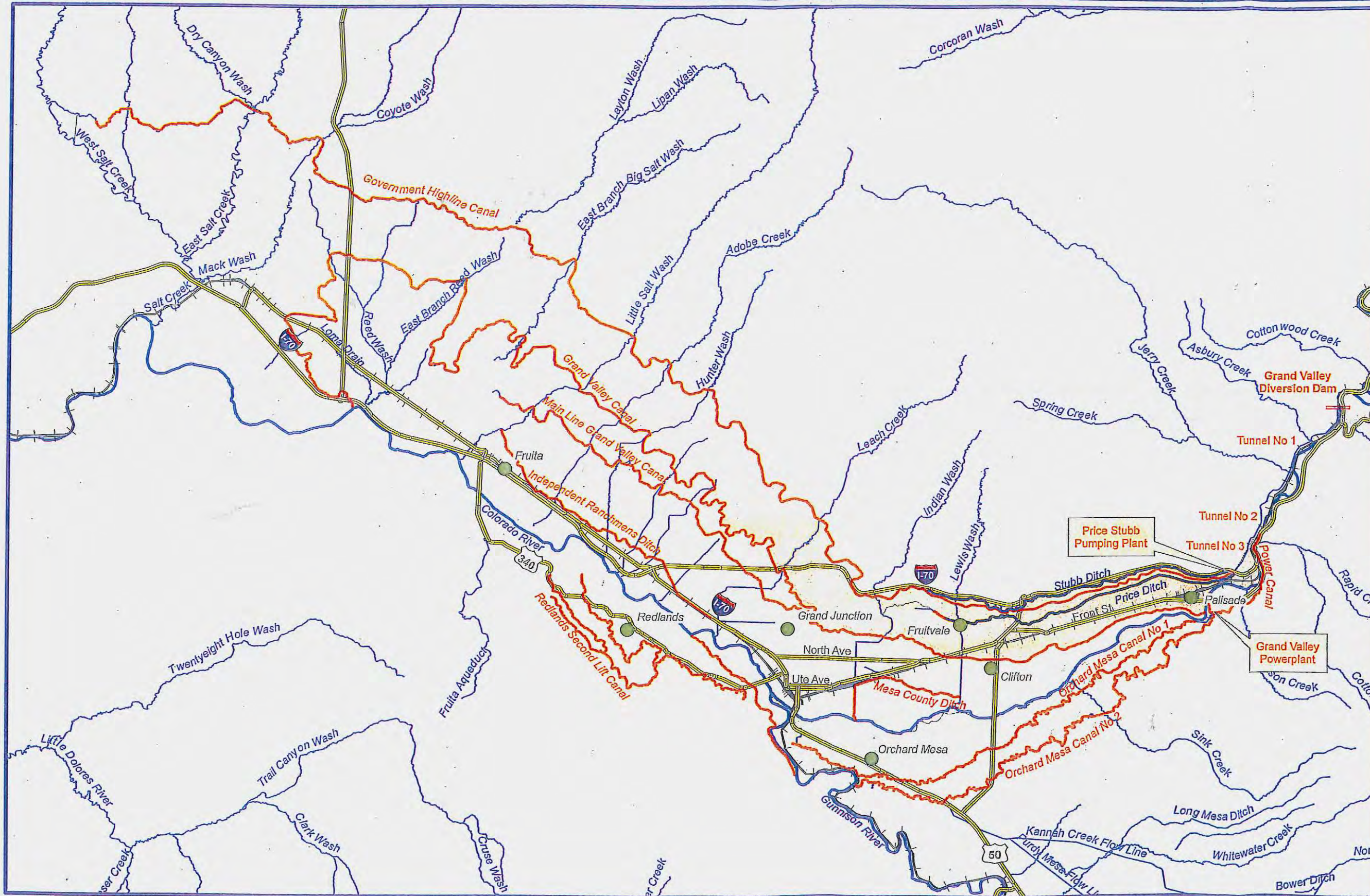


CERTIFICATE OF COVERAGE					CERTIFICATE NUMBER 273	
<b>ADMINISTRATOR</b>  Colorado Special Districts Property and Liability Pool POB 1539 Portland OR 97207-1539			THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE COVERAGE DOCUMENT. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN.  <div style="text-align: center;"><b>COMPANIES AFFORDING COVERAGE</b></div>			
<b>NAMED MEMBER</b> Orchard Mesa Irrigation District ATTN: 668 38 Road Palisade, CO 81526			COMPANY A - Colorado Special Districts Property and Liability Pool COMPANY B COMPANY C COMPANY D			
COVERAGES						
THIS IS TO CERTIFY THAT COVERAGE DOCUMENTS LISTED HEREIN HAVE BEEN ISSUED TO THE NAMED MEMBER HEREIN FOR THE COVERAGE PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE COVERAGE AFFORDED BY THE COVERAGE DOCUMENTS LISTED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH COVERAGE DOCUMENTS.						
CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION	LIMITS	
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MAD <input type="checkbox"/> OCCUR <input type="checkbox"/> OWNER'S & CONTRACTORS PROT				GENERAL AGGREGATE PRODUCTS - COMP/OP AGG PERSONAL & ADV. INJURY EACH OCCURRENCE FIRE DAMAGE (Any one fire) MED EXPENSE (Any one person)	
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE	
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EACH ACCIDENT AGGREGATE	
	<b>EXCESS LIABILITY</b> <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE AGGREGATE	
A	<b>WORKERS COMPENSATION AND EMPLOYERS LIABILITY</b>	11W56325-70	1/1/2011	1/1/2012	<input checked="" type="checkbox"/> WC STATU- TORY LIMITS <input type="checkbox"/> OTHER	
					EL EACH ACCIDENT EL DISEASE - POLICY LIMIT EL DISEASE - EACH EMPLOYEE	2,000,000 2,000,000 2,000,000
	<b>OTHER</b>					
<b>DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS (LIMITS MAY BE SUBJECT TO DEDUCTIBLES OR RETENTIONS)</b> Subject to the terms and conditions of the Workers' Compensation Coverage Document.						
<b>CERTIFICATE HOLDER</b>				<b>CANCELLATION</b>		
Grand Valley Water Users Association  1147 24 Road Grand Junction, CO 81505				SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  <div style="text-align: right;">             By: Joseph E. DePaepe  </div>		
VALID AS OF 4/19/2011						





1:180,000



## Facilities

- Dam
- Canal

## Area Benefited by Project Works

- Garfield Gravity Division
- Orchard Mesa Division

## Infrastructure

- City
- Stream
- Highway
- Railroad

Map produced by:  
U.S. Bureau of Reclamation  
2764 Compass Drive  
Grand Junction, Colorado 81508  
Phone: (970) 248-0600  
Date Printed/Published: January 18, 2011  
File name: GVDistrictBoundsLnd11x17.mxd

Data Sources:  
Reclamation, US Census Bureau,  
BLM, USGS, USDA, State of CO,  
CDOT, CDSS, Mesa County

DISCLAIMER: This map is meant as an aid for the operation and maintenance of irrigation facilities. This map may graphically depict property boundaries. Property boundaries are for general reference only and do not represent legal descriptions.

0 1.5 3 6 9 12 15

Miles



## Appendix D // Emergency Management Plan

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# **CANAL EMERGENCY MANAGEMENT PLAN**

**For**

**The GVP Government Highline Canal**

**(Operating Entity) Grand Valley Water Users' Association**

**Date: March 1, 2016**

**Revised: \_\_\_\_\_**

\_\_\_\_\_

\_\_\_\_\_

**Reviewed: (see attached record)**

**Grand Valley Water Users Association  
Grand Valley Project  
1147 24 Road  
Grand Junction, CO 81505  
Phone: (970) 242-5065  
Fax: (970) 243-4871**

## Record of Reviews

Reviewed by: \_\_\_\_\_

Date of Review: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date of Review: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date of Review: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date of Review: \_\_\_\_\_

**GRAND VALLEY WATER USERS ASSOCIATION**

Resolution # \_\_\_\_\_

**CANAL EMERGENCY MANAGEMENT PLAN**

WHEREAS, the Board of Directors has determined that it is necessary and in the best interests of the Grand Valley Water Users' Association to update and formalize the procedures and policies directing its response to and management of canal breaks and other canal emergencies.

NOW THEREFORE BE IT RESOLVED by the Board of Directors of the Grand Valley Water Users' Association that the attached document entitled "Canal Emergency Management Plan for the Grand Valley Project Government Highline Canal" is adopted as its policy regarding canal breaks and other canal emergencies, and

BE IT FURTHER RESOLVED that all Grand Valley Water Users' Association management/supervisory employees and all other employees whose duties include canal operation tasks are directed to familiarize themselves with the contents of this Plan, and

BE IT FURTHER RESOLVED that the Grand Valley Water Users' Association, Operations Manager is directed to implement periodic training to assure that all management/supervisory employees and all other employees whose duties include canal operation tasks are knowledgeable of the contents of this Plan, and

BE IT FURTHER RESOLVED that the Grand Valley Water Users' Association, General Manager is directed to periodically update the canal data and other general information contained in this Plan, and

BE IT FURTHER RESOLVED that this Plan is to be printed and distributed in a format suitable for field use in emergency situations.

DULY ADOPTED in open meeting this 8<sup>th</sup> day of March 2016

Board of Directors:

\_\_\_\_\_

(SEAL)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ATTEST

\_\_\_\_\_  
Secretary

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# **CANAL EMERGENCY MANAGEMENT PLAN**

## **For The Grand Valley Project Government Highline Canal / Grand Valley Water Users Association (Canal/Operating Entity)**

### **Section I – General**

#### **A. Scope and Intent**

The purpose of this document is to provide likely decisions and actions for situations involving a potential, reported, or active breach/failure of Grand Valley Project Government Highline Canal.

This Plan is to provide comprehensive and easy to follow directions for Grand Valley Water Users' Association ("GVWUA") staff responding to an emergency. These directions are intended to help save lives and reduce property damage in the event of an emergency event that could result in flooding of areas adjacent to the canal system.

This Plan shall be reviewed annually (or following any emergency event) by operating entity staff to ensure that the information/instructions are accurate and complete.

#### **B. Timeframe and Sequence**

This plan assumes a timeframe beginning with the onset of the emergency and the following few hours up to possibly a day following the (emergency) event. The decisions and actions covered in this Plan are described in a likely sequential order. Verification of the emergency should always precede actual canal evacuation. Other than that, it may be appropriate for other decisions and actions to overlap, take place simultaneously, or follow a different sequence.

#### **C. Authority**

The GVWUA defines its chain of command in Appendix A and is structured to provide managerial/supervisory depth and some redundancy to cover critical situations. For after-hours situations, several managerial/supervisory employees and other employees are designated to standby (Appendix B.)

These organizational arrangements enable collaborative decision-making during emergencies. Such collaborative decision-making is encouraged because stressful situations increase the possibility of individual error. Local office U.S. Bureau of Reclamation dispatchers/officials should be included in the decision-making process. Consensus of the decision is not required. The ranking operating entity employee present is authorized, expected, and responsible to make the decisions and implement the actions necessary to manage the emergency.

## **D. Board of Directors**

It is likely that in a canal emergency, the situation will advance to the verification and water evacuation decision stages, or beyond, before the Board of Directors is informed or otherwise becomes aware of the emergency. This Plan anticipates that during emergency situations, emergency decision making will be performed by management/supervisory staff in accordance with the staff organization chart and staff chain of command.

# **Section II – Emergency Causes and Progression of Decisions**

## **A. Within/Adjacent to Canal Prism**

The most likely type of a canal emergency occurs within or adjacent to the canal prism or appurtenant structures. The causes are many (e.g., events such as seepage/piping, erosion, slumps, or structural embankment failure, structural failure of check structures, transitions or siphons, overtopping caused by misoperation, or debris jams or other similar events). In these circumstances, decision-makers need to move **immediately** toward monitoring, reporting, verification, and possible evacuation decisions outlined in Section III, **Response Levels** and as charted in Appendix E.

## **B. Earthquakes**

If an earthquake is reported with proximity and magnitude that would meet the established criteria for required inspection of the Cameo Roller Dam, or if an earthquake is felt by operating entity staff, field personnel **shall** be mobilized to inspect all major facilities of the Government Highline Canal. Special attention should be made to inspect fill embankments, siphons, check structures, and concrete transitions.

## **C. Floods**

Flash flooding, especially during the irrigation season, can cause canal failures if flood flows cause the canal's capacity to be exceeded or if flood debris in the canal system causes jams and overtopping. Overtopping and flooding can also result from malfunctions of automated gates or misoperation of canal system components. If flooding is observed or reported, patrols should be mobilized to inspect canal facilities in the area of the flooding and downstream areas/facilities.

Cross drainage features could become plugged, allowing floodwaters to be impounded, on the uphill side, by the canal embankment.

# **Section III – Response Levels**

## **A. Purpose**

The purpose of using response levels is to provide specific actions to consider or implement relative to various stages of an emergency located within or adjacent to the

canal prism. Some emergencies may begin and end within Internal Monitoring; others may progress to Level 1 and/or 2. However, sometimes the timing of emergencies will not allow a progression of response levels. Depending on initial observations of concerns or an incident, it may be necessary to immediately begin with actions listed under Response Level 1 or 2.

## **B. Response Level Observations/Actions**

### **Internal Monitoring**

#### **Indication/observations of a potential developing concern**

- An earthquake event is reported with a magnitude that would meet established criteria and within proximity to the canal and/or appurtenant structures.
- Weather forecast for usually heavy rains (or rains have occurred) that could cause localized flooding and increased flows within canal.
- A reoccurrence of a previous seepage or wet area, compared to previous years' observations. No apparent change in size or quantity. No cloudiness is apparent in seepage flow (i.e., seepage is clear.)
- A new seepage or wet area has developed, but is relatively small in quantity or size, and is not changing in appearance. No cloudiness is apparent in seepage flow (i.e., seepage is clear.)
- Minor erosion, slumps, scarps, gaps or cracking to canal bank/embankment have occurred, but are not evident or related to changes in any new seepage conditions.

#### **Actions to be taken:**

- Document and provide information on observations to all appropriate staff within (internal to) operating organization.
- Develop monitoring plan (resources, scheduling, and documentation) for observed conditions.
- Immediately communicate internally any changed conditions to warrant upgrade to Response Level 1.

### **Response Level 1 – External Notification**

#### **Indication/observations of a threatening condition – could lead to possible failure**

- A previous seepage or wet area, compared to previous years' observations, shows a notable increase in size or quantity. Cloudiness or sediment transport is apparent in seepage flow.
- A new seepage or wet area has developed, and is showing a change in quantity or size. Changes are reflective of changes in canal flow. Cloudiness or sediment transport is apparent in seepage flow.

- Erosion, slumps, scarps, gaps or cracking to canal bank/embankment have occurred, and are related to changes in existing seepage conditions.

**Actions to be taken:**

- Implement monitoring plan as conditions warrant.
- Immediately notify local Reclamation field or area office of observed conditions and continue to notify/update status of situation as conditions warrant. Consult on any advisable possible actions to be taken.
- Notify local authorities and communities of potentially threatening conditions and generally describe areas that could be impacted if a failure were to occur. **The need to evacuate potentially impacted areas is not apparent at this time.**
- Review possible procedures and actions (as outlined in this Emergency Management Plan) to be taken regarding canal flows (lowering flow levels, canal shutoff, and canal evacuation), personnel availability, equipment and material location for possible mobilization, communications, etc.
- Immediately communicate internally and to Reclamation local office any changed conditions to warrant upgrade to Response Level 2.

**Response Level 2 – External Notification and Response**

**Indication/observations of an imminent failure – or canal break has occurred (and verified)**

- Canal embankment conditions have worsened (visible piping and loss of material, headcutting of canal bank has initiated, etc.) and failure of the canal is probable and imminent. If conditions have progressed to this point, the time available prior to failure is limited.
- Canal breach is visible or failure has been reported and verified internally.

**Actions to be taken:**

- Notify local authorities and communities of the need to immediately evacuate the described areas likely to be impacted because of a failure that is to occur or has occurred.
- Immediately implement procedures and actions (as outlined in this Emergency Management Plan) to lessen impacts of the canal failure. Begin immediately to shutoff canal flows and/or canal evacuation.
- Immediately notify local Reclamation field or area office of observed conditions and continue to notify/update status of situation as conditions warrant. Consult on any advisable possible actions to be taken.
- Mobilize resources (resources, equipment, etc.) to support response efforts.

## Section IV – Verify Emergency

### A. Single Supervisory Control and Data Acquisition (SCADA) Report (*if available*)

SCADA information from a single SCADA station needs to be field verified to confirm an actual emergency, not an electronic malfunction, prior to concluding a canal failure has occurred.

### B. Multiple SCADA Reports

When SCADA information from more than one SCADA station reliably substantiates water loss leading to a conclusion of failure, initiate a decision process.

Note, such data may not measure the magnitude of the failure. Decision makers should confer before initiating the evacuation. The situation **shall** be field verified as quickly as possible.

### C. Operating Entity Reports

Accept the reports of canal failure by employees of the operating entity and initiate canal evacuation, unless there are physical or personnel circumstances indicating field verification is needed. Decision makers will need to collaborate with other agencies.

### D. Other Reports

Reports of canal failures from water users, the public, or others shall be field verified and/or verified by SCADA information before initiating canal evacuation. Information should be verified and observations evaluated.

#### NOTE

**Remember that flooding due to overtopping or associated with a broken headgate or broken lateral near the headworks can look like a canal break but may not actually endanger the canal.**

## Section V – Canal Evacuation

### A. Objectives

Once a canal failure or imminent canal failure is verified and a decision is reached to evacuate the water from the canal, operation decisions and actions must include the following objectives:

1. Protect human lives

Flooding from a canal break or other flooding caused by evacuating the canal is directly dangerous to people. People can also be harmed by accidents related to the flooding. Protecting human life and employee safety are the most important objective of canal emergency management. The high water velocities, eroding banks, and flooding caused by canal breaks create hazardous working conditions.

**NOTE**

**Flood hazards may be encountered while traveling to/from the location of the canal break.**

2. Prevent or minimize damage to the property of others

When alternative actions are possible, select the course of action less likely to cause damage to the property of others.

3. Protection of siphons and check structures

Damage or destruction of these key structures will likely cause prolonged loss of irrigation service and costly repairs or reconstruction. When alternative courses of action are possible, select the course of action most likely to protect these structures. Sacrificing other GVVUA facilities to protect these structures may be appropriate.

4. Prevent or minimize secondary damage to other operating entity facilities

Flooding from a canal break can cause damage to other operating entity facilities. Canal evacuation operations can also risk or sacrifice other operating entity facilities. Emergency decisions should be to evaluate the combined damage consequences to all facilities.

## **B. Canal Evacuation through Wasteways**

Wasteway and canal data are referenced and included as part of **Appendix C** of this document. Each wasteway along the canal system, starting at the headworks, is identified. Note that there may be downstream development along some wasteways that may restrict the original design capacity.

## **C. Other Possible Canal Evacuation Actions**

1. Surge the canal downstream of the point of canal failure. Since canal bottom slopes and hydraulic gradients are quite flat, water will still flow toward the breach from both directions creating a peak breach discharge exceeding the normal flow of the canal.
2. Route water through laterals to the extent capacity is available.
3. Place dikes in the canal to reduce and control the amount of water reaching the breached area.

As applicable, Reclamation dispatchers should be notified to move canal evacuation upstream and out of the Government Highline Canal as soon as possible.

Regulate the canal to enable continued water delivery using the nearest regulation point upstream of the failure. This step is a lesser priority than the expeditious and safe evacuation of water from the failed portion of the canal. The regulation point utilized must be reliable enough to prevent the inadvertent release of water into the failed area. Consider disabling upstream SCADA and other automation devices to prevent unintended gate operation.

Once canal evacuation is initiated, make decisions about the out-of-service portion of the Government Highline Canal. Based on the canal water surface and related drawdown considerations,

- Shut down all lateral headgates and farm unit turnouts and conserve storage behind checks, or
- Continue lateral diversions and farm unit deliveries as long as flows allow
- Try to operate all areas uniformly, to the extent possible.

## **Section VI – Notifications and Assistance**

Refer to the Communications Directory (Appendix D.) for emergency and law enforcement agencies.

If after hours, mobilize office personnel as required to help with communications.

Contact, as appropriate, State Department of Transportation and/or county public works, road department, railroads, and/or city public works or street department to close transportation facilities affected by or likely to be affected by flooding.

Contact, as appropriate, State Patrol, County Sheriff and/or Fire Districts to communicate traffic control needs and public safety concerns.

Contact, as appropriate, other utility and transportation entities (i.e., power companies, natural gas companies, petroleum pipeline companies, railroads, and communication companies) whose services or facilities could be affected by the canal emergency.

Contact the local Reclamation field or area office to notify them of the situation and to consult on or request any technical assistance.

If the public will be endangered or inconvenienced, or if public roads or utilities will be affected, contact the appropriate County Emergency Management Agency or notify the 9-1-1 Dispatch.

Notify operating entity management/supervisory staff and advised of the emergency situation.

Contact all Board Directors and advise them of the emergency situation.

## **Section VII – Mobilization**

Limit the initial mobilization of crews and equipment to what is needed to limit the canal damage, protect other operating entity facilities, protect other property from flood damage, and otherwise manage the emergency.

Past experience has shown that it is usually neither efficient nor economical to begin mobilizing for a canal repair until a repair plan is developed.



Notify all operating entity employees who may be involved with repairs. Prepare them for the likelihood of extended, round-the-clock, and weekend shifts.

Assemble key personnel and begin to plan, coordinate, and implement the repair effort. If possible, canal material and equipment should be identified prior to mobilization.

## **Section VIII – Document Damages and Preserve Information**

In accordance with the flowchart outlined in Appendix G, once the scope of the emergency is known, notify the operating entity's attorney and advise the attorney of the situation.

Once the scope of the emergency is known, notify the operating entity's insurance broker and advise them of the situation. The broker will relay the information to the operating entity's various insurance carriers. This task may be delegated to the operating entity's attorney if the attorney is available to make the necessary contacts. The broker or the insurance carrier or the operating entity's Attorney may dispatch adjusters, investigators, or consultants to the emergency site.

Photograph and/or video all damage to the extent possible. Consider hiring charter aircraft and/or professional photographers to help with this work. If charter aircraft or professional photographers are used, operating entity personnel knowledgeable in the possible types of damage should accompany them.

As soon as possible, and if appropriate, use operating entity, Reclamation engineering staff, or other knowledgeable personnel to field inspect, photograph and map the extent of all flooding and any other damage.

Request to save and back up all computer data from the SCADA system pertinent to the canal emergency.

To the extent possible, operating entity management/supervisory staff managing the emergency should keep dated notes (log) of their activities and observations.

## **Section IX – Notification to Water Users and the Public**

Refer to Appendix F. for such notification process. Every effort should be made to ensure that any emergency-related information released by the operating entity is forthright and accurate.

The General Manager or the Operations Manager are the designated spokespersons for the operating entity to report emergency-related information to the water users and to the news media. In the absence of the spokesperson the ranking operating entity employee, who is responsible for managing the emergency, becomes the designated spokesperson. To the extent possible, all public information should be provided by the spokesperson; other employees should refer requests for information from water users and the news media to the spokesperson.

It is important that water users facing a loss of irrigation service be informed of the situation as soon as possible after adequate information is available. Water users will make farming and business decisions based on the information provided by the operating entity so every effort should be made to avoid unduly optimistic or unduly pessimistic statements.

If public transportation or public utility facilities are affected by the canal emergency, coordinate with local emergency management agencies and Reclamation public affairs personnel, as appropriate, as soon as possible after adequate information is available. Local radio and television stations and news media will accept news releases from credible sources.

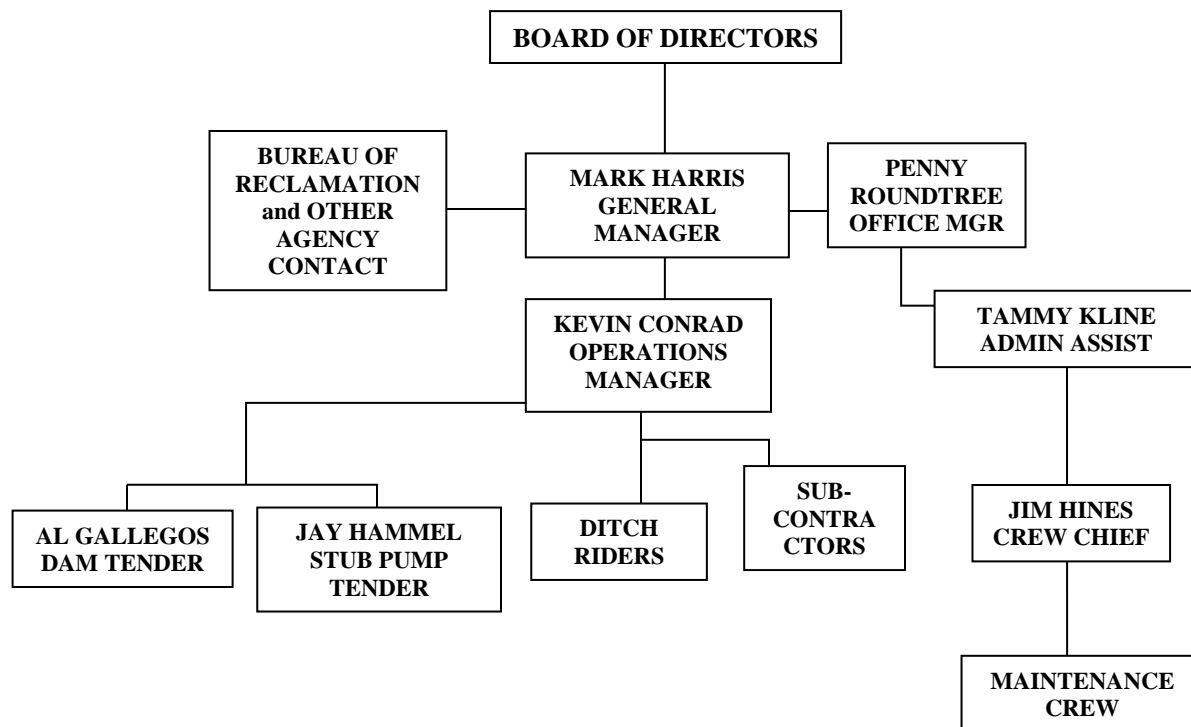
The Board of Directors and individual Directors have a duty to represent their constituents on emergency related matters, and as elected public officials have a public role regarding the operating entity's relationship with water users, the public, the news media, and with other public agencies. Operating entity management/supervisory staff should support the Directors, to the extent possible, in performing these duties.

**NOTE**

**In reporting public information, do not speculate about the possible cause of the emergency.**

## APPENDIX A

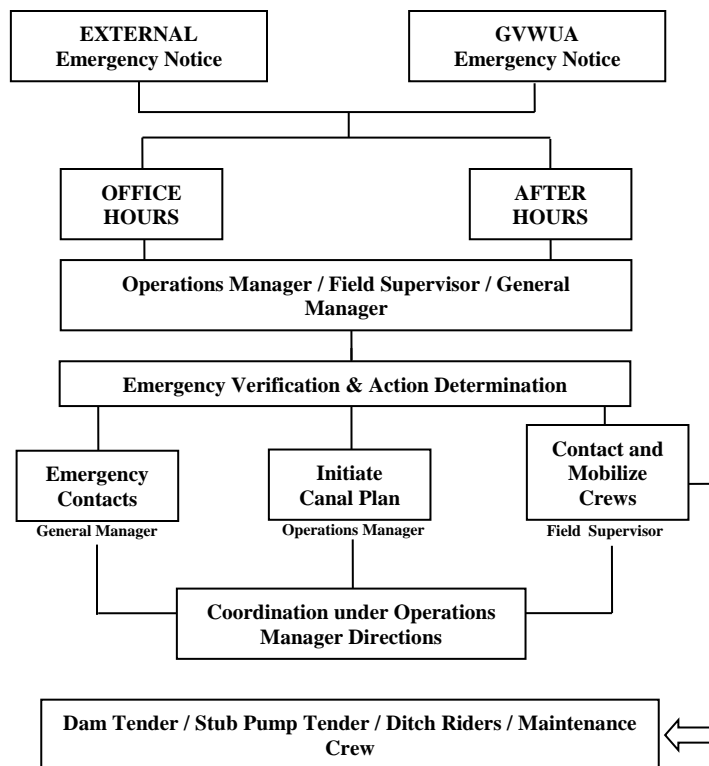
Organization chart and/or list of key positions for the operating entity.



## APPENDIX B

### GVWUA EMERGENCY PLAN FLOW CHART

#### Personnel Protocol



## APPENDIX C

### Use of GVWUA Emergency Spills for Emergency Purposes

All potential emergency spill locations listed below, with the exception of the Canyon Canal and the River Siphon to the Power Canal upstream from Tunnel 3, are located on the Grand Valley portion of the Government Highline Canal.

All proposed emergency plans contained in this Canal Emergency management Plan, including the use of the spills listed below provide guidance and cautions only. If an emergency is determined to exist, the Emergency Plan contact procedure will be followed. Depending on the nature and location of any particular emergency, the actual use of individual spill locations, the degree and order to which they may be appropriately used, and the related emergency procedures will dictate the actual actions taken.

The Emergency Plan and a condensed version containing the most critical directions contained in this emergency plan and emergency contact list shall be provided to and reviewed with all GVWUA employees and the appropriate local Reclamation office representatives annually. A copy of the aforementioned condensed version of the Plan and contact list shall be kept with all GVWUA vehicles and equipment and updated at the annual review.

**The use of any these facilities should be done only after careful consideration of the potential consequences of doing so and the potential affects down stream of such spills give then existing conditions.**

#### Potential emergency spills other than administrative spill locations

**Canyon Canal and River Siphon:** used only at the direction of the GVWUA Operations Manager in collaboration with the General Manager of Orchard Mesa Irrigation District

**Palisade By-Pass:** used only at the direction of the GVWUA Operations Manager

**Clifton check and other checks as appropriate (*various locations*); used only at the direction of the GVWUA Operations Manager and the Field Supervisor:** temporarily reduce canal in-flows to the breach area by using the check upstream and back-flows into the breach area by using the check below the breach; such action would temporarily isolate the breach area.

#### Administrative spill locations on the Government Highline Canal No spill should be used to spill the entire contents of the Canal

**Indian Wash:** this spill sits above Grand Junction's proposed Matchett Park and will lead to possibility that Park visitors may be present in the Wash. Spills of any significant magnitude should be done in combination with the notification of those in the Wash contained in the Park area. The Wash below that area is poorly maintained and the risk of flooding should be recognized, emergency contact protocol should be imitated, and the flow and area downstream should be monitored. The magnitude of the spills at Indian Wash should be moderated and eliminated as soon as practical.

**Persigo Wash (*approximately 24 Road at the Canal*):** significant spill volume can accommodated at the this location; restrictions may exist in the downstream of the wash crossing 24 Road at approximate ½ south of K Road; site should be observed and monitored.

**Little Salt Wash (*approximately 21 Road at the Canal*):** significant spill can be accommodated.

**Big Salt Wash** (*approximately 18 Road at the Canal; location of the weed screen*): curve in the spillway causes overflow of spill at high volumes; but significant spill flow could be accommodated and maintained if overflow is allowed for.

**Camp 7 Spill** (*at north side of Highline Lake at the Canal*): this location spills directly into Highline Lake and can accommodate most, if not all canal flow, at this location under normal irrigation demand volumes.

**East Salt Creek** (*10 and T Roads at the Canal*): limited volume allows due downstream wash channel restrictions; total canal flow should be greatly reduced at this point however.

**Badger Wash** (*end of canal; approximately 6 Road at the canal*): temporary release of up to 35cfs to accommodate any remaining canal flow in an emergency.

## APPENDIX D

### Communications Directory

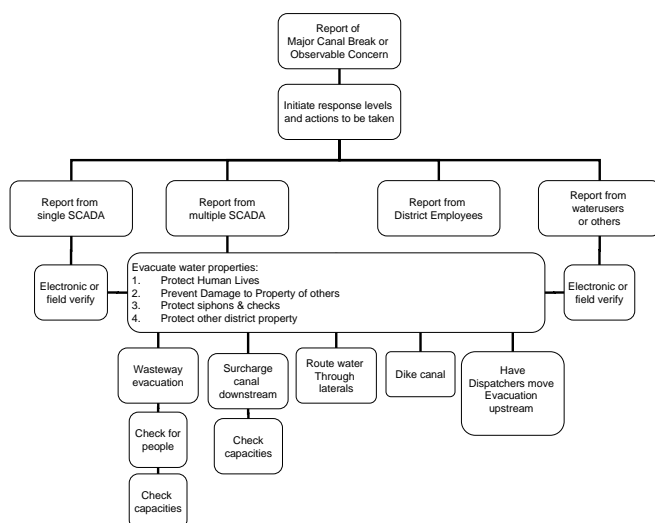
Include telephone numbers from, but not limited to, the following:

- Fire Agencies (all districts/counties) (911)
  - Grand Junction Fire Department – Emergencies (911)
  - Fruita Lower Valley Fire Protection District – 168 N Mesa St (970) 858-3133
- County Emergency Government Offices – Emergencies (911)
  - Mesa County Emergency Management - 215 Rice St (970) 244-1763
  - Mesa County Emergency Medical Services – 215 Rice St (970) 255-5078
  - Mesa County Hazardous Materials Manager (970) 257-9336
- City and County Government offices
  - Mesa County Government emergencies (911) – Emergency Mgmt (970) 244-1763
- Ambulance Service(s)
  - St. Mary’s Care Flight – 2635 N 7<sup>th</sup> St – Grand Junction, CO (970) 800-332-4923
  - Fire Dept. Ambulance Services – 625 Ute Ave., Grand Junction, CO (970) 549-5830 (911)
- Hospitals
  - St. Mary’s Hospital & Regional Med Ctr–2635 N 7<sup>th</sup> St-Grand Junction, CO (970) 298-2273
  - Community Hospital-2021 N 12<sup>th</sup> St-Grand Junction, CO (970) 242-0920
- Police/State Highway Patrol agencies – Emergencies (911)
  - Grand Junction Police Department – 625 Ute Ave (970) 244-3555
  - Fruita Police Department – 325 E Aspen (970) 858-3008 (Emergencies 911)
  - Colorado State Patrol – 554 Jurassic Ct, Fruita, CO – 911 (970) 249-4392
  - Mesa County Sheriff – (970) 244-3500
- Highway and Public Works departments
  - CDOT – 222 S 6<sup>th</sup> St., Grand Junction, CO, Regional Director (970) 683-6202
- Railroads
  - Union Pacific Railroad – 1-888-870-8777 – Denver – (303) 964-4064
  - Ametrak – 339 S First St, Grand Junction – (970) 241-2733
- Electrical Utilities
  - Xcel Energy – 1-800-895-1999
- Telephone/Communication utilities
  - Century Link – (800) 603-6000
- Underground utilities/pipelines
  - Ute Water emergencies (daytime water) (970) 244-1572 (daytime sewer) 256-4180  
Emergency Nights and Weekends (970) 242-6707
  - Fruita Public Works – 900 Kiefer Ave (970) 858-9558
- Natural gas utilities
  - Xcel Energy – (800) 895-2999
- Bureau of Reclamation Offices
  - Area Office – 445 W Gunnison Ave., Grand Junction (970) 248-0600
  - Emergency Notification Duty Officer (24-hour) – Ed Warner, Area Manager, 201-5548



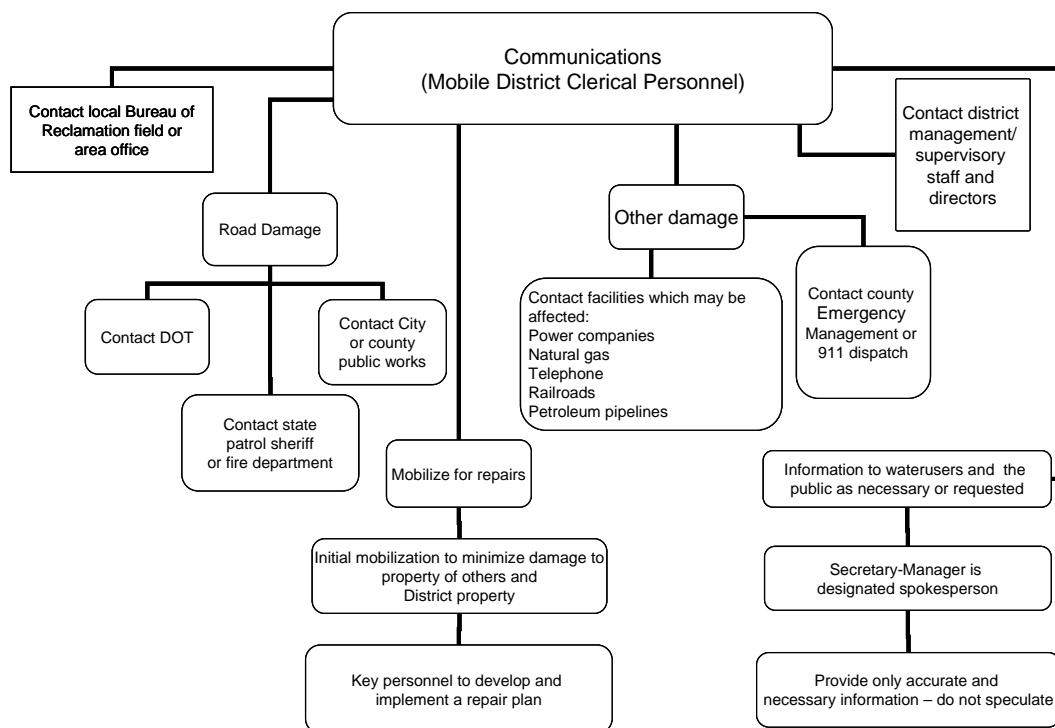
## APPENDIX E

### Decision flow chart for canal break and canal evacuation procedures.



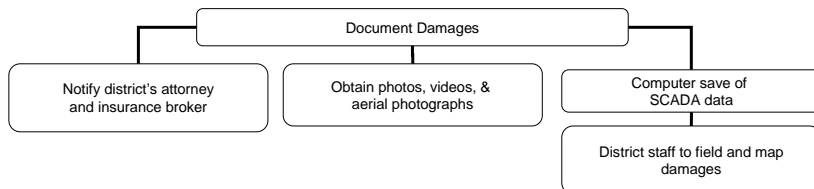
## APPENDIX F

### Notifications Flow Chart.

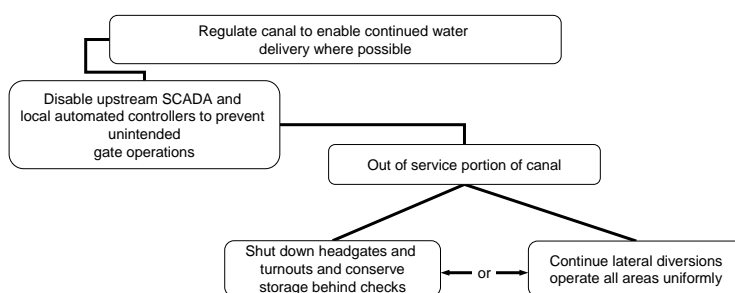


## APPENDIX G

Documentation Flowchart



Canal Post-evacuation Flowchart



# Grand Valley Water Users Association

## Government Highline Canal Water Management Plan Volume II

June 2017

*Prepared by:*



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Appendix H – 2015 FOA Application

Appendix I – 2017 USBR Review of Operations and Maintenance Report for CRIDs 214 and 215

# 1. Summary

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## 1 Volume II Summary

As the managing entity for a substantial portion of the Grand Valley Project (GVP) the Grand Valley Water Users Association (GVWUA or Association) exists to provide irrigation water to the lands within its service area to which the water is appurtenant through subscriptions of stock in the Association. The Association operates and maintains the 55-mile long Government Highline Canal and 150 miles of piped and open laterals, providing irrigation water to approximately 23,340 acres of irrigated land. The Association also operates and maintains the Roller Dam, Canyon canal, Power canal and Grand Valley Power Plant in conjunction with the Orchard Mesa Irrigation District. The Association must continually seek to repair, maintain and improve the infrastructure of the GVP in order to safely and effectively deliver water to the irrigated lands within its service area.

Volume II of the GVWUA Water Management Plan (WMP) provides a roadmap for navigating the complexities of the necessary infrastructure improvements. Understanding the existing conditions, complex funding mechanisms, costs, and benefits of each potential project is critical to developing a useful water management plan.

Initially, an existing conditions assessment was performed to create a foundation for understanding the infrastructure needs. GIS mapping was obtained and edited to include operational needs and assessments of existing infrastructure. The USBR Review of Operations and Maintenance Report and USBR Geophysical Inspections 214 and 215 were referenced to include previously identified deficiencies. Through this process potential projects were identified and an inventory of projects was established.

Balancing safety, administrative, operational and maintenance needs with available funding presents an ongoing challenge for the Association. Often, Association revenue is unable to fully cover the costs of improving and maintaining the water delivery system. A significant planning effort is required so that the Association can take advantage of grant funding available through their partners at Reclamation, the state of Colorado and other potential beneficiaries of good water stewardship. This Volume II of the 2017 Water Management Plan provides costs estimates for significant segments of canal lining. Efficiency projects like canal lining provide significant benefit to the Association and the broader water community,

The myriad of projects in the project inventory provide varying degrees of value. For this reason, projects were analyzed for multiple criteria. Criteria include: cost, fundability, safety benefit, and operational benefit.

This Water Management provides infrastructure inventory and canal needs, cost estimates, funding sources and a prioritized project inventory. The purpose of this WMP is to assist in GVWUA decision making process.



## 2. Existing Conditions Assessment

---

### 2 Existing Conditions Assessment

#### 2.1 Overview

The Existing Conditions Assessment is intended to summarize the canal condition to help provide a comprehensive list of projects, or project inventory, for the canal. This Existing Conditions Assessment has been primarily developed from five (5) sources: 1) GVVUA Management Staff Visual and Physical Inspections, 2) USBR Geophysical Inspection CRID 214, 3) USBR Geophysical Inspection CRID 215, 4) Grand Valley Drainage District GIS Portal, and 5) USBR Review of Operations and Maintenance Report.

A color graphic which summarizes the existing conditions assessment is included in Appendix A. This graphic is color-coded to describe safety concerns, seepage issues, and geophysical inspection recommendations throughout the canal relative to prominent canal features. The graphic is intended to be a quick reference for canal infrastructure status.

This same information is included in a more comprehensive mapbook, which can be found in Appendix B.

The project inventory, which is a summary of all projects that have been identified as a result of this existing conditions assessment, is located in Appendix C.

## 2. Existing Conditions Assessment

### 2.2 General Status of Canal Segments from Staff Inspections

The GVVUA management staff provided mapping of the entire Government Highline Canal which included a graphical representation of the staff's assessment of the existing canal conditions. The maps identified the observed areas of canal seepage in relation to the management staff's safety concerns associated with a potential canal breach, placing special emphasis on areas where damage to down-gradient property would be significant. Stationing has been established to consistently identify spatial proximity of projects. The areas of concern have been subdivided into segments for lining cost estimates and ease of reference. The segments are color coded based on presence of seepage and safety concerns. Table 2.1.1 summarizes the location and condition of the canal segments. A breakdown of the color coding is provided below.

**No Lining Required** – No seepage, may have other projects

**Low Safety Priority** – Seepage, canal breach is not a major concern

**Medium Safety Priority** – Seepage, canal breach is of medium concern

**High Safety Priority** – Seepage, canal breach is a high safety concern

**Highest Safety Priority** – Seepage, canal breach is of highest safety concern

\* Note Regarding Canal Stationing – The purpose of the overall canal stationing is for ease in identifying future canal improvement projects. The location and length of proposed project segments that will be funded, designed and constructed in the future will be easily identified and tracked through the stationing metric. A detailed field survey of the entire canal was not completed in order to create the stationing. The stationing was created using the detailed field survey done by USBR surveyors for recent funding purposes with stationing created for projects identified as East End Lower and East End Middle and then extrapolated in both directions from that location. There is a certain amount of inherent error in this methodology, but it will prove to be sufficiently accurate as a means of identifying future project segments.

\*\* The “First 500” is a project that is already being undertaken at the time of preparation of this document. See the Dam and Canyon Facilities Master Plan (SGM, Aug 2016) for more details.

## \\ 2. Existing Conditions Assessment

Table 2.1.1 Summary of Canal Segment Status

Starting Station	Ending Station	Segment Designation	Description	Assessment
1014+00	1019+00	<b>The First 500</b>	Open Canal	Overtopping Concerns
1019+00	1036+70	<b>UL-1</b>	Open Unlined Canal	Seepage Observed
1038+75	1064+60	<b>UL-2</b>	Open Unlined Canal	Seepage Observed
1065+50	1084+40	<b>UL-3</b>	Open Unlined Canal	Seepage Observed
1086+00	1104+70	<b>UL-4</b>	Open Unlined Canal	Seepage Observed
1105+00	1142+00	<b>TUN-1</b>	Tunnel No. 1	
1142+00	1148+47	<b>LIN-1</b>	Previously Lined Canal	
1149+00	1202+75	<b>UL-5</b>	Open Unlined Canal	Seepage Observed
1204+65	1226+80	<b>UL-6</b>	Open Unlined Canal	Seepage Observed
1227+00	1243+58	<b>TUN-2</b>	Tunnel No.2	
1243+60	1258+80	<b>UL-7</b>	Open Unlined Canal	Seepage Observed
1259+47	1334+00	<b>TUN-3</b>	Tunnel No. 3	
1334+00	1374+70	<b>UL-8</b>	Open Unlined Canal	Seepage Observed
1374+70	1412+00	<b>UL-9</b>	Open Unlined Canal	Seepage Observed
1412+00	1463+25	<b>UL-10</b>	Open Unlined Canal	Seepage Observed
1465+25	1513+00	<b>UL-11</b>	Open Unlined Canal	Seepage Observed
1513+00	1527+00	<b>UL-12</b>	Open Unlined Canal	Seepage Observed
1527+00	1918+22	<b>LIN-2</b>	Previously Lined Canal	
1918+50	1929+50	<b>UL-13</b>	Open Unlined Canal	Seepage Observed
1929+75	1969+00	<b>UL-14</b>	Open Unlined Canal	Seepage Observed
1969+00	2000+00	<b>UL-15</b>	Open Unlined Canal	Seepage Observed
2000+00	2054+00	<b>UL-16</b>	Open Unlined Canal	Seepage Observed
2055+25	2086+00	<b>UL-17</b>	Open Unlined Canal	Seepage Observed
2086+00	2127+50	<b>UL-18</b>	Open Unlined Canal	Seepage Observed
2127+50	2137+50	<b>UL-19</b>	Open Unlined Canal	Seepage Observed
2137+50	2184+00	<b>UL-20</b>	Open Unlined Canal	Seepage Observed
2184+00	2230+50	<b>UL-21</b>	Open Unlined Canal	Seepage Observed
2230+50	2275+00	<b>UL-22</b>	Open Unlined Canal	Seepage Observed
2276+00	2283+00	<b>UL-23</b>	Open Unlined Canal	Seepage Observed
2283+00	2328+00	<b>UL-24</b>	Open Unlined Canal	Seepage Observed
2328+00	2373+00	<b>UL-25</b>	Open Unlined Canal	Seepage Observed
2373+00	2419+25	<b>UL-26</b>	Open Unlined Canal	Seepage Observed
2420+25	2469+00	<b>UL-27</b>	Open Unlined Canal	Seepage Observed
2469+00	2516+25	<b>UL-28</b>	Open Unlined Canal	Seepage Observed
2516+25	2563+50	<b>UL-29</b>	Open Unlined Canal	Seepage Observed
2565+50	2585+25	<b>UL-30</b>	Open Unlined Canal	Seepage Observed
2586+25	2628+25	<b>UL-31</b>	Open Unlined Canal	Seepage Observed
2628+25	2670+25	<b>UL-32</b>	Open Unlined Canal	Seepage Observed
2671+50	2732+00	<b>UL-33</b>	Open Unlined Canal	Seepage Observed
2733+00	2787+00	<b>UL-34</b>	Open Unlined Canal	Seepage Observed
2787+00	2841+75	<b>UL-35</b>	Open Unlined Canal	Seepage Observed
2845+00	2887+75	<b>UL-36</b>	Open Unlined Canal	Seepage Observed
2887+75	2930+50	<b>UL-37</b>	Open Unlined Canal	Seepage Observed
2930+50	2973+25	<b>UL-38</b>	Open Unlined Canal	Seepage Observed
3748+29	3820+53	<b>LIN-3</b>	Lined, or Piped Canal	

## 2. Existing Conditions Assessment

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### Highest Safety Priority Sections:

- “The First 500”: The canal in this section is in overall disrepair and there are overtopping concerns from both management staff and the Bureau of Reclamation. Overtopping in this segment could result in damage to canal facilities and put operation of the canal in jeopardy.
- Segments UL-17 through UL-19: These segments are commonly referred to as the Paradise Hills Section of the Canal. They begin just after the A7 Check Structure and end at the L10 Headgate. These segments have a weathered shale bedrock and down-gradient homes in very close proximity. A canal breach in this section would cause significant property damage and could result in injuries or fatalities.

### High Safety Priority Sections:

- Segments UL-13 through UL-16: These segments begin at the Indian Wash Flume and extend to the A7 Check Structure. There is heavy urbanization around the canal, however the drainage infrastructure in these areas is substantial and the gradient from the canal protects much of the nearby area from flooding.
- Segments UL-20 and UL-21: These segments begin immediately after the L10 Headgate and end at the 1220 Flume. Although there are residences in close proximity to the canal in this section, the gradient from the canal is such that the properties would not be at a high risk for flooding. Further downstream, however, there is substantial urbanization at risk for flood damage.

### Medium Safety Priority Sections:

- Segments UL-5 and UL-6: These segments are located between Tunnel 1 and Tunnel 2 in the DeBeque Canyon. Railroad tracks are present immediately down-gradient of the canal. Property damage could be substantial.
- Segments UL-28 and UL-29: These segments begin after Hunter Wash and extend to the Adobe Wash Flume. This area experiences substantial seepage as the canal banks have weathered shale bedrock that underlies the soil. Such high seepage increases the risk of a canal breach, however, this section is less densely populated.

### Low Safety Priority:

- Most unlined canal segments fall within this category. While circumstances are unique to all low safety priority segments, they typically are in less urbanized areas, and/or are at a lower risk for a canal breach.

## 2. Existing Conditions Assessment

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### 2.3 USBR Geophysical Inspections

Several instances of canal seepage at discrete locations were recently observed. This spurred further investigation by the United States Bureau of Reclamation and resulted in two geophysical inspection reports. The published reports are as follows.

a. Geophysical Technical Memorandum CRID 214

Title: “Geophysical Inspection Report: Government Highline Canal, Reach 2, CRID 14

Date of Final Report: November 2014

The geophysical investigations described in this report were performed as discrete locations along the Government Highline Canal to characterize seepage areas observed by the inspection team. The geophysical investigations were completed using the electrical resistivity imaging (ERI) and self-potential (SP) methods. A summary of the findings of the investigation (taken directly from the Report), with corresponding project stationing at the investigation sites, is provided as a table in Appendix F.

b. Geophysical Technical Memorandum CRID 215

Title: “Geophysical Inspection Report: Government Highline Canal, Reach 3, CRID 15

The geophysical investigations described in this report were performed as discrete locations along the Government Highline Canal to characterize seepage areas observed by the inspection team. The geophysical investigations were completed using the electrical resistivity imaging (ERI) and self-potential (SP) methods. A summary of the findings of the investigation (taken directly from the Report), with corresponding project stationing at the investigation sites, is provided as a table in Appendix F.

Aside from the geophysical inspection results, these memoranda contain recommendations for each location with observed seepage. The locations are given a designation such as GP1, GP2, etc. In many cases, a canal lining project will address the recommendations, however, these recommendations also represent discrete projects that can be completed independent of a canal lining projects, typically at a lower cost. These discrete projects are listed in the project inventory as “Address Concerns of USBR CRID 214(or 215) – GP#”. Since the Bureau of Reclamation has placed high priority on these seepage points, all have been given Category A priority designation (a breakdown of priority designations can be found in Section 5.2).

## 2. Existing Conditions Assessment

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### 2.4 USBR Review of Operations and Maintenance Reports

The GVVUA system has been examined under the “Directive for the Review of Operation and Maintenance Program Examination of Associated Facilities (Facilities other than High- and Significant-Hazard Dams)” since 1954. The most recent full system review was conducted in 2014, with an urban canal review in 2017 (completed after preparation of this document – Appendix I contains a copy of the report). The finished reports offer a series of recommendations divided into three categories, described by the Bureau of Reclamation as:

**Category 1** – “Recommendations involving the correction of severe deficiencies where immediate and responsive action is required to ensure structural safety, operational integrity of a facility, or operating personnel/public safety”. These recommendations are to be completed quickly within a mutually agreed upon timeframe based on the severity of the deficiency.

**Category 2** – “Recommendations covering a wide range of important matters where action is needed to prevent or reduce further damage, preclude possible operational failure of the facility, or reduce safety risks to operating personnel/public”. These recommendations are to be completed as soon as practicable following receipt of the report.

**Category 3** – “Recommendations covering less important matters but believed to be sound and beneficial suggestions to improve or enhance the O&M of the project or facility.”

The 2014 Report contains both new recommendations and those that have not yet been addressed from previous reports. A table summarizing the recommendations from the 2014 report that are incomplete can be found in Appendix G. Each recommendation represents an individual project that is addressed in the project inventory (found in Appendix C).

Since the preparation of this report, a more recent Review of Operations and Maintenance has been generated by Reclamation. The new recommendations from the report are not referenced in this document, or considered as potential projects. The new document, entitled, “Review of Operations and Maintenance Report Grand Valley Water Users Association Government Highline Canal CRID 214 and 215 Grand Valley Project, Colorado”, can be found in Appendix I. It is worth noting that this is only for the urban sections of the canal (CRID 214 and 215).

## 2. Existing Conditions Assessment

### 2.5 Undershot Condition Summary

The USBR Review of Operations and Maintenance Reports provide recommendations and projects for all canal infrastructure elements, including undershots. Undershots are of particular importance as they can often be responsible for canal breaches. Replacement of undershots requires the excavation of the canal bottom and sides, so undershots in poor condition should be replaced any time their respective canal sections are lined. A table summarizing the inventory and condition of undershots on the Government Highline Canal can be found in Appendix E.

Most undershots on the canal do not need anything more than routine maintenance and inspection, however some warrant replacement or repair projects. Table 2.5.1, below, summarizes undershot specific projects and provides a relative priority for each as assigned by GVVUA management.

**Table 2.5.1 Undershot Project Inventory**

<b>Undershot:</b>	<b>Canal Segment:</b>	<b>Project Description:</b>	<b>Relative Priority:</b>
US-1	UL-4	Will likely require sleeving or lining. Cure-in-place sprays could avoid excavation.	High
US-3	UL-8	Sleeve with plastic pipe or bore with steel casing.	Low
US-11	UL-17	Replace or sleeve existing undershot	High
US-15	UL-19	Replace the CMPs with Box Culverts, or siphon canal and regrade wash.	High
US-18	UL-22	Line or sleeve the CMP undershot. Spray-in-liner may be necessary.	Medium



## 2. Existing Conditions Assessment

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### 2.6 Other Canal Structure Needs

The Government Highline Canal has an abundance of infrastructure elements associated with its operation and function. Such elements include: spill gates, check structures, bridges, the moss and debris removal structure, and flumes. Many of these structures have been recently built or replaced, so only small maintenance projects are required. The USBR Operations and Maintenance Reports cover most of these needs, however, the GVVUA management staff has concerns with some specific elements.

GVVUA has safety and operational concerns related to its spill gates. Spill gates function not only as a control mechanism for handling unknown demand, but also as a safety measure. In the case of a canal breach, spill gates can help mitigate down-gradient damage by discharging water into natural washes or conveyance channels rather than allowing the full volume to flow through the breach. Having spill gates that can be controlled remotely decreases response times for the gates to be open, making them vital to canal and community safety. Currently, the majority of the canal's spill gates must be controlled on-site and many must be controlled mechanically. The upgrading of these spill gates is of high priority to the GVVUA.

Other canal structure needs include the renovation of O&M bridges with timber decking. It is a goal of the Association to replace all timber bridges with steel decking for the safety of ditch riders and other maintenance staff. Table 2.6.1 summarizes other canal structure related projects of high importance to the GVVUA.

## \\ 2. Existing Conditions Assessment

Table 2.6.1 Other Canal Structure Project Inventory

Approximate Station:	Canal Segment:	Structure Name	Project Description:
1037+00	UL-1	"Station 22" Spill Gate *	Replace the two spillway radial gates with new, automated gates.
1916+50	LIN-2	Indian Wash Spill Gate	Replace the hand crank spillway gates with new, remote controlled gates. Repair or replace concrete as necessary
2372+50	UL-25	Persigo Wash Spill Gate	Replace the hand crank spillway gates with new, remote controlled gates. Repair or replace concrete as necessary
2669+50	UL-32	Little Salt Wash Spill Gate	Replace the hand crank spillway gates with new, remote controlled gates. Repair or replace concrete as necessary
2975+50	UL-38	Big Salt Wash Spill Gate	Add remote control system to existing spill gates at the M&DRS.
3226+25	LIN-3	Highline Lake Spill Gate	Add remote control system to existing spill gates.
3500+00	LIN-3	East Salt Wash Spill Gate	Add remote control system to existing spill gates.
2973+25	UL-38	Moss and Debris Removal Structure	Control system to be upgraded.
2976+00	LIN-3	O&M Bridge at Big Salt Wash	Existing timber bridge deck to be replaced with new steel deck
2230+50	UL-21	O&M Bridge at 1220 Flume	Existing timber bridge deck to be replaced with new steel deck.
2671+00	UL-32	O&M Bridge at Little Salt Wash	Existing timber bridge deck to be replaced with new steel deck.

\*Additional information regarding "Station 22" Spill Gate can be found in Dam and Canyon Facilities Master Plan (August 1, 2016)

## 3. Funding Sources

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### 3 Available Funding Sources for Canal Improvement Projects

#### 3.1 Colorado River Basin Salinity Control Program

Water salinity poses a major concern for water users in lower basin states and Mexico. High salinity is detrimental to agricultural, domestic, and industrial water uses. In an effort to control Colorado River salinity, congress passed the Colorado River Basin Salinity Control Act, which, allows the Bureau of Reclamation to work to reduce salinity. One way in which they accomplish their goals is by funding projects that reduce salt induction into the Colorado River. Canal lining and piping is a solution to reducing salt loadings in the river and thus is subject to grants from the Bureau of Reclamation.

The grants come in the form of Funding Opportunity Announcements (FOA)s which provide an application process that allows the USBR to vet potential projects based on dollars of funding per ton of salinity reduction. The 2015 FOA appeared to fund projects that could be completed at \$60/ton. The next FOA round is in 2017.

The Bureau of Reclamation has provided estimated annual salinity reduction numbers for canal lining projects on the Government Highline Canal. Using the salinity reduction numbers provided, and the assumption that \$60/ton of salinity reduction can be provided by the Bureau of Reclamation, funding estimates can be established (assuming an annual amortization of 3.375%). Table 3.1.1 summarizes estimated annual salinity reduction in each canal segment and potential funding for lining each segment.

## \\ 3. Funding Sources

**Table 3.1.1. Summary of Salinity Funding Opportunities**

Section Designation	Length (ft)	Annual Reduction (tons/(ft*yr))	Total Annual Reduction (tons/yr)	Potential funding at \$60/ton
UL-8	4070	0.507	2063	\$ 2,969,964.99
UL-9	3730	0.507	1890	\$ 2,720,908.30
UL-10	5125	0.504	2583	\$ 3,718,574.68
UL-11	4775	0.501	2394	\$ 3,446,483.85
UL-12	1400	0.501	702	\$ 1,010,623.08
UL-13	1100	0.183	202	\$ 290,806.07
UL-14	3925	0.183	719	\$ 1,035,096.86
UL-15	3100	0.183	568	\$ 817,712.12
UL-16	5400	0.183	989	\$ 1,423,798.05
UL-17	3075	0.183	563	\$ 810,513.95
UL-18	4150	0.183	760	\$ 1,094,121.86
UL-19	1000	0.183	183	\$ 263,453.03
UL-20	4650	0.183	852	\$ 1,226,568.19
UL-21	4650	0.183	852	\$ 1,226,568.19
UL-22	4450	0.183	815	\$ 1,173,301.73
UL-23	700	0.183	128	\$ 184,273.15
UL-24	4500	0.183	824	\$ 1,186,258.43
UL-25	4500	0.183	824	\$ 1,186,258.43
UL-26	4625	0.183	847	\$ 1,219,370.02
UL-27	4875	0.183	893	\$ 1,285,593.18
UL-28	4725	0.183	866	\$ 1,246,723.06
UL-29	4725	0.183	866	\$ 1,246,723.06
UL-30	1975	0.183	362	\$ 521,147.52
UL-31	4200	0.183	769	\$ 1,107,078.56
UL-32	4200	0.183	769	\$ 1,107,078.56
UL-33	6050	0.183	1108	\$ 1,595,114.50
UL-34	5400	0.183	989	\$ 1,423,798.05
UL-35	5475	0.183	1003	\$ 1,443,952.92
UL-36	4275	0.183	783	\$ 1,127,233.44
UL-37	4275	0.183	783	\$ 1,127,233.44
UL-38	4275	0.183	783	\$ 1,127,233.44

An example of the 2015 FOA Application for segment UL-10 is included in Appendix H. Any attempt to receive Salinity Control Program Funding will require similar applications to be completed.

## 3. Funding Sources

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### 3.2 Other Potential Funding Sources

The Grand Valley Water Users Association may also desire to seek other sources of funding to supplement USBR salinity funding for canal lining projects. Below is a summary of organizations that may be able to provide funding sources.

#### **Colorado River Conservation District –**

The Colorado River Conservation District (also known as: Colorado River District, River District, CRWCD, CRD) is the principal water policy and planning agency for the Colorado River Basin within the State of Colorado. The River District will provide grant funding for development, enhancement, or protection of water resources in the Colorado River Basin. The 2018 Grant Program Cycle opens December 1, 2017.

#### **Colorado Water Conservation Board (CWCB) –**

The CWCB is part of the Colorado Department of Natural Resources, and it represents each major water basin, Denver, and other state agencies in a joint effort to effectively use water wisely. The CWCB offers water efficiency grants. These grants are divided into four programs: Water Conservation Planning Grants, Water Conservation Implementation Grants, Drought Mitigation Planning Grants, and Water Resource Conservation Public Education and Outreach Grants.

#### **United States Bureau of Reclamation (USBR) –**

The Bureau of Reclamation's mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. To help accomplish this goal they provide programs such as the Colorado River Basin Salinity Control Program. Other grant opportunities include:

##### **Field Services Grants –**

Field Services Grants are available through the Water Conservation Field Services Program. These are cost-share grants that require matching funds at 50% or better. These grants fund water management planning or implementation of activities identified in a water management plan. These activities include: water measurement, automation, and products to improve conveyance efficiencies.

##### **WaterSMART Grants –**

WaterSMART Grants are cost share grants that require matching funds at 50% or better. The grants are available for projects which conserve and use water more efficiently, increase use of renewable energy, protect endangered species, or facilitate water markets. These grants give preference to projects that can be completed within 24 months.

## 3. Funding Sources

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### **Upper Colorado River Endangered Fish Recovery Program –**

The Upper Colorado River Endangered Fish Recovery Program seeks to protect four species of fish that are found exclusively in the Colorado River System. These fish are the Humpback Chub, Bonytail, Colorado Pikeminnow, and the Razorback Sucker. Of specific concern to the program is the 15-mile reach between the Roller Dam in Cameo, CO to the confluence with the Gunnison River in Grand Junction, CO. Projects that promote water use efficiency may receive grant money from the program.

### **Potential Beneficiaries and Partners –**

Projects provide an opportunity for the GVVUA to partner with potential beneficiaries. Beneficiaries will typically fall within the following three categories:

#### **Public Entities –**

There are various public entities that may have mutual or shared interest in the completion of canal infrastructure projects. Such entities may include any local municipalities, Mesa County, and the Grand Valley Drainage District.

#### **Private Entities –**

There are many private entities along the canal that may help provide funding for improvement projects. Examples of these entities include individual landowners, homeowner's associations, or private businesses located near the canal.

#### **Nongovernmental Organizations (NGO) –**

There are multiple nongovernmental organizations whose mission statements may align with a potential project benefit. For example, an organization that desires water conservation may be pleased with the increased water returns from higher conveyance efficiencies on the canal and therefore may be willing to help fund projects. Examples of NGOs are: The Nature Conservancy, Trout Unlimited, Colorado Water Trust, and the Environmental Defense Fund.

## 4. Canal Lining Options

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### 4 Canal Lining Options

#### 4.1 Overview

While the exact need and reason for canal lining varies based on section, a large portion of the canal could benefit from a canal liner. Lining a canal drastically reduces seepage, which improves system efficiency. In the case of the Government Highline Canal, decreasing or eliminating seepage also reduces salinity inflows into the Colorado River.

From a safety perspective, canal lining provides structural rigidity to canals. They prevent mechanical erosion of canal embankments, and reduce the potential for vegetation on or near the canal. Since root systems can destabilize embankments, a decrease in nearby vegetation increases canal safety.

In terms of infrastructure, canal lining represents some of the largest and most important potential projects. A properly executed lining project requires extensive modeling and a thorough understanding of inter-related utilities and infrastructure (such as overshoots, undershoots, bridges, drains, etc).

Costs for canal lining tend to be highly variable based on a number of parameters including cross-section dimensions, segment length, other canal infrastructure features (such as undershoots or checks) and liner types. The following sections describe some of the various liner options, followed by opinions of probable cost for the most likely option (the USBR Typical Canal Liner – pictured in Figure 4.2.1). A comprehensive breakdown of the project costs can be found in Appendix D.



## \\ 4. Canal Lining Options

### 4.2 USBR Typical Canal Liner

The USBR Typical Canal Liner contains a PVC geomembrane sandwiched between two layers of geotextile fabric. This is then topped with a 3-inch layer of shotcrete resulting in a seamless impervious surface for the canal. Cross section details for the typical liner configuration are pictured below, in Figure 4.2.1.

The USBR Typical Canal Liner is very cost effective means to improve canal efficiency, and stability. This liner requires substantial right-of-way around the canal as large embankments are still required. Because the Government Highline Canal is predominantly rural, and already has extensive embankments, this liner is ideal for most lining projects the GVWUA may undertake.

This typical liner detail was included as the basis for cost estimates in recent funding applications, and is being used during the ongoing lining of section UL-10. Figure 4.2.2 shows a portion of the lining on section UL-10 nearing completion. For all lining projects listed in the project inventory, this canal liner was assumed. This liner cross section has been used successfully on past projects to greatly reduce the seepage losses in the Government Highline Canal and to improve canal safety.

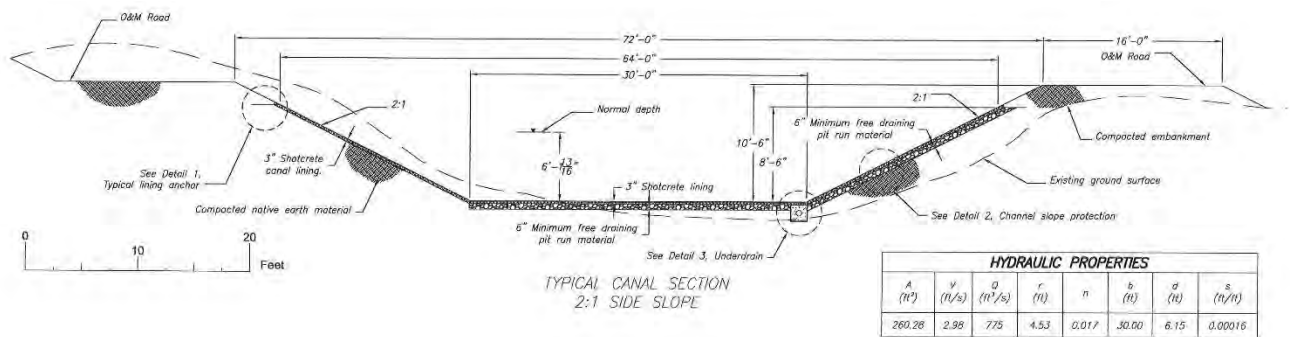


Figure 4.2.1. USBR Typical Canal Liner Cross Section

## 4. Canal Lining Options

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Figure 4.2.2. USBR Typical Canal Liner Cross Section Nearing Completion in Palisade, CO



## 4. Canal Lining Options

### Typical Construction Steps

- a. Remove existing canal vegetation.
- b. Shape the canal to provide desired cross section and remove unsuitable earthen material. Over-excavate in order to accommodate imported compacted fill and 6 inches of filter drain material.
- c. Install an underdrain pipeline similar to the underdrain used in USBR liner standards.
- d. Compact all surfaces.
- e. Install bulkheads to create a length of trapezoidal canal section that is approximately one-half the width of the channel bottom.
- f. Install 9-inch PVC waterstop along the bottom and sides of the canal so that half of the waterstop extends beyond the bulkhead.
- g. Install welded wire fabric reinforcing steel of a size to provide shrinkage and temperature cracking resistance for the cured concrete. Tie the wire fabric between the canal sections using an 18-inch long reinforcing steel bar, centered at the joint.
- h. Using a low slump concrete pour the side walls of the canal to a minimum thickness of 5 inches. Vibrate and finish the concrete using a vibrating roller screed attached to cables at the top of the canal.
- i. Pour and finish the canal bottom to a minimum thickness of 5 inches.
- j. Create a shallow control joint at each construction joint.
- k. Skip every other canal section and fill the remaining sections with concrete following the removal of the bulkheads. An example of this is shown below in Figure 4.3.2.



**Figure 4.3.2. Installation of Reinforced Concrete Canal Liner**

- l. After abutting canal sections have been poured and properly cured, add a flexible sealant to each control joint in order to help prevent seepage loss through the joint.

This liner alternative is more “structural” than the USBR typical liner described in this document. It should not, however, be considered as “self-supporting,” meaning that it must be properly supported on compacted soil. It is, however, highly durable and does offer “strength” not possible in the other liners. That being said, it is also estimated to add approximately 25% more to the costs shown in the OPCs in Appendix D

## 4. Canal Lining Options

### 4.4 Pre-cast Box Culvert

In very sensitive areas where safety is a significant concern, canal enclosure is often considered as an alternative to the open, lined canal. The enclosure must still be watertight and be strong enough to handle external forces such as overburden and traffic loads. Many water delivery systems have been successfully piped, including the lower portion of the Government Highline Canal. For flows of roughly 800 cfs (typical in the highest safety areas identified in this document), side-by-side pipelines would be required. In similar instances, water users in other areas have given strong consideration to pre-cast concrete box culverts. Figure 4.4.1, below, shows the installation of a pre-cast box culvert.



**Figure 4.4.1. Installation of Pre-cast Box Culvert**

Pre-cast concrete box culverts are manufactured to meet specific design criteria for flow and strength. They are reinforced with tongue and groove joints that can be made watertight with joint treatments applied during construction. Typical segments are 8 feet in length, depending upon the size of the box. Overall height and weight will dictate the method and cost of shipping, which can be significant. Most boxes are buried with a minimum of 2 feet of cover so that they are out of sight, but that is not always possible nor it is always necessary. Figure 4.4.2 displays a situation where cover was not used.



## 4. Canal Lining Options

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**Figure 4.4.2. Installed Pre-Cast Box Culvert with No Cover**

A pre-cast concrete box that is 14 feet wide by 8 feet deep has been preliminarily sized for this Water Management Plan. This size of box can be manufactured by Oldcastle Precast in Ogden, Utah and shipped to Grand Junction. It is likely that there are other manufacturers available, but not likely that there are any closer except in the Denver area. The box sections are built in 8-foot long segments, resulting in a 58,500 pound load for each segment. Shipping costs are a large portion of the cost for each segment. The most likely candidates for this alternative are Segments 17, 18 and 19. If these segments were to use the pre-cast box culvert, the anticipated increase in cost over the current OPC's would be approximately 320% when compared with the USBR alternative.

## 4. Canal Lining Options

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### 4.5 Cast-in-Place Concrete Box Culvert

Another canal enclosure option is a cast-in-place concrete box culvert. The advantages to this option include: 1) there are significantly fewer joints that could eventually lead to leakage and 2) this option is typically less expensive than the pre-cast option. The major disadvantage is the time associated with forming, pouring and curing of the concrete, particularly when weather conditions are so variable.

Regarding the joints, expansion/contraction and construction joints can be spaced at intervals that are much greater than the joints associated with 8-foot pre-cast segments. Joints can include PVC waterstop and can be treated with joint filler material to reduce leakage to a minimum.

Regarding the construction timing, this can be reduced by sequencing concrete pours of footings, walls and roof slabs. Start with a pre-determined footing segment length, 75 feet for example, and complete that pour. Skip a 75-foot segment and pour the next footing segment while the previous footing segment cures for several days. Form and pour the walls in the first segment while the second segment cures. Then move onto the walls in the second segment while the walls in the first segment cure. Then go back and start on the footing segment that was skipped while at the same time getting the next downstream footings segment poured. This procedure, or something similar, then proceeds for the entire box culvert length. The roof follows the walls, typically after several adjacent segments are completed and cured. Figures 4.5.1, 4.5.2, and 4.5.3 illustrate the placement of forms, construction, and completion of a cast-in-place box culvert, respectively.

Segments 17, 18 and 19 represent the most likely candidates for the cast-in-place box culvert. For these sections, the anticipated increase in cost over the current OPC's would be approximately 240% when compared with the USBR alternative.



## 4. Canal Lining Options

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Figure 4.5.1. Construction of Concrete Forms for Cast-In-Place Concrete Box Culvert



Figure 4.5.2. Construction Process for Cast-In-Place Concrete Box Culvert

## **// 4. Canal Lining Options**

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**Figure 4.5.3. Completed Cast-In-Place Concrete Box Culvert**

## 4. Canal Lining Options

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### 4.6 Opinions of Probable Cost

The Opinions of Probable Cost (OPC) included in this Water Management Plan originated with the cost estimates used by the USBR in the funding applications for the 2015 Colorado River Salinity Reduction Program Funding Opportunity Announcement (FOA). For the 2015 FOA, two projects were proposed for funding, design and construction, using the standard USBR canal lining alternative (previously described in Section 4.2). Both projects are in the Upper East portion of the canal and are described as Reach 1A Middle and Reach 1A Lower. The cost estimates developed for these two canal lining projects were used as the template for the OPC's in this document. Further explanation of the detail in the OPC's is provided below.

1. For some of the items in the template, the quantities and unit prices were identical in each of the two 2015 FOA estimates mentioned above. For several other items, the quantities are based on the canal cross sections in the respective unlined canal sections. The USBR provided J-U-B with canal profile and cross section CAD data from 1990. This data shows major changes between cross sections, but these changes do not correspond with the delineations of canal segments as previously defined. For this reason, an average canal perimeter and bottom width was calculated for each unlined canal segment. Quantities for most of the items in the OPC's were generated by multiplying the number of units (based on perimeter or bottom width) per foot in the template times the length of the proposed canal liner segment. The resultant quantity is then multiplied by the unit price derived from the two USBR estimates to obtain the total price.

Considering this methodology for generating costs, there are two items in the OPC's that merit additional discussion due to their potential impacts on future project costs. These items are listed in the OPC's as Items 9 and 10, Excavate Reusable Material and Import Fill Material, respectively. There was a wide variation in the quantities for these items in the two 2015 USBR FOA cost estimates, while perimeter data was similar for both segments. It is clear that detailed topographic survey was done for these canal segments so that cross sections and earthwork quantities could be calculated for the FOA. That level of detail was not available for the cost estimating done for this document, so the two 2015 FOA estimates were averaged in the template in order to quantify Items 9 and 10 in the OPC's.

2. Several of the template quantity calculations for Segments 1 through 7 of the Plan have been increased by a factor of 1.5 times the average canal perimeter or bottom width of Segment 8 to reflect the difference in canal size between the River Diversion and the Orchard Mesa siphon just upstream of Tunnel No. 3. Canal cross section data was not available upstream of the Price-Stubb Pump so a perimeter and bottom width analysis could not be completed.
3. Items 24 and 25, Line Transition to Structure Types 1 and 2, are further defined as follows:

The transition from trapezoidal channel into and out of existing structures such as bridges, check structures, and the like will typically require greater attention to detail and more complex construction. Therefore, separate cost items have been included in the template. A



## 4. Canal Lining Options

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Type 1 transition was added for those locations where a “standard” canal-width transition is likely. A Type 2 transition was added for those locations where the canal widens significantly upstream or downstream of the structure, for example, at the Fish Screening Structure.

### 4. Item 26, Culvert Crossings at Washes

This item was added to the template so that number of locations where the canal crosses an existing wash would be quantified, in the likely event that culvert replacement might be deemed necessary as part of future canal improvement projects. The evaluation of undershot conditions was not taken into account, as undershot replacement would likely occur anytime a canal segment is lined.

### 5. Contingency and Inflation

The 2015 FOA estimates did not include contingency on the direct project costs because it is not an allowable line item in federally-funded project budgets. Assuming that there is likely some contingency built in to the unit prices used by USBR in the FOA estimates, only a 10% contingency has been added to the template, whereas a contingency of 20% or more would be typical for OPC's created at this level of study.

Inflation has not been added to the OPC's. Inflation should be considered and added as project budgets are developed in the future for project segments.

### 6. Salinity

Most of the cost estimates included in Appendix D include a table showing the estimated salt loading for the segment and the “allowable cost” of the segment to meet a desired ratio of \$60 per ton of salt reduced per year. \$60 is a not an exact target, but represents the upper range of salinity projects funded in recent 2015 FOA.

The salt loading was estimated based upon information provided by USBR Grand Junction staff. This methodology was previously described in Section 3.1.

# 5. Project Priorities

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## 5 Project Priorities and Multiple Criteria Analysis

### 5.1 Overview of Multiple Criteria Analysis

Multiple Criteria Analysis (MCA) evaluates a project inventory based on several pre-defined criteria to aid in the decision making process. Criteria is weighted according to the priorities of the decision making body. For the Grand Valley Water User's Association, safety for the surrounding communities and economics are the principle drivers for ranking improvement projects.

The economics of a project involve both total cost and available funding. Since funding and grant opportunities change over time, it can be more useful to consider project beneficiaries rather than funding opportunities. For this reason, the project inventory sheet lists both project beneficiaries and current funding sources. All future Water Management Plan amendments and updates should use multiple criteria analysis, including an investigation of beneficiaries for all potential projects.

A project inventory with potential beneficiaries and external funding opportunities may be found in Appendix C.

# 5. Project Priorities

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## 5.2 Project Prioritization

Potential projects for the Government Highline Canal have been prioritized based on safety for the water users and surrounding communities, operational benefit (including loss to seepage, and importance toward the functionality of the canal system), importance to the Bureau of Reclamation, cost, and fundability. Due to the sheer number of potential projects, three categories have been created to tier the projects according to their urgency and importance. Below is the breakdown of priority categories.

- **“Category A” Projects:** This list consists of projects that are considered to have the highest safety concerns by GVWUA management staff, as well as projects that the management staff deems to be critical to canal operation. It also contains projects that are considered to be “Category 1” by the Bureau of Reclamation in their “Review of Operations and Maintenance Report”, projects that have a strong chance of being funded by USBR Salinity Funding, and unaddressed concerns from Geophysical Technical Memorandum CRID 214 & 215.
- **“Category B” Projects:** This list consists of projects that are considered to have high or medium safety concerns by GVWUA management staff, and projects deemed to be important to canal operation (including undershot replacements not in Category A). It also contains projects considered to be “Category 2” by the USBR.
- **“Category C” Projects:** This list consists of lining projects where seepage is present but not a major safety concern. It consists of minor repairs for undershots, and projects to be considered “Category 3” by the USBR.

## 5. Project Priorities

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### 5.3 “Category A” Projects

The 2017 evaluation of the project inventory resulted in the elevation of 24 projects into Category A. The justification for project inclusion is listed below:

- **Safety Concerns:** Lining Segments 17, 18 and 19 (commonly referred to as the Paradise Hills sections) is critical to the safety of the surrounding communities.
- **Fundability:** Lining projects for Segments 8, 9, 11, and 12 are included because of the high salinity reduction potential resulting in the potential for FOA funding.
- **Operational Benefit:** High priority undershot replacements/repairs are included in this category due to the high operational benefit they provide. Proper functionality of spill gates and the moss and debris removal structure are also critical to canal operation .
- **Importance to Reclamation:** All seepage site projects from the USBR Geophysical Inspection Reports fall within Category A, as these are identified as a priority to the Bureau of Reclamation. (Note: as of the preparation of this report, there were no USBR “Category 1” projects in the inventory. Had there been Category 1 issues, they would have been included.)

Once elevated to Category A, projects were prioritized by the GVVUA management staff. Order of prioritization does not necessarily reflect the order in which the projects will be completed. Budget, resource constraints, and constantly changing circumstances will likely play into order of completion. Table 5.3.1, provides the ranking given by the GVVUA management staff after performing a multiple criteria analysis.



## 5. Project Priorities

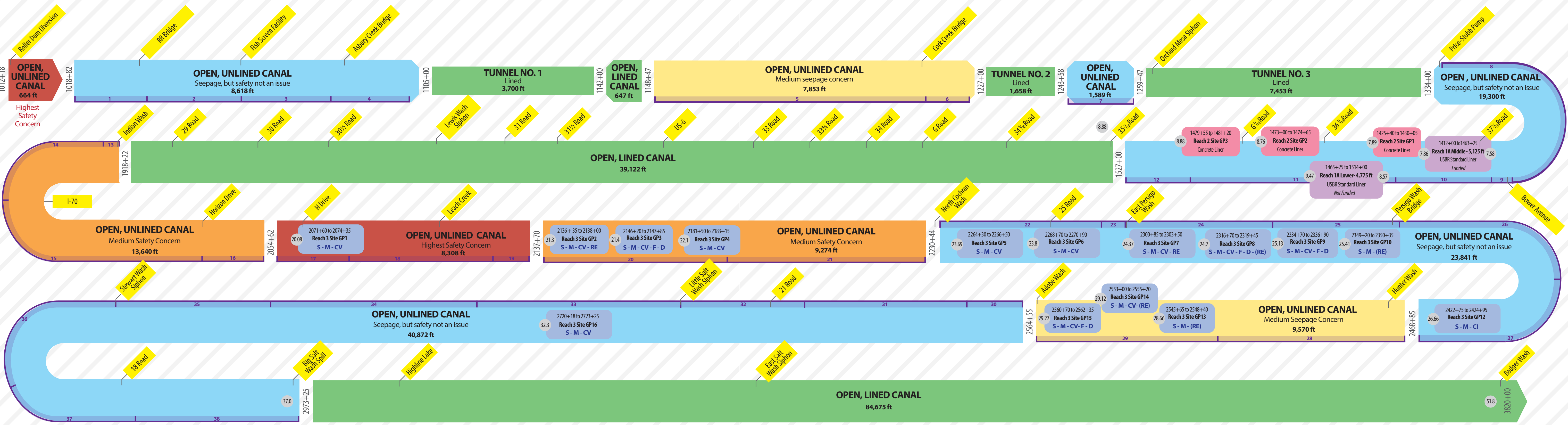
Table 5.3.1. Prioritized “Category A” Projects List

GVWUA Ranking	Project Description	Canal Segment	Relative Cost	Safety Benefit	Funding Ability	Operational Benefit
14	Repair and Replace "Station 22" Spill Gate	UL-1	Medium	High	Low	High
4	Sleeve or Line Undershot US-1	UL-4	Low	Minimal	Low	High
7	Line Canal Segment	UL-8	High	Minimal	High to Full	Medium
6	Line Canal Segment	UL-9	High	Minimal	High to Full	Medium
5	Line Canal Segment	UL-11	High	Minimal	High to Full	Medium
24	Address Concerns of USBR CRID 214 - GP2, GP3	UL-11	Low	Minimal	Low	Low
13	Replace Indian Wash Spill Gate	LIN-2	Medium	High	Low	High
10	Line Canal Segment	UL-17	High	High	Partial	Medium
2	Replace Undershot US-11	UL-17	Medium	Medium	Low	High
11	Address Concerns of USBR CRID 215 - GP1	UL-17	Low	Medium	Low	Low
8	Line Canal Segment	UL-18	High	High	Partial	Medium
9	Line Canal Segment	UL-19	High	High	Partial	Medium
12	Address Concerns of USBR CRID 215 - GP2	UL-19	Low	Medium	Low	Low
1	Replace Undershot US-15	UL-19	High	High	Low	High
17	Address Concerns of USBR CRID 215 - GP2, GP3, GP4	UL-20	Low	Medium	Low	Low
19	Address Concerns of USBR CRID 215 - GP5, GP6	UL-22	Low	Miminal	Low	Low
20	Address Concerns of USBR CRID 215 - GP7, GP8	UL-24	Low	Minimal	Low	Low
15	Replace Persigo Wash Spill Gate	UL-25	Medium	High	Low	High
21	Address Concerns of USBR CRID 215 - GP9, GP10	UL-25	Low	Minimal	Low	Low
22	Address Concerns of USBR CRID 215 - GP12	UL-27	Low	Minimal	Low	Low
23	Address Concerns of USBR CRID 215 - GP13, GP14, GP15	UL-29	Low	Miminal	Low	Low
16	Replace Little Salt Wash Spill Gate	UL-32	Medium	High	Low	High
18	Address Concerns of USBR CRID 215 - GP16	UL-33	Low	Minimal	Low	Low
3	Upgrade Moss and Debris Removal Structure Control System	UL-38	Low	Medium	Partial	High

Appendix A // Existing Conditions Assessment Graphic

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GRAND VALLEY GOVERNMENT HIGHLINE CANAL EXISTING CONDITION ASSESSMENT



LEGEND

CONDITION

TUNNEL OR LINED CANAL

OPEN, UNLINED CANAL

Seepage, but safety not an issue

OPEN, UNLINED CANAL

Medium Seepage Concern

OPEN, UNLINED CANAL

Medium Safety Concern

OPEN, UNLINED CANAL

Highest Safety Concern

PROJECTS & RECOMMENDATIONS

GVWUA 2015 FOA

Mile Post

Location

2015 FOA Name

FOA Improvements

USBRTechnical Manual CRID 2014

Mile Post

Stationing

Report Name

Recommended Improvement

USBRTechnical Manual CRID 2015

Mile Post

Stationing

Report Name

Recommended Improvement

S = Seepage Observed

M = Monitor

CV = Clear Vegetation

RE = Rebuild Embankment

(RE) = Possibly Rebuild Embankment

F = Install Filters

D = Install Dewatering Drains

CI = Check for Instability

Projects Identified in Master Plan

# Appendix B // System Maps

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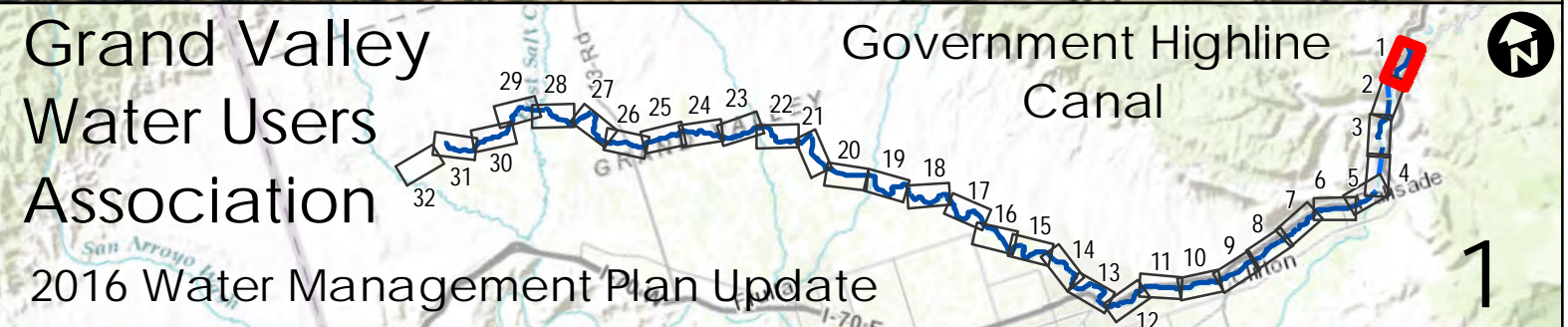
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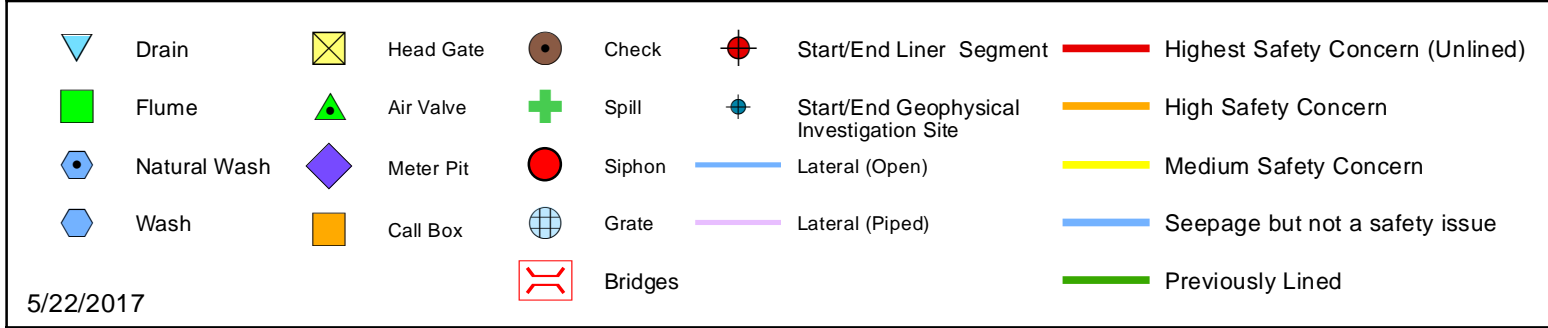
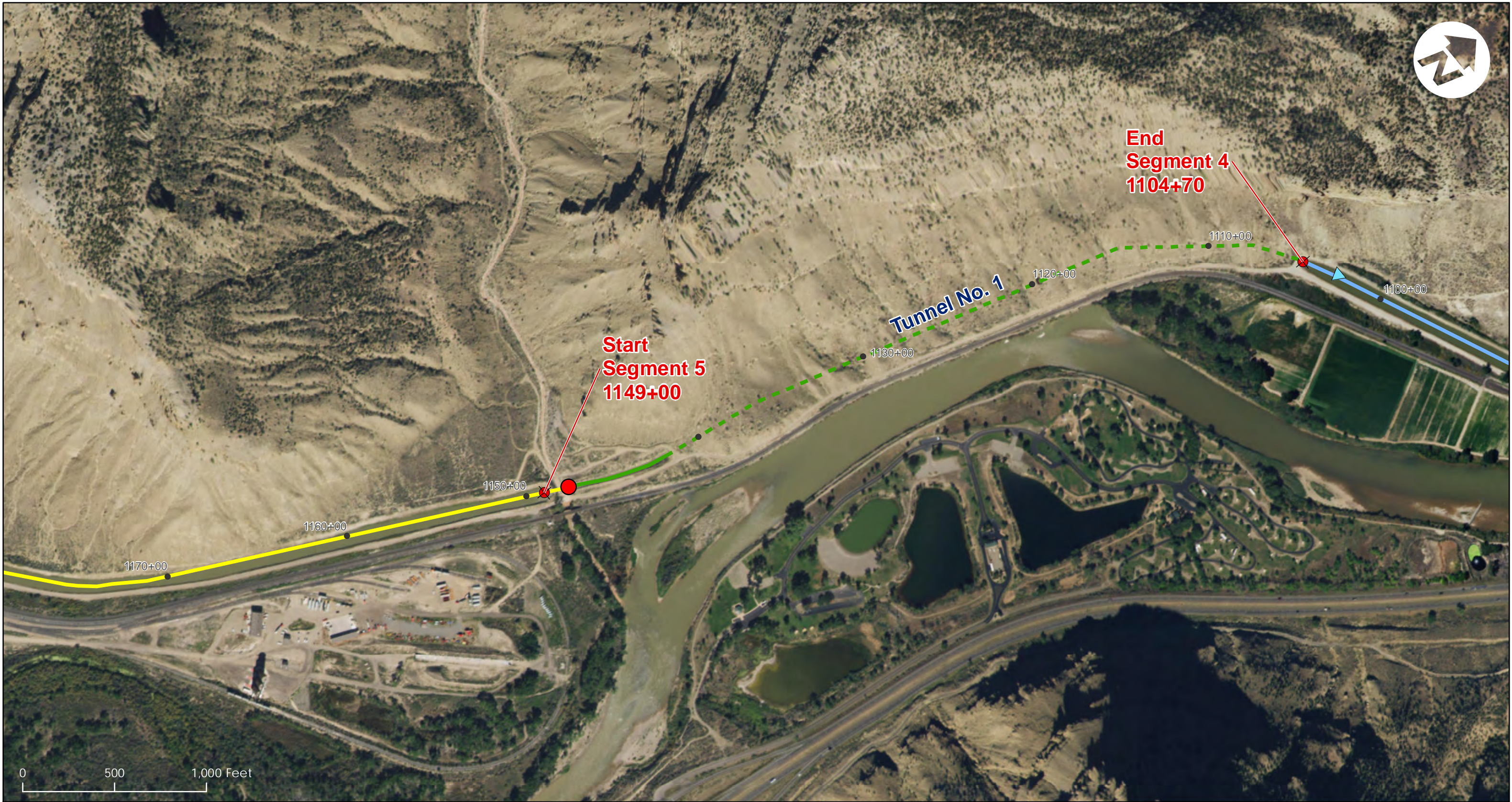


	Drain		Head Gate		Check		Start/End Liner Segment		Highest Safety Concern (Unlined)
	Flume		Air Valve		Spill		Start/End Geophysical Investigation Site		High Safety Concern
	Natural Wash		Meter Pit		Siphon		Lateral (Open)		Medium Safety Concern
	Wash		Call Box		Grate		Lateral (Piped)		Seepage but not a safety issue
			Bridges						Previously Lined

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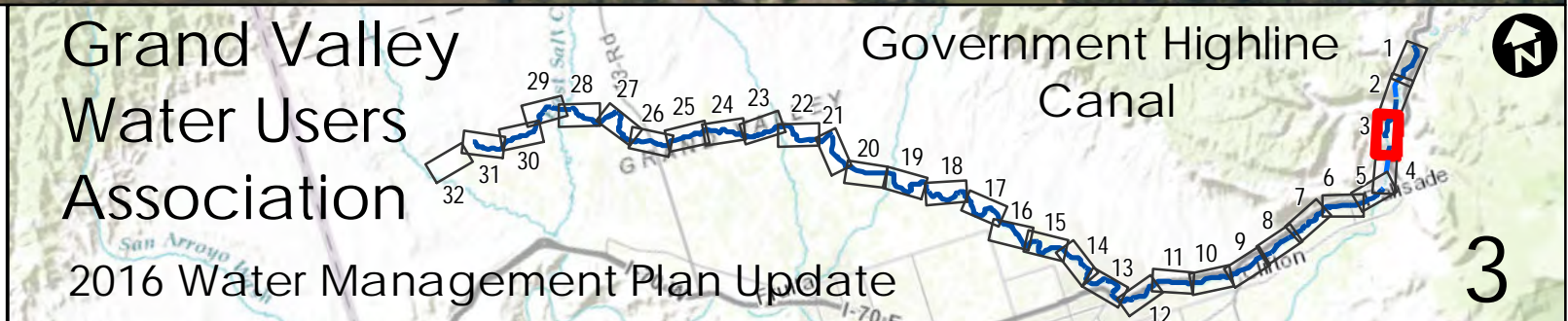
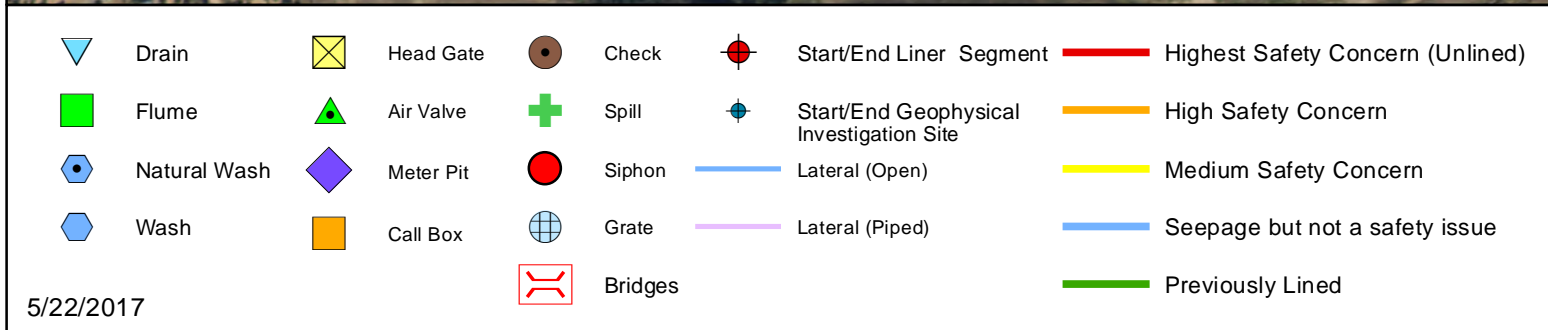
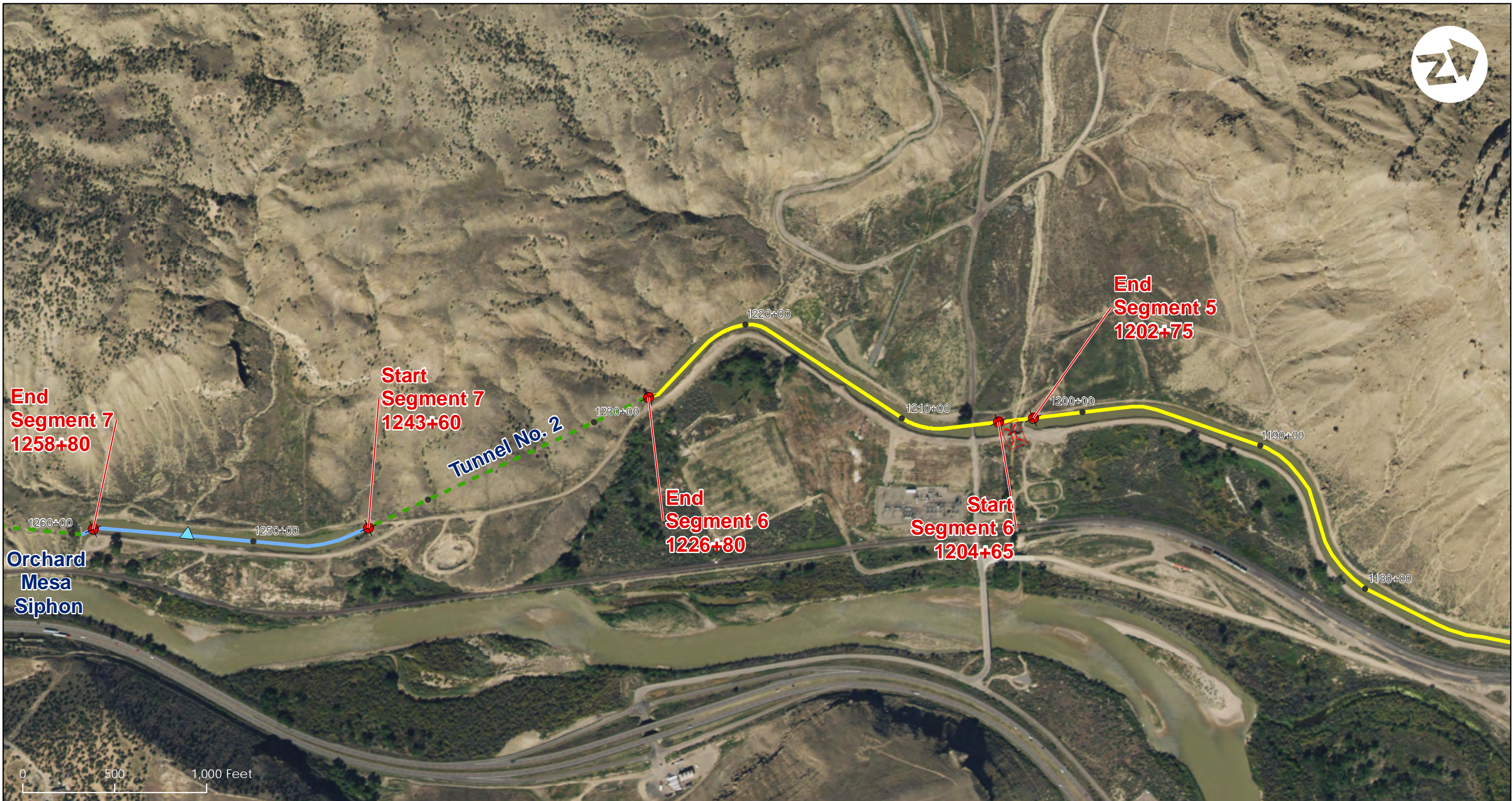




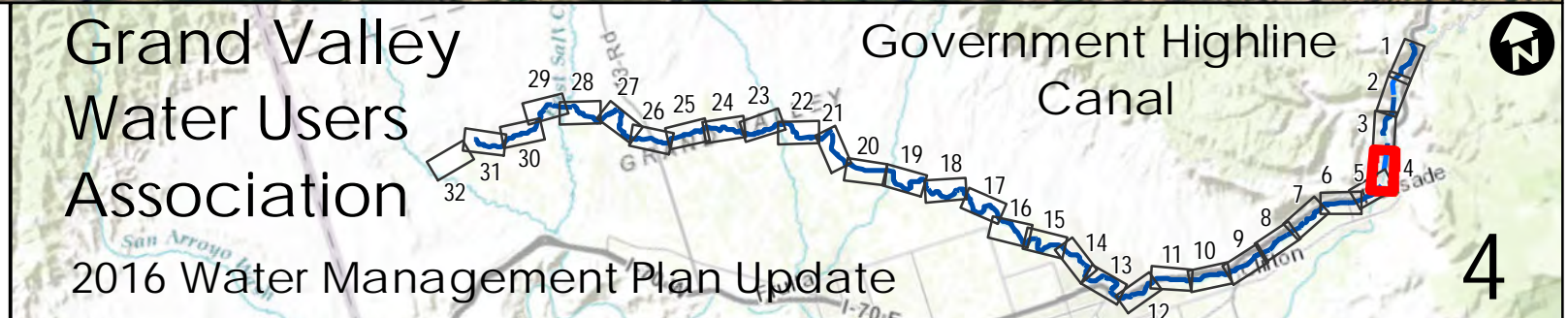
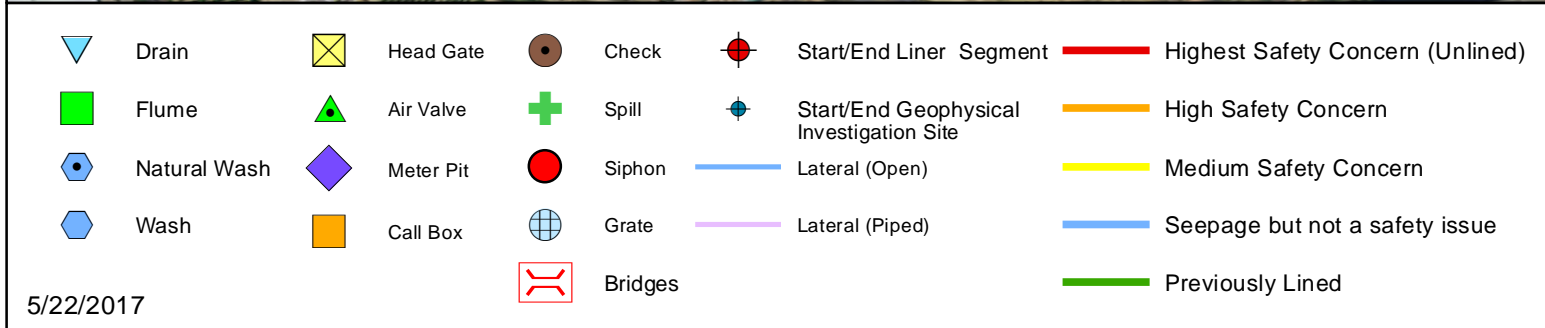
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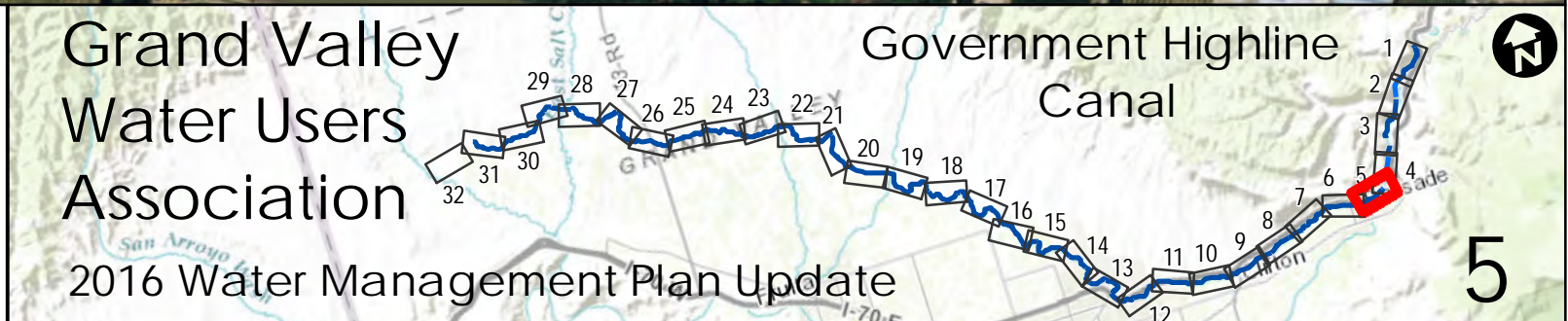
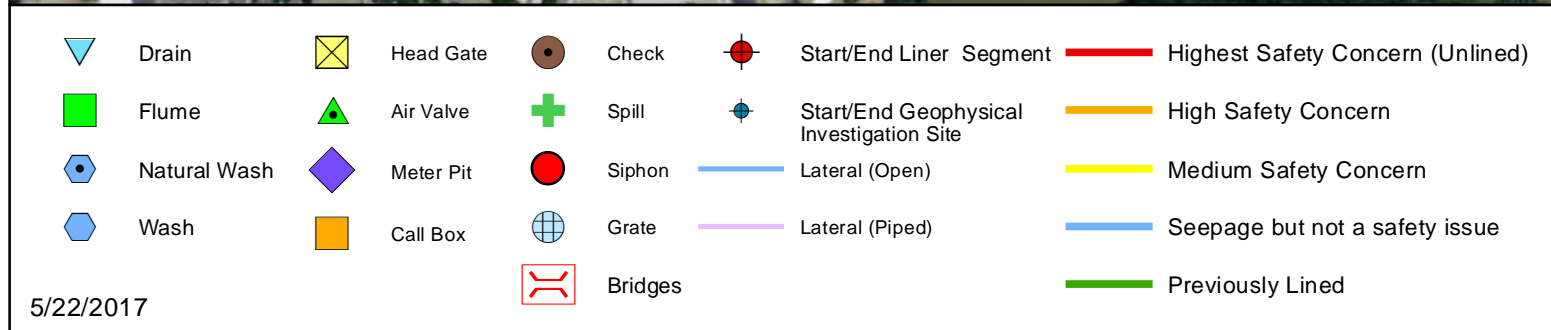
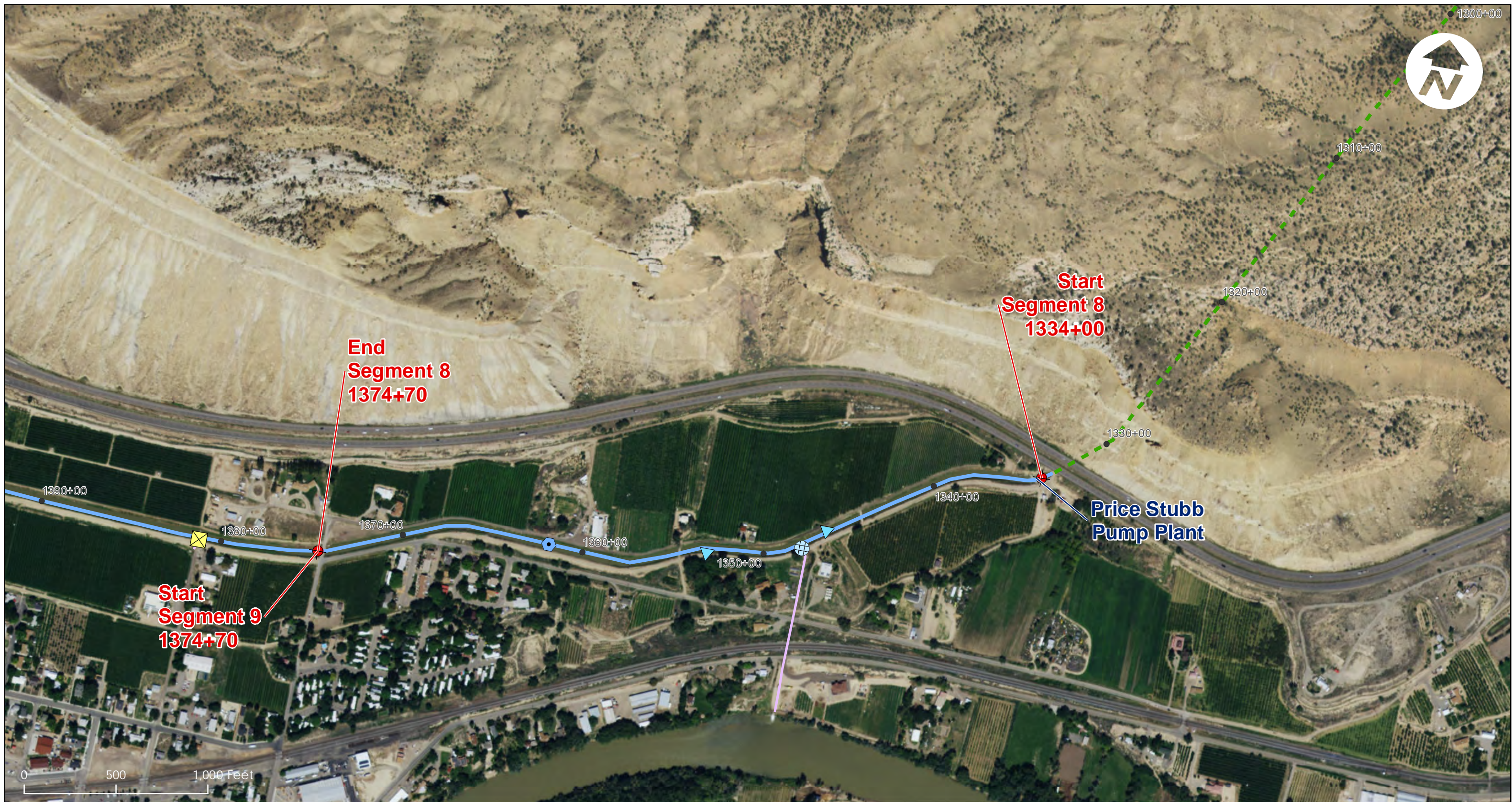




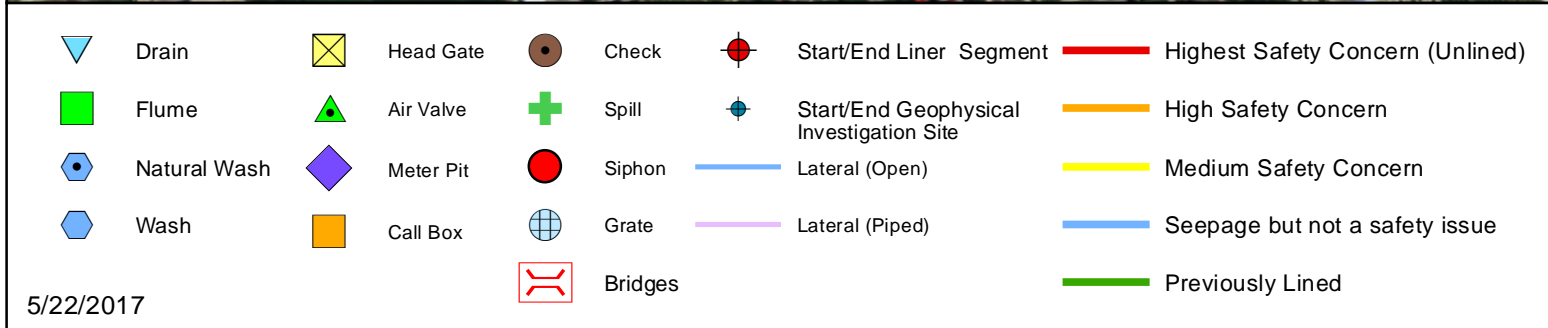




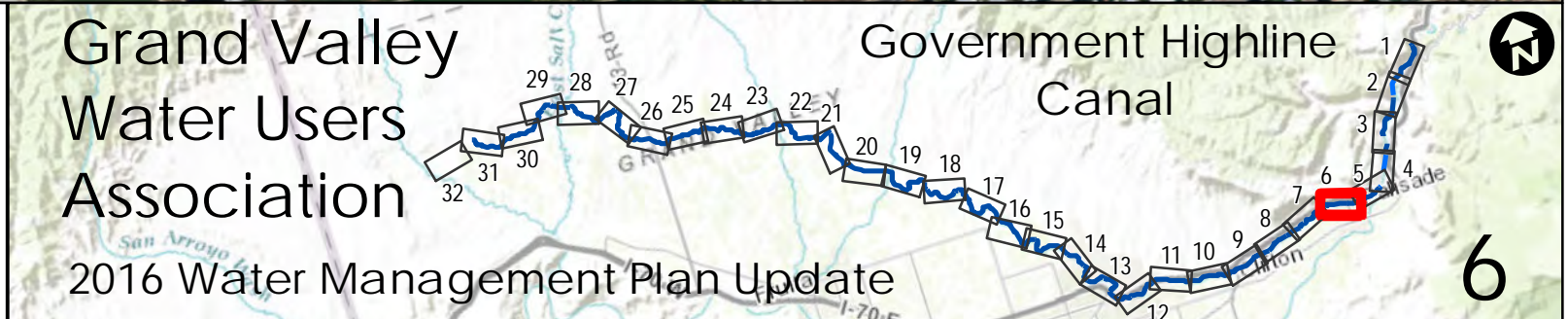




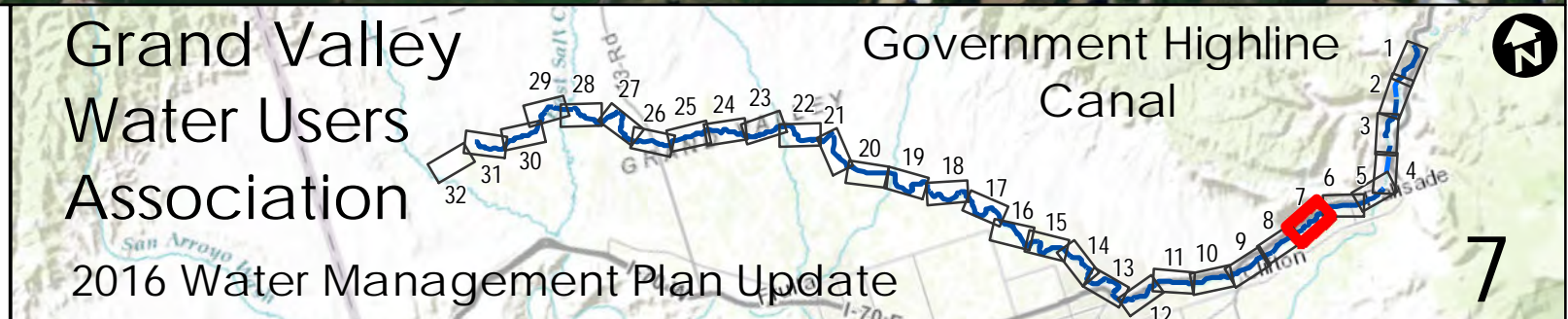
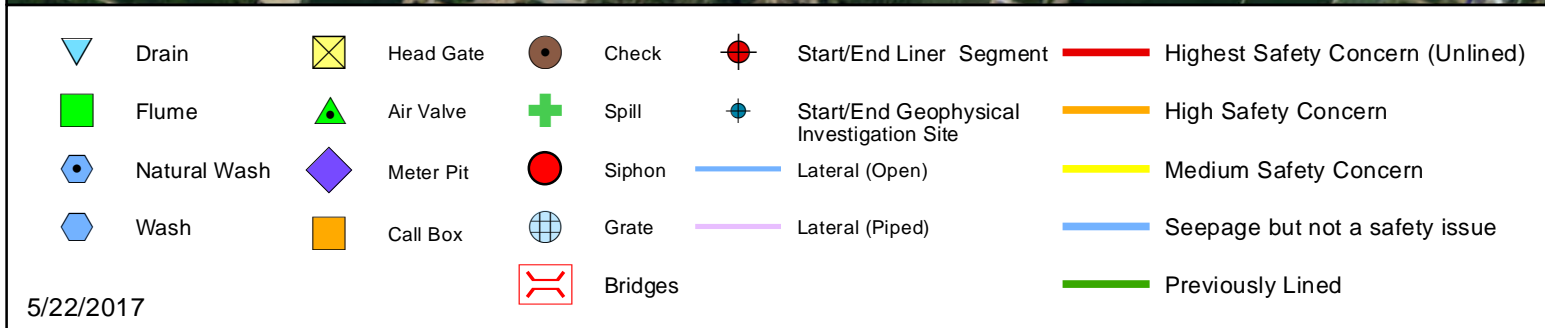




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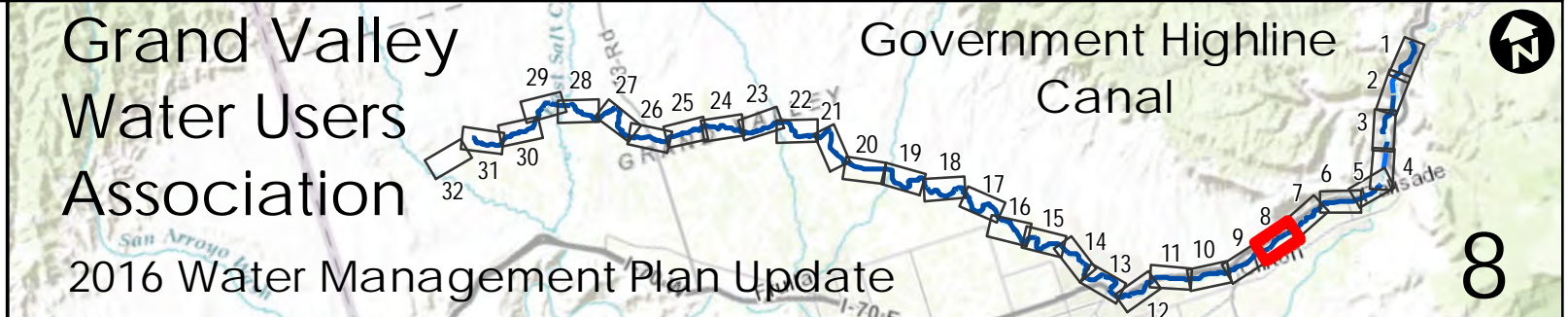




0 500 1,000 Feet

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	Flume		Air Valve		Spill		Start/End Geophysical Investigation Site		High Safety Concern
	Natural Wash		Meter Pit		Siphon		Lateral (Open)		Medium Safety Concern
	Wash		Call Box		Grate		Lateral (Piped)		Seepage but not a safety issue
			Bridges				Previously Lined		

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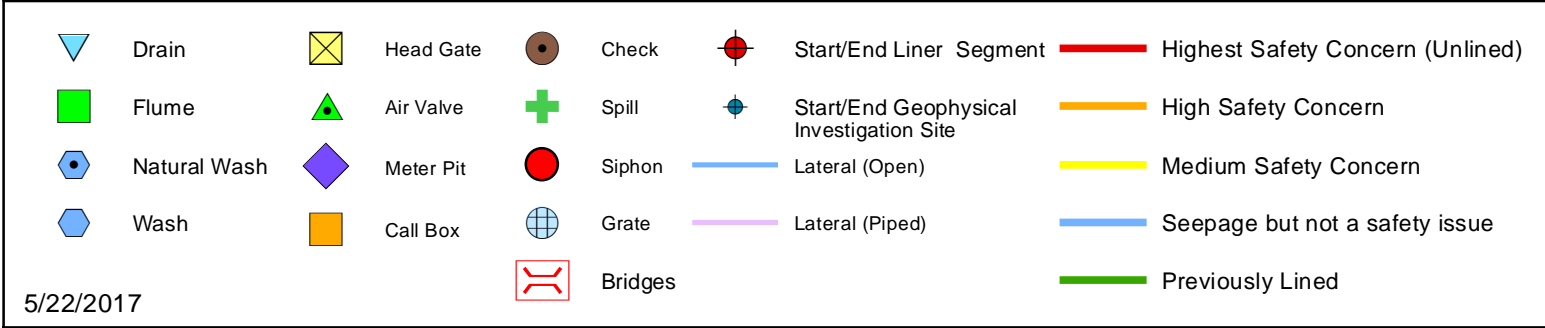


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	Natural Wash		Meter Pit		Siphon		Lateral (Open)		Medium Safety Concern
	Wash		Call Box		Grate		Lateral (Piped)		Seepage but not a safety issue
			Bridges						Previously Lined

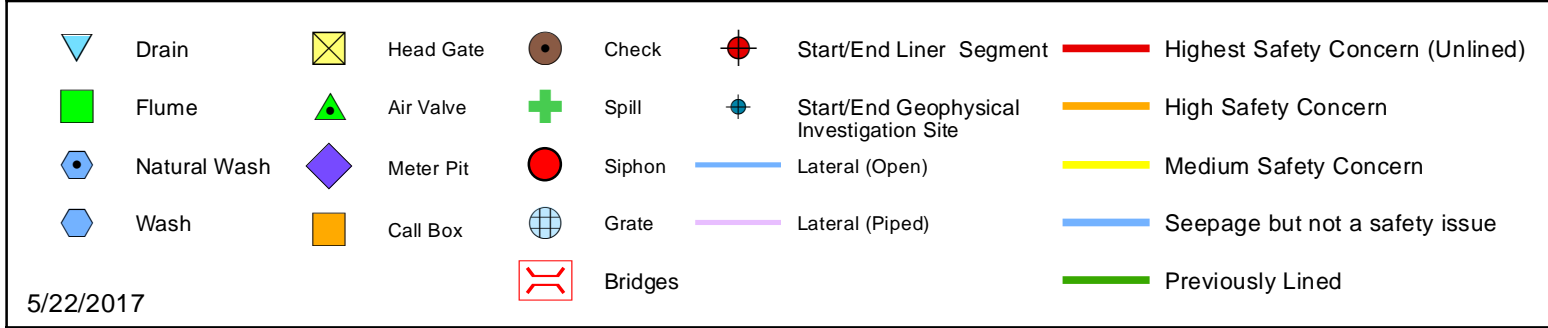
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	Flume		Air Valve		Spill		Start/End Geophysical Investigation Site		High Safety Concern
	Natural Wash		Meter Pit		Siphon		Lateral (Open)		Medium Safety Concern
	Wash		Call Box		Grate		Lateral (Piped)		Seepage but not a safety issue
					Bridges				Previously Lined

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Grand Valley  
Water Users  
Association

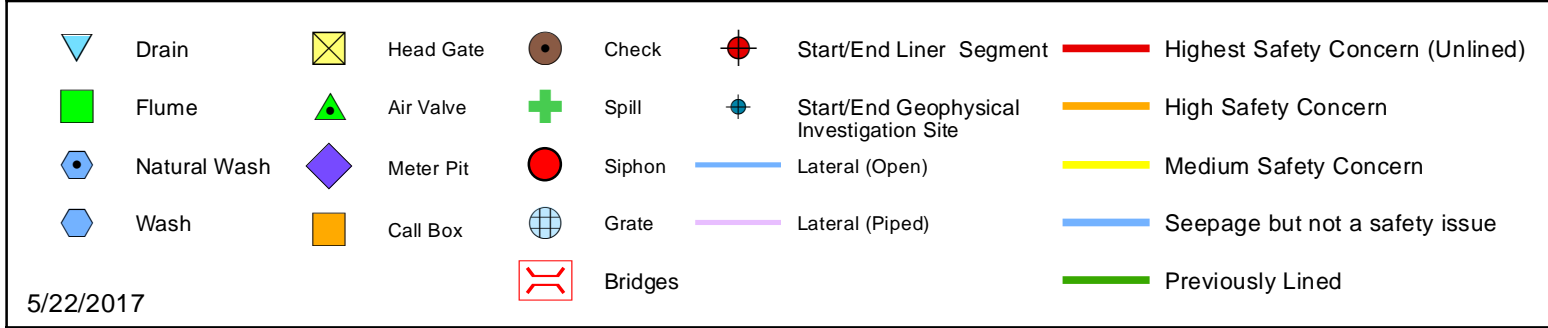
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Canal



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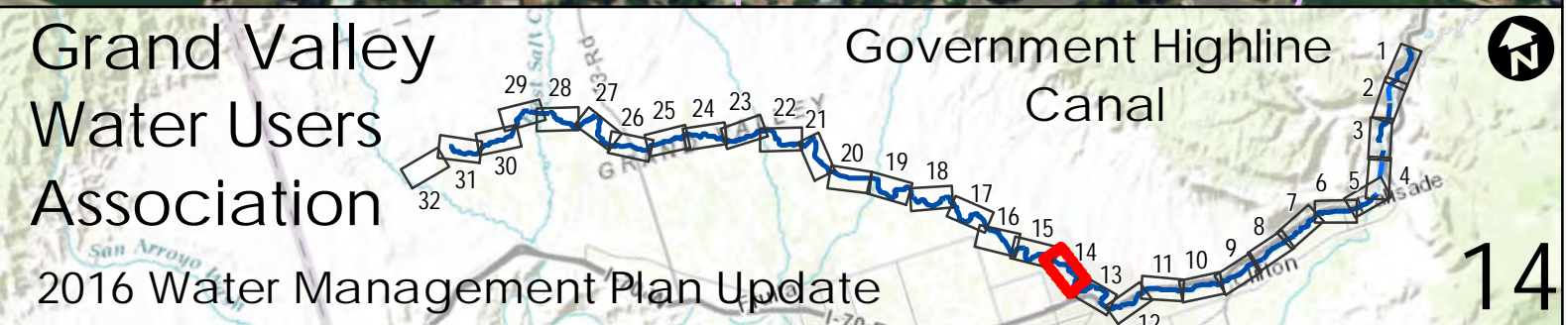




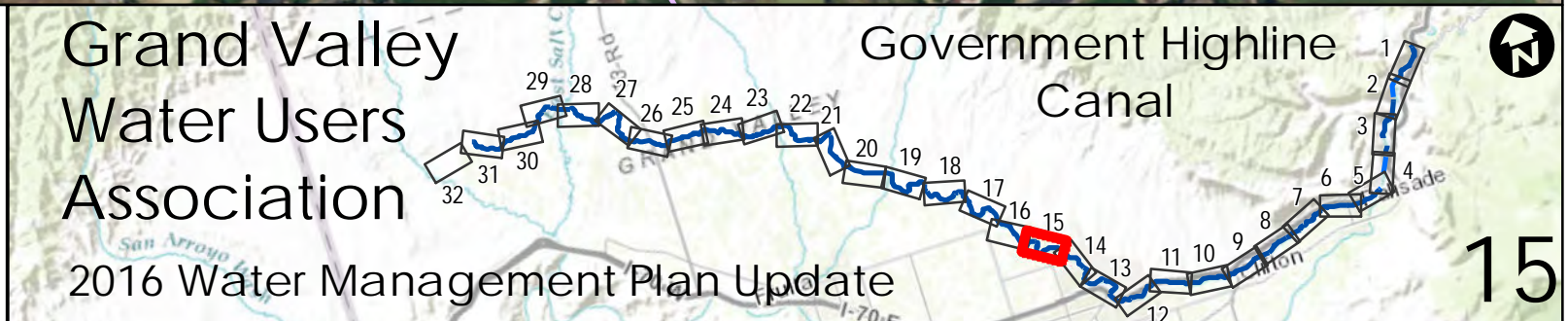
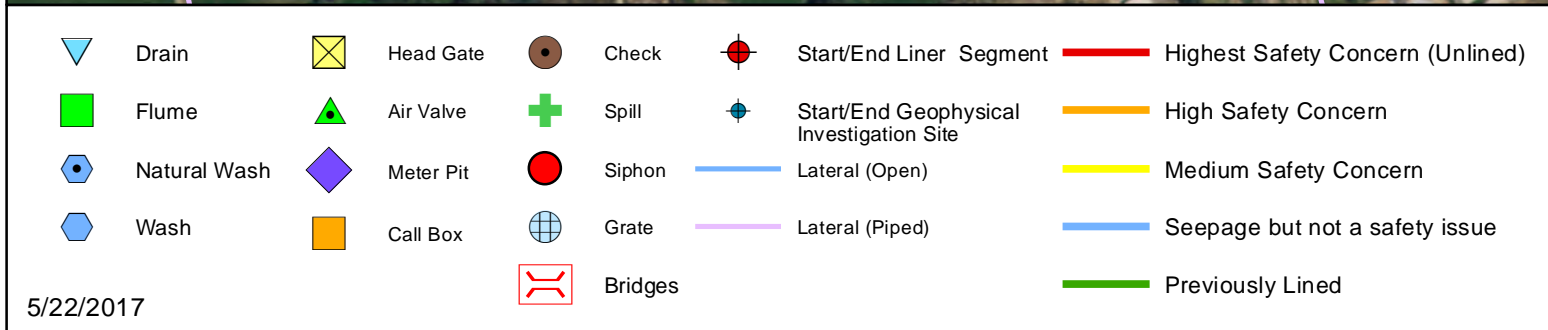
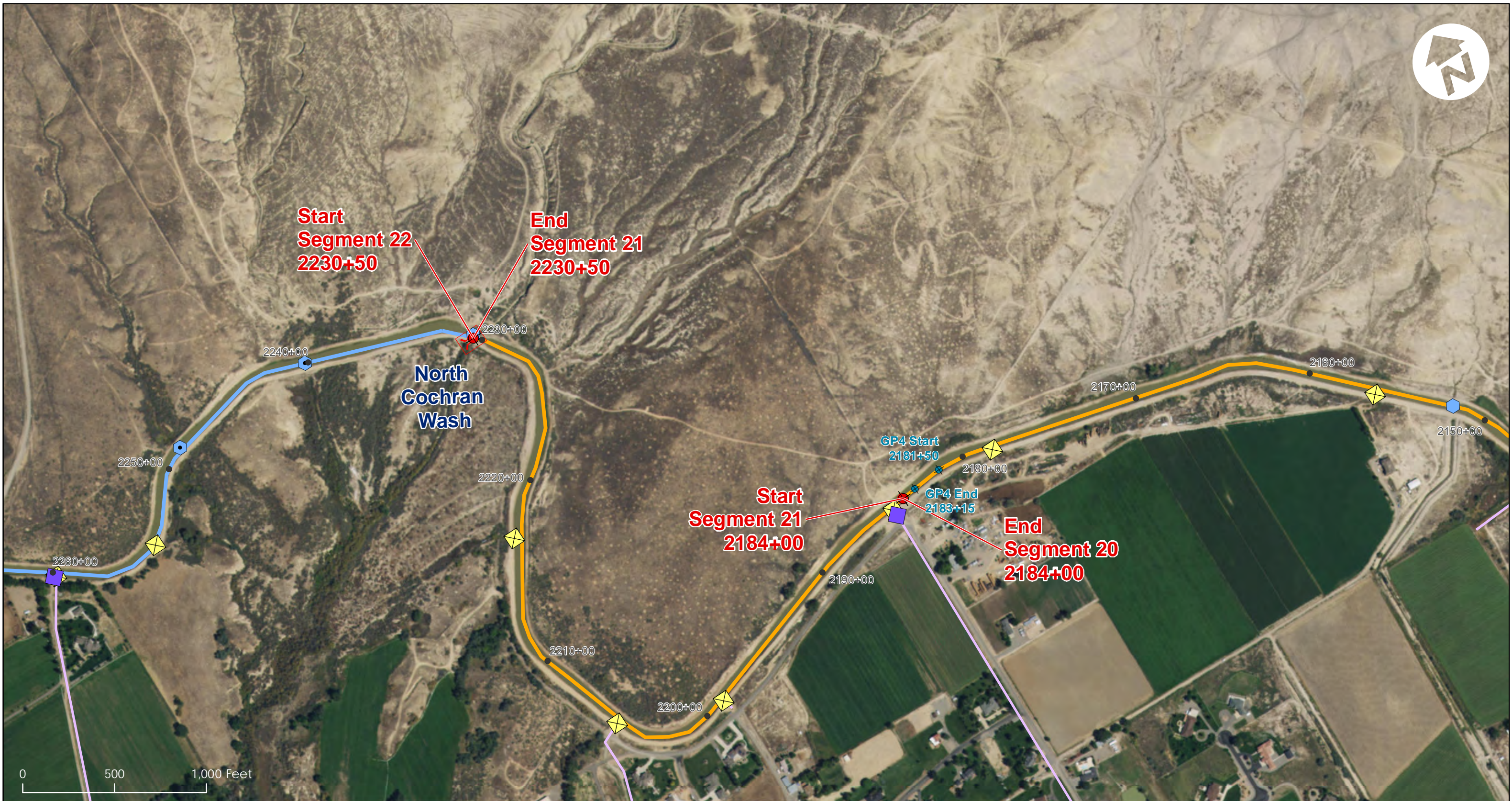
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	Natural Wash		Meter Pit		Siphon		Lateral (Open)		Medium Safety Concern
	Wash		Call Box		Grate		Lateral (Piped)		Seepage but not a safety issue
			Bridges				Previously Lined		

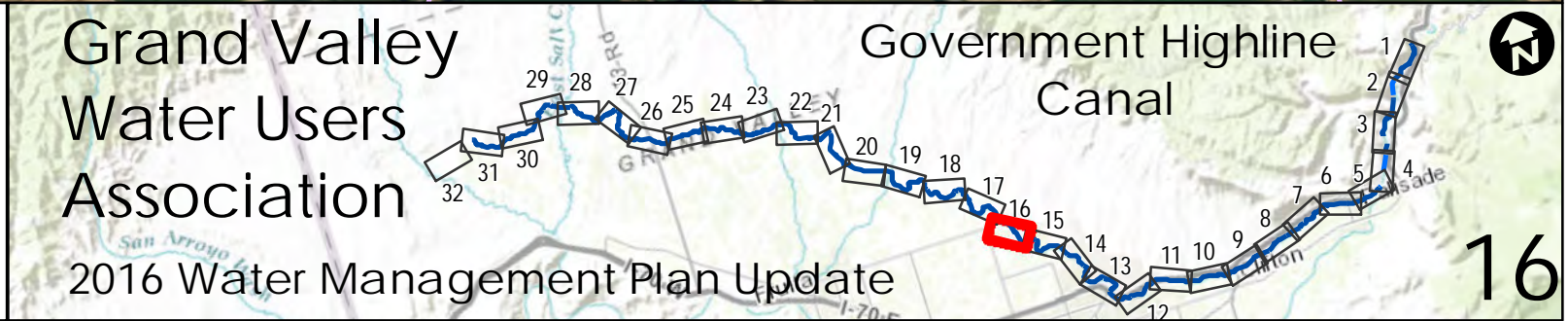
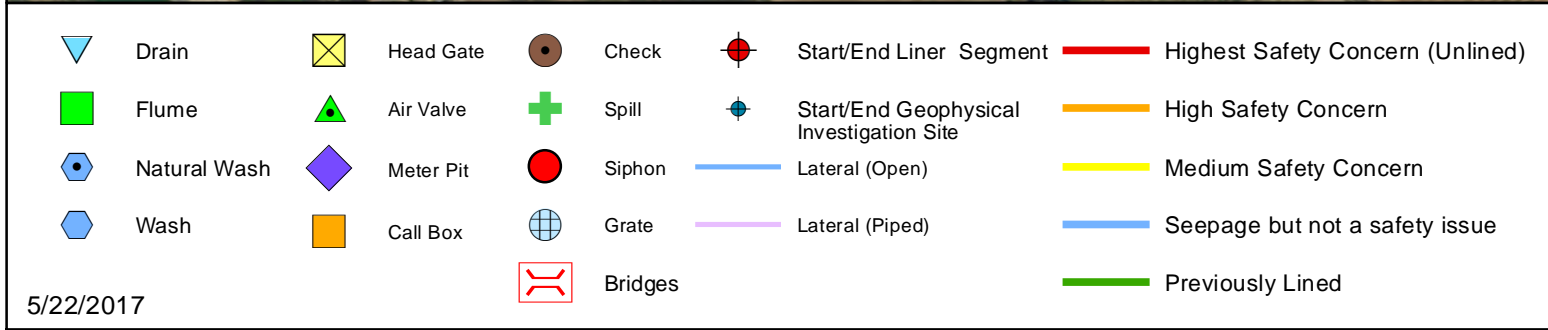
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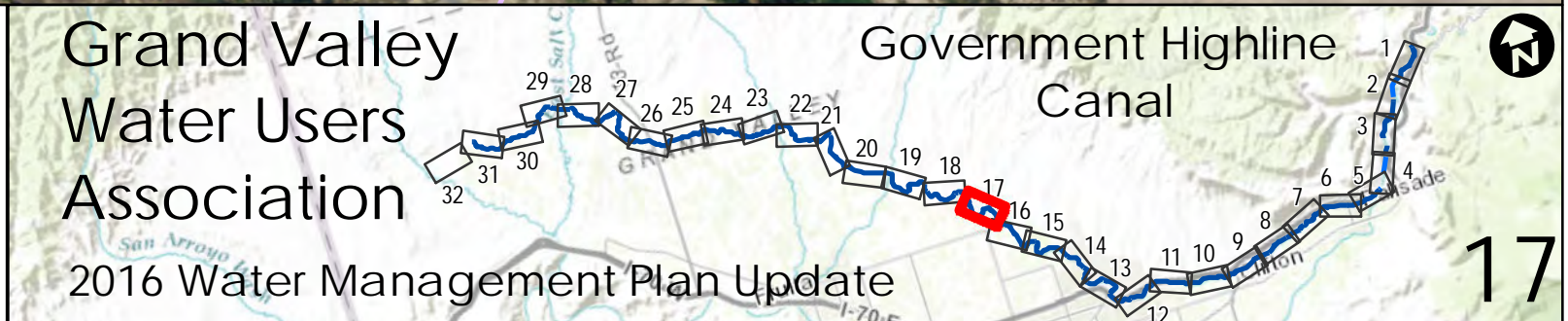
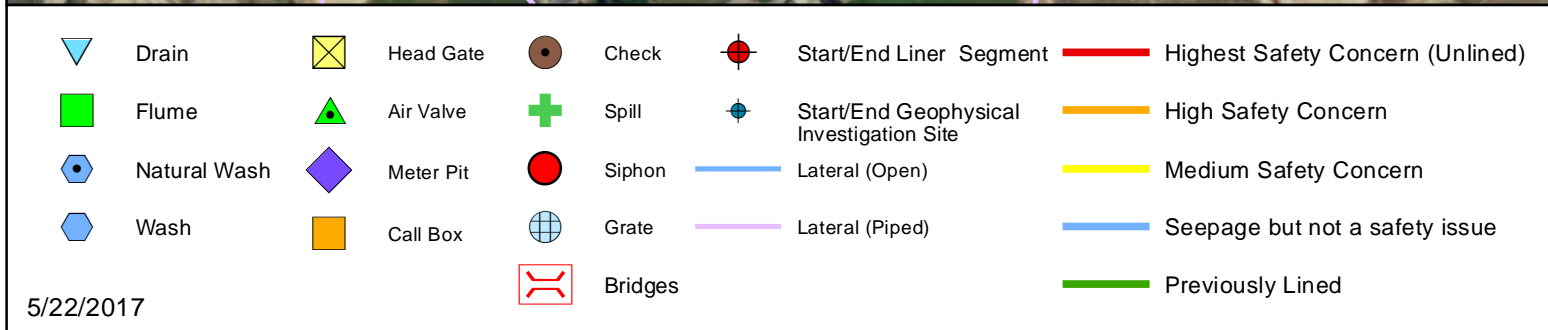




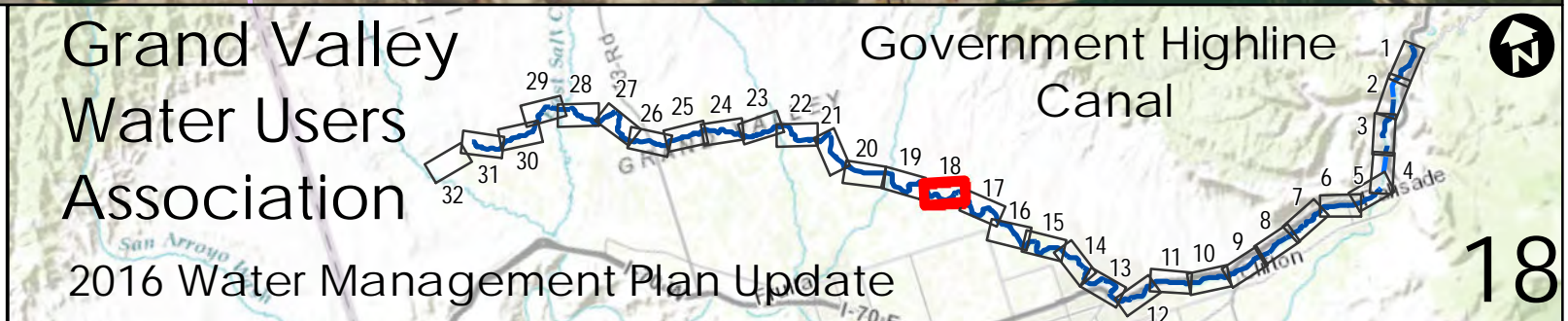
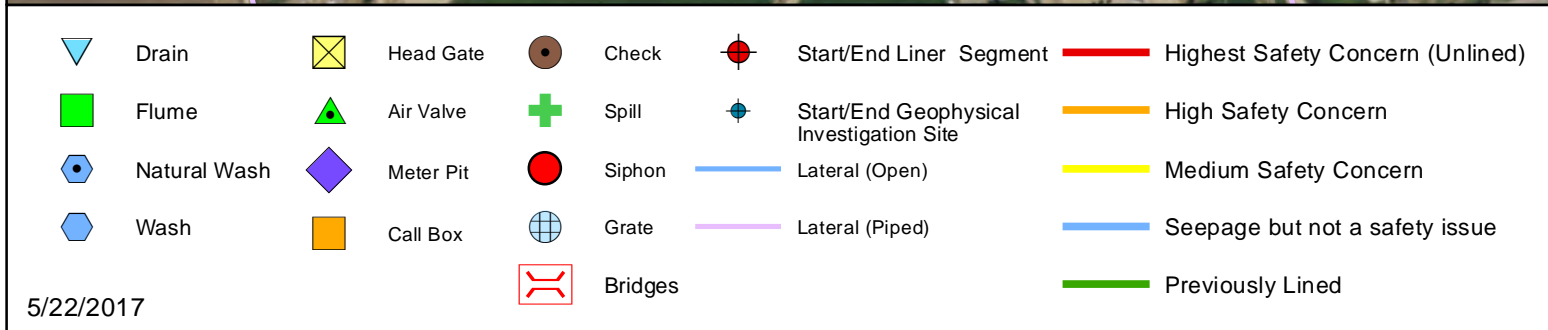




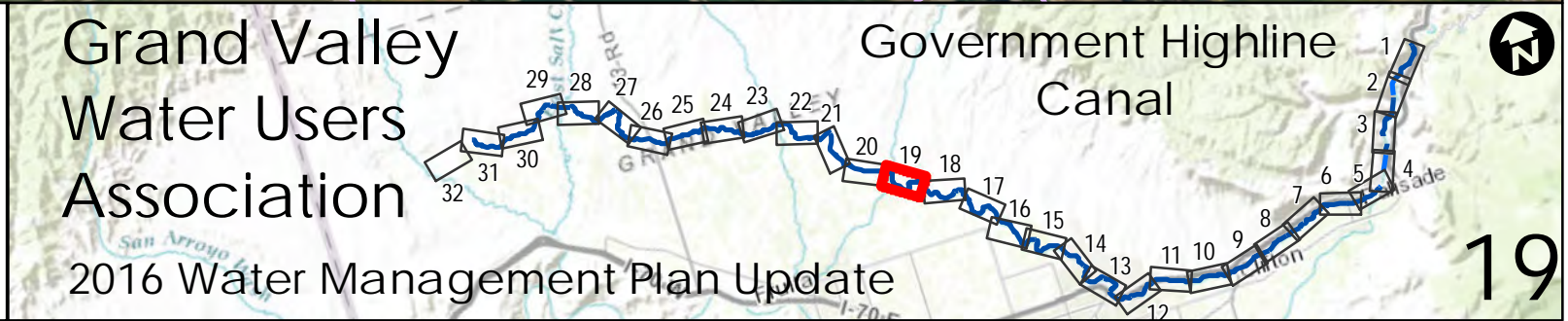
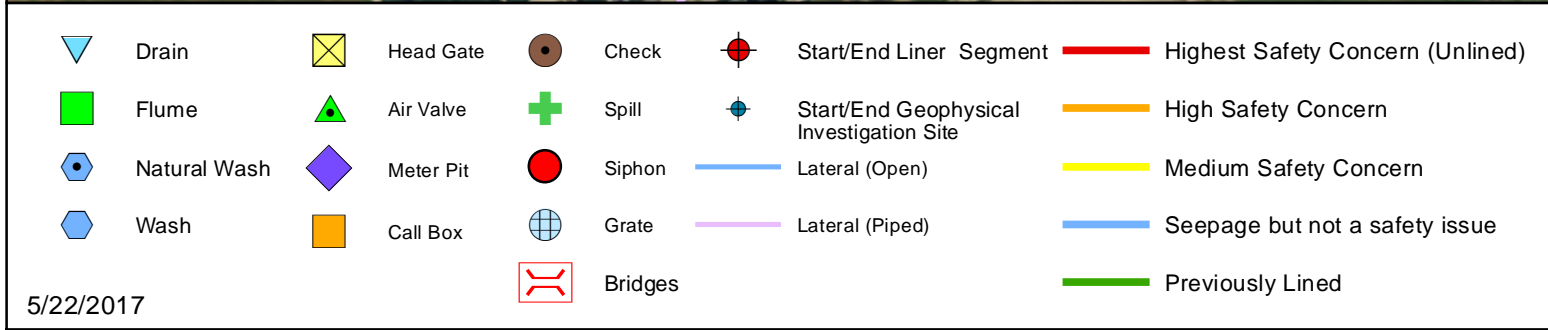




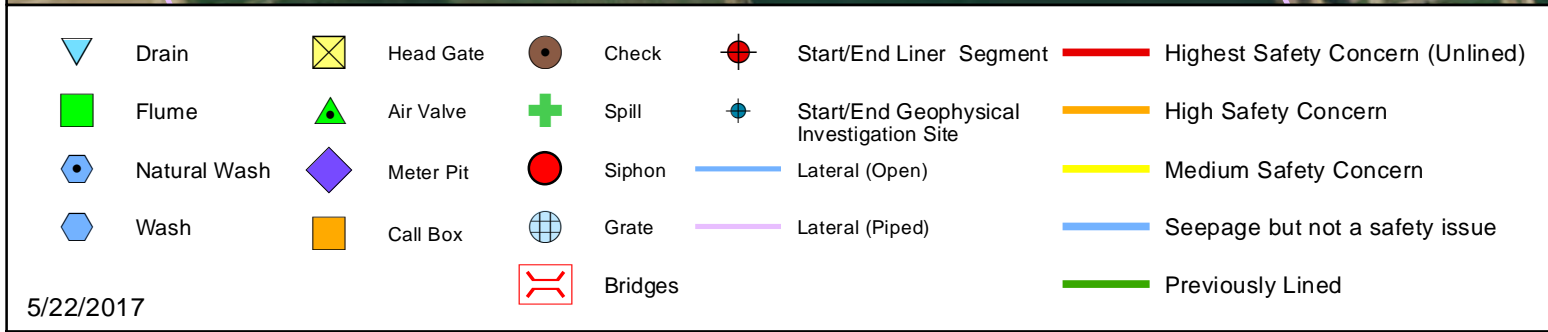
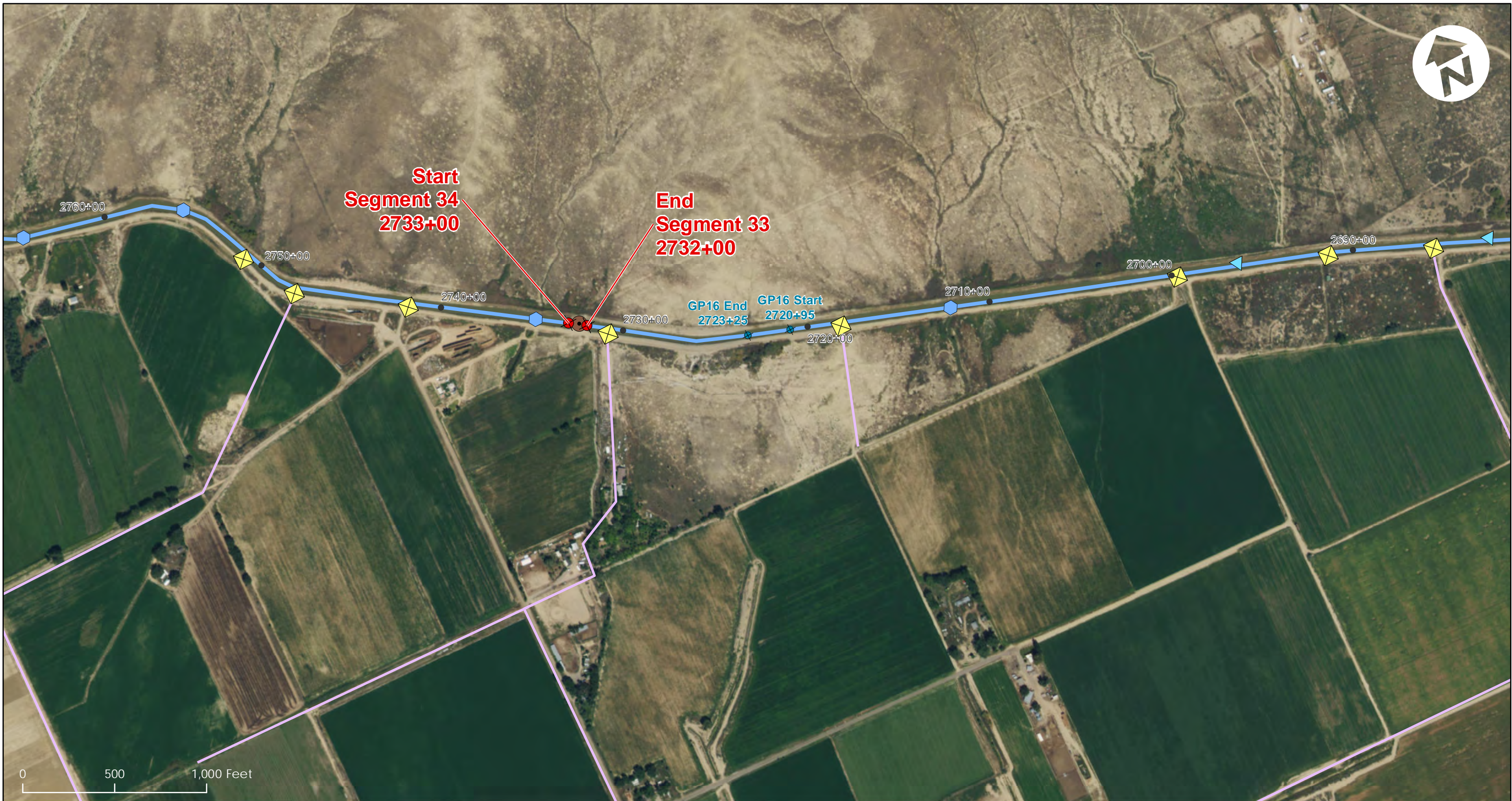




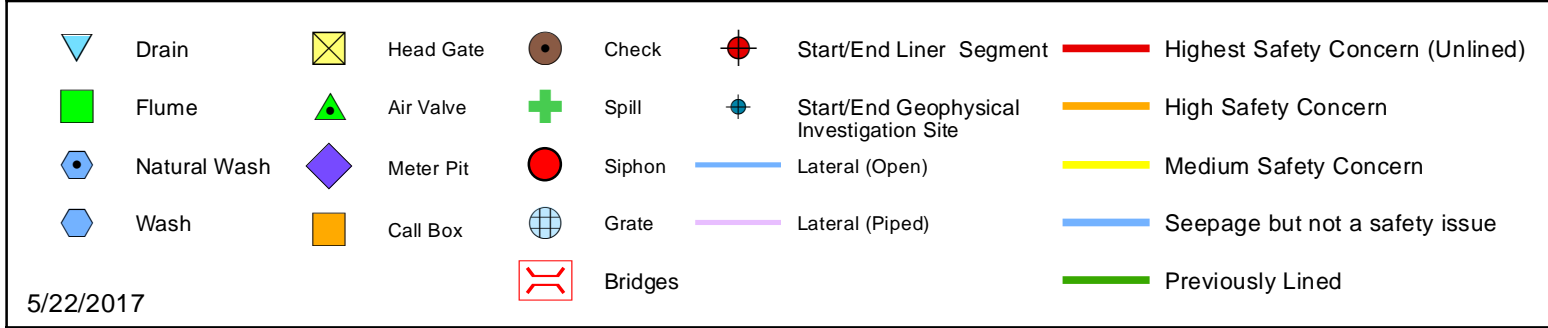




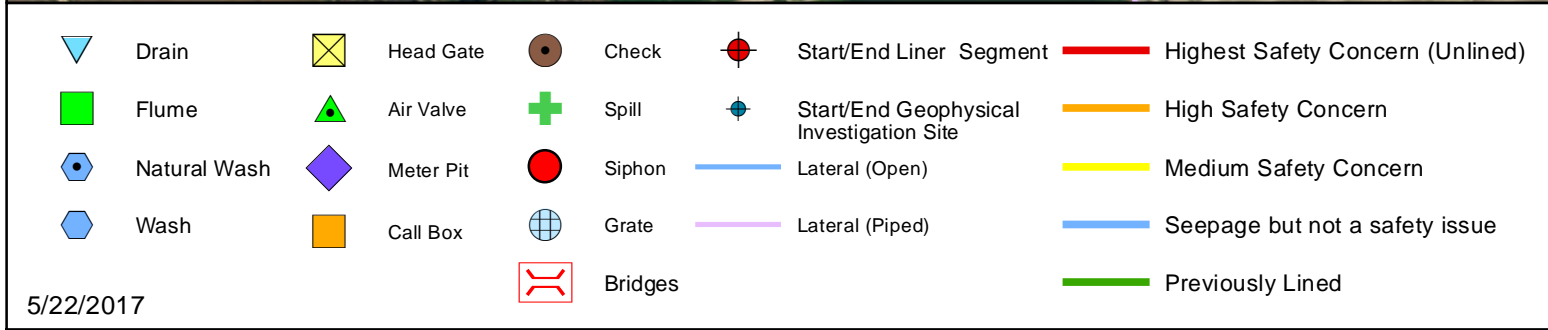










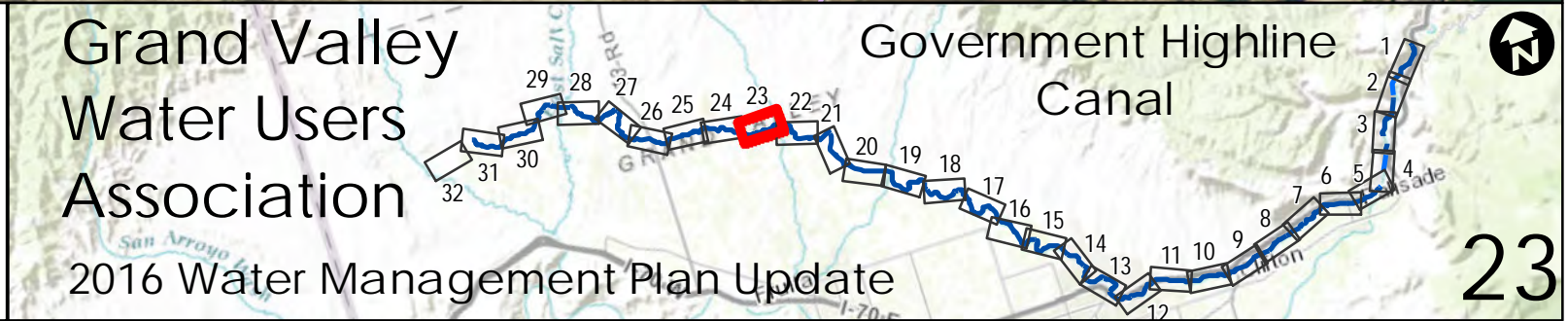




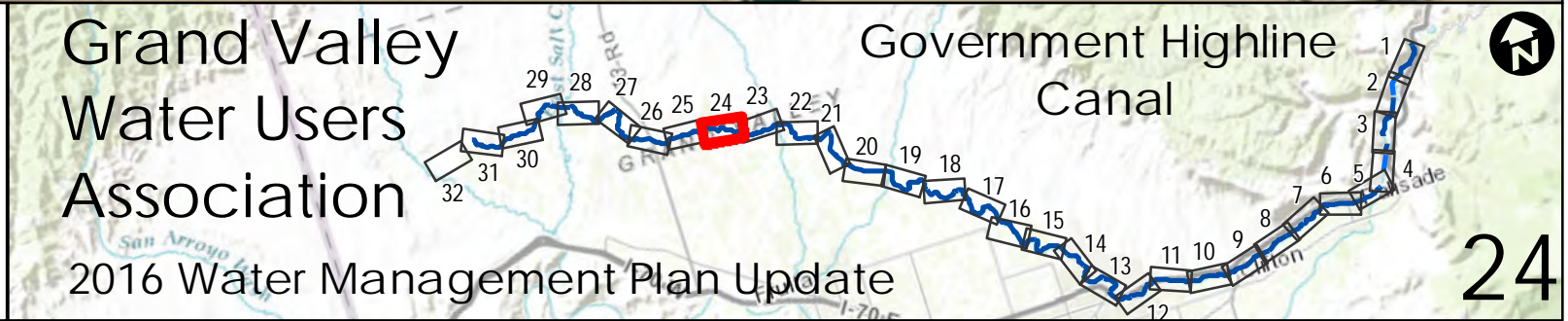
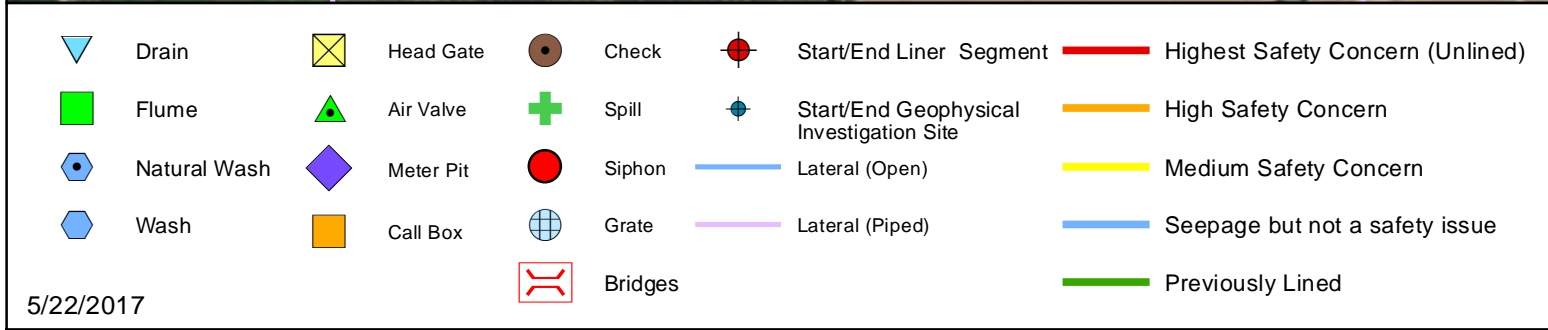
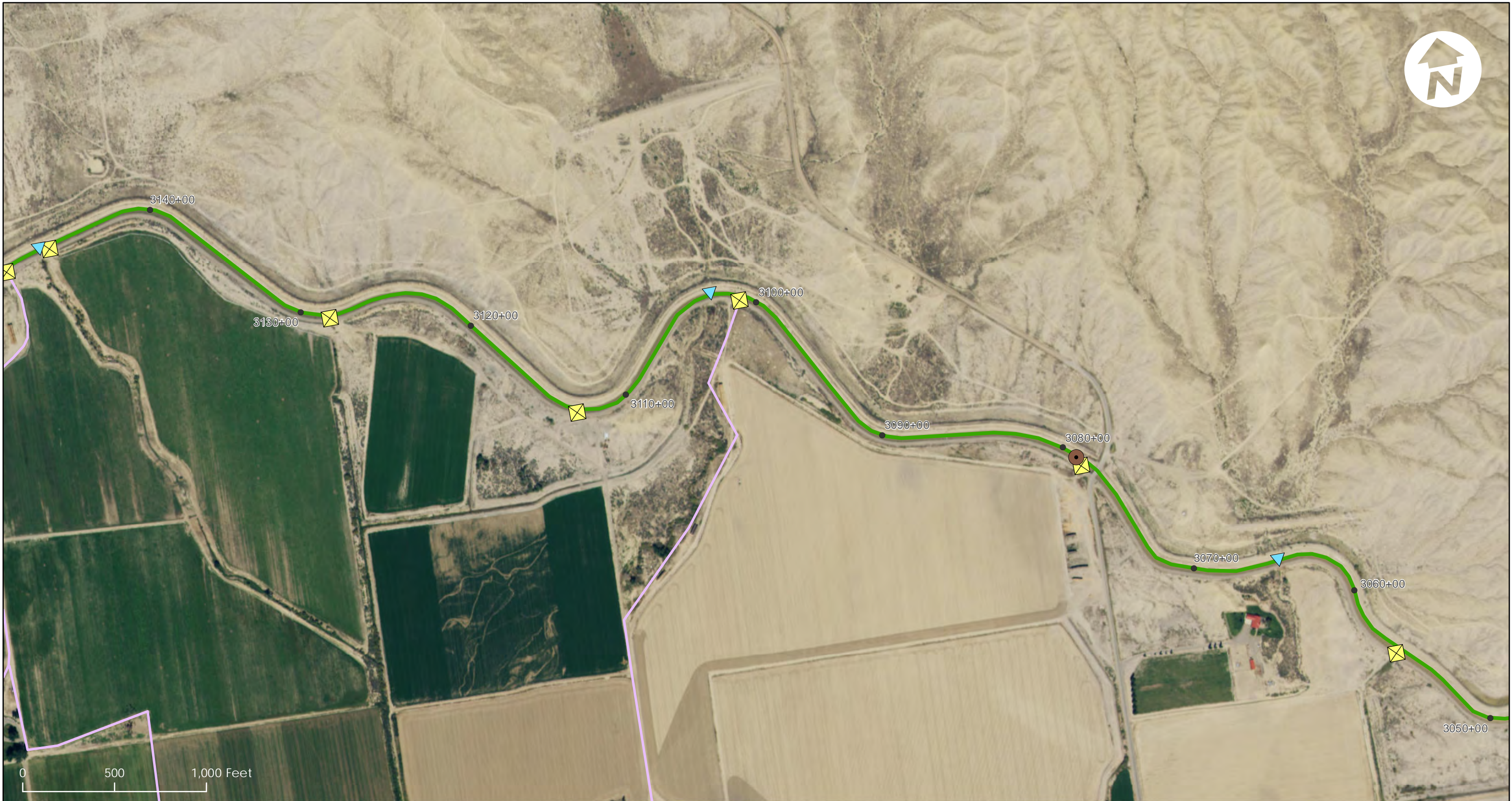


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	Flume		Air Valve		Spill		Start/End Geophysical Investigation Site		High Safety Concern
	Natural Wash		Meter Pit		Siphon		Lateral (Open)		Medium Safety Concern
	Wash		Call Box		Grate		Lateral (Piped)		Seepage but not a safety issue
			Bridges				Previously Lined		

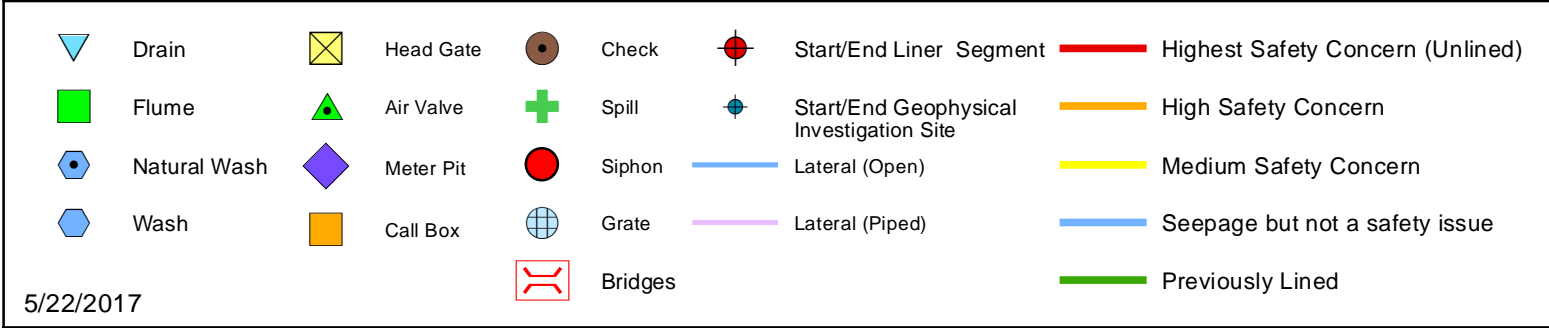
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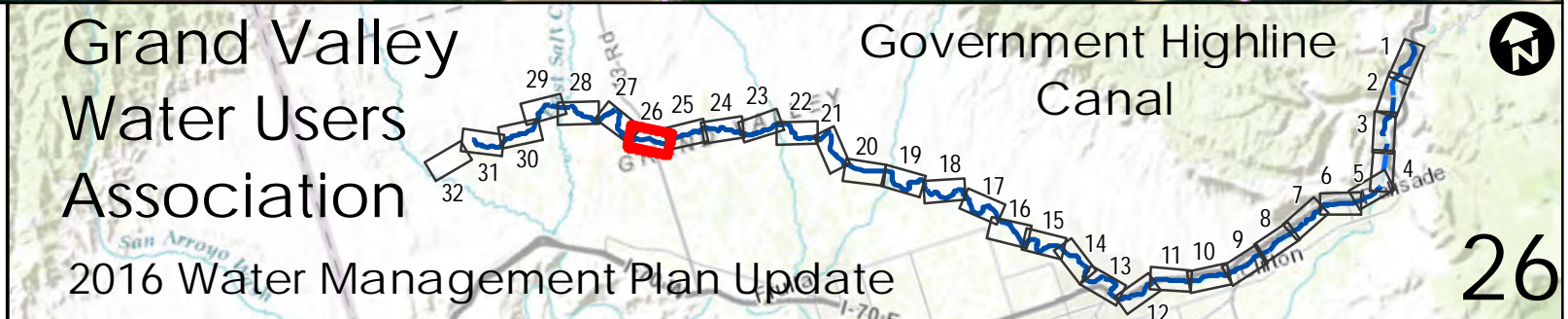
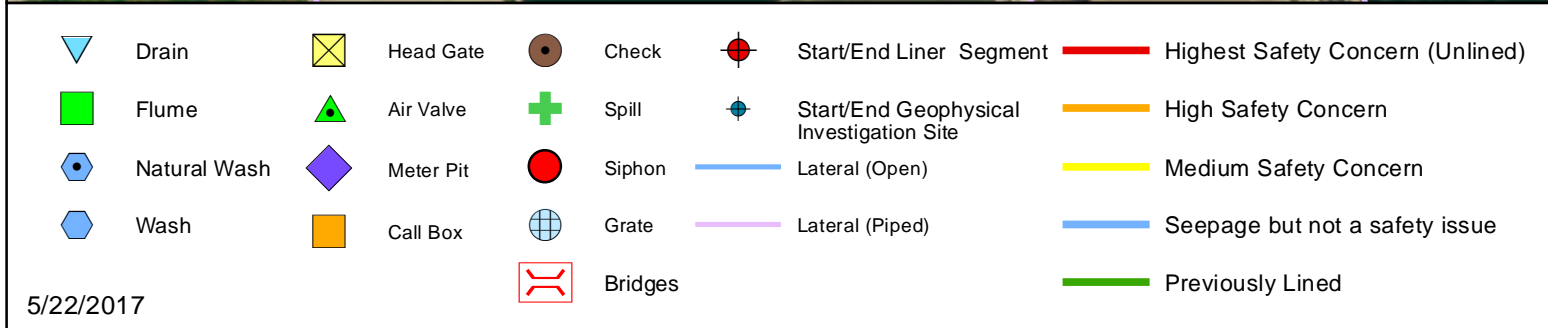




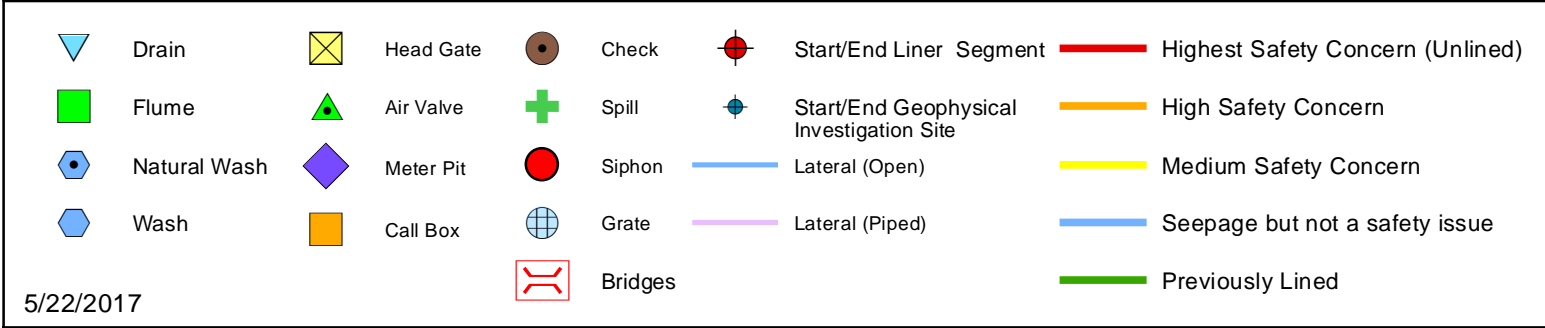




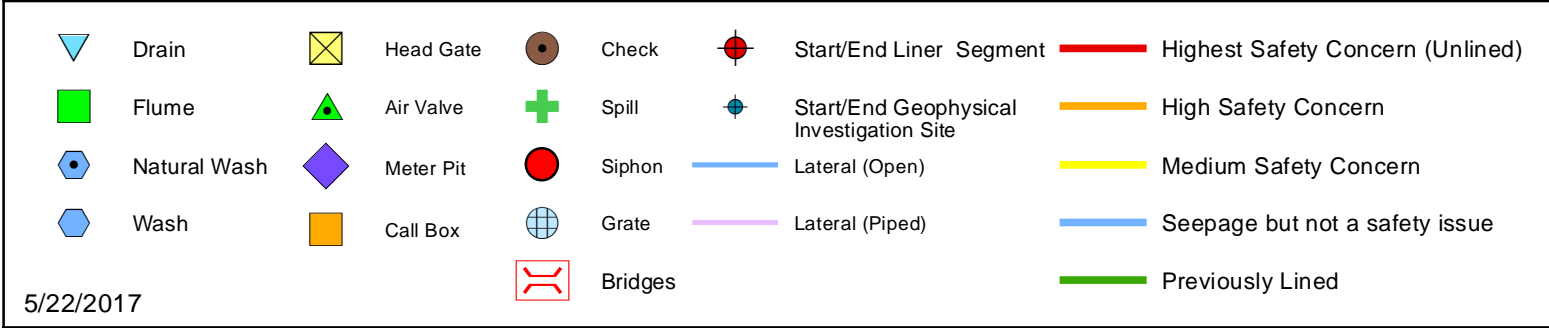




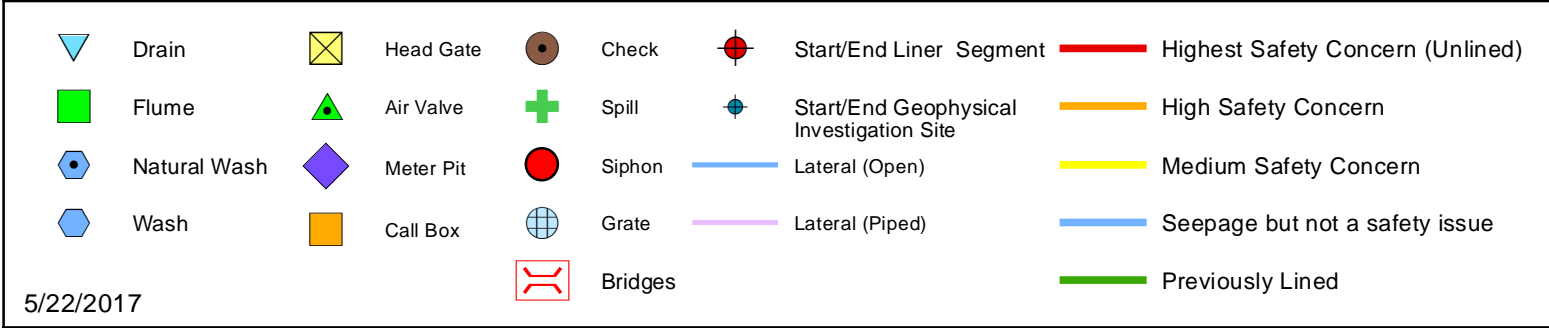










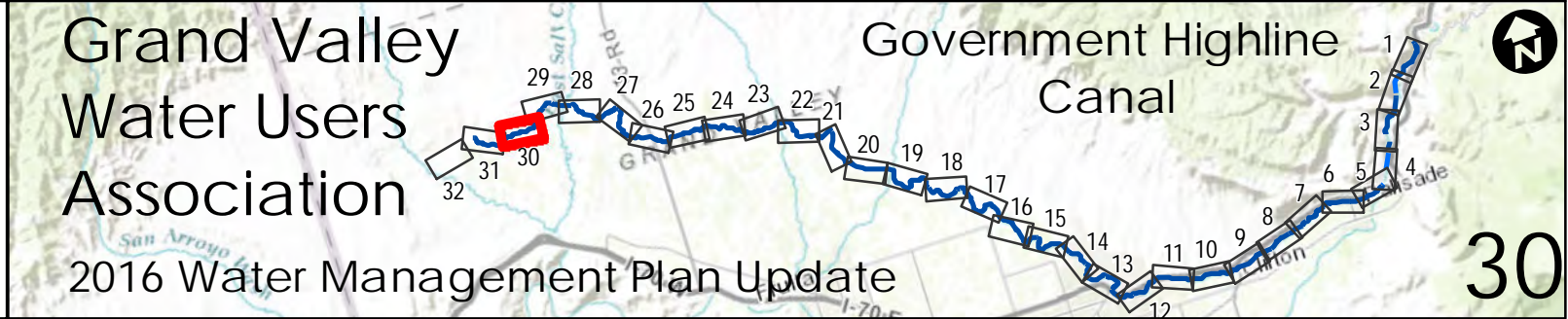






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	Wash		Call Box		Grate		Lateral (Piped)		Seepage but not a safety issue
			Bridges						Previously Lined

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Badger  
Wash  
Spill

3750+00

3740+00

3730+00

3720+00

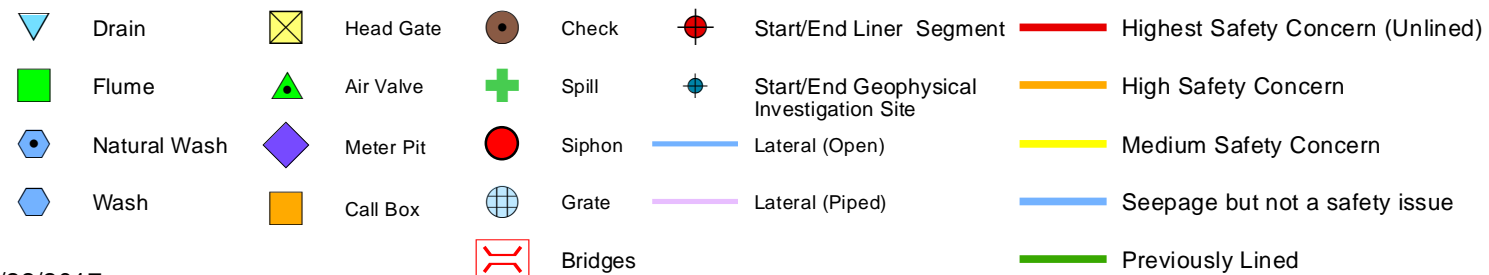
3710+00

3700+00

3690+00

3680+00

0 500 1,000 Feet



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Association

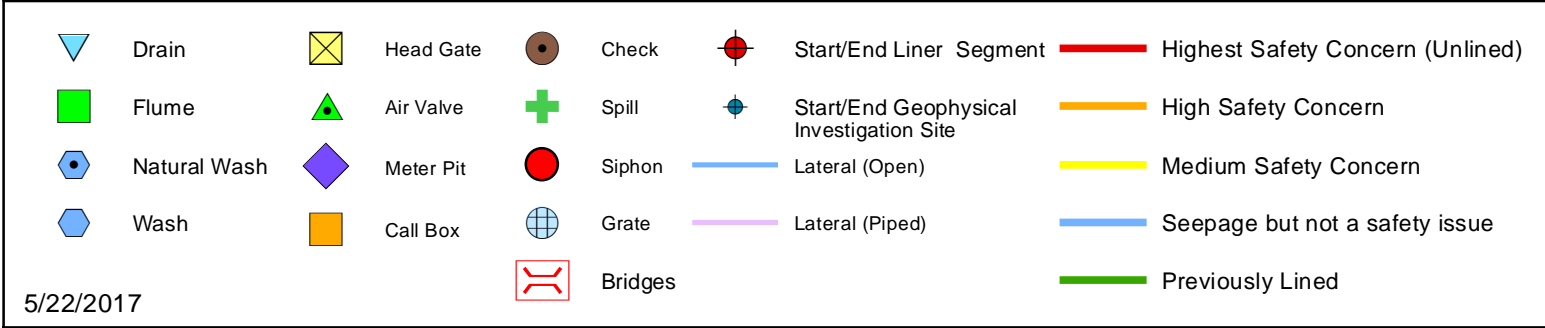
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Canal



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## Appendix C // Canal Project Inventory Table

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Priority Category	Canal Element	Brief Section Description	Potential Project Description	Potential Beneficiaries	External Funding Opportunities	Notes
C	System Wide	Common Elements in Entire Canal	Address O&M Recommendation 2008-3-I	NGOs interested in improved efficiency	NGO Funding Assistance	Category 3 Recommendation
C	UL-1	Below "First 500" High Priority Segment to Railroad Bridge Crossing	Canal Lining	GVWUA, OMID, PID, MCID		No Salt Loading
A			Repair and Replace "Station 22" Spill Gate			
C			Address O&M Recommendation 1996-3-A	GVWUA, OMID, PID, MCID		Category 3 Recommendation
C			Address O&M Recommendation 1996-3-B	GVWUA, OMID, PID, MCID		Category 3 Recommendation
C			Address O&M Recommendation 1996-3-C	GVWUA, OMID, PID, MCID		Category 3 Recommendation
C	UL-2	Below Railroad Bridge Crossing to Fish Screen Facility	Canal Lining	GVWUA, OMID, PID, MCID		No Salt Loading
C	UL-3	Fish Screen Facility to Above Asbury Creek Bridge	Canal Lining	GVWUA, OMID, PID, MCID		No Salt Loading
C	UL-4	Below Asbury Creek Bridge to Start of Tunnel No. 1	Canal Lining	GVWUA, OMID, PID, MCID		No Salt Loading
A			Sleeve or Line Undershot US-1	GVWUA, OMID, PID, MCID		High Priority Undershot Repair
C			Address O&M Recommendation 2007-3-D	GVWUA, OMID, PID, MCID		Category 3 Recommendation
B			Address O&M Recommendation 2014-2-B	GVWUA, OMID, PID, MCID		Category 2 Recommendation
	TUN-1	Tunnel 1				
	LIN-1	Previously Lined Canal				
B	UL-5	End of Tunnel No. 1 to Above Coal Creek Bridge	Canal Lining	GVWUA, OMID, PID, MCID		No Salt Loading
C			Address O&M Recommendation 2014-3-B	NGOs interested in improved efficiency	NGO Funding Assistance	Category 3 Recommendation
B	UL-6	Below Coal Creek Bridge to Start of Tunnel No. 2	Canal Lining	GVWUA, OMID, PID, MCID		No Salt Loading
B			Address O&M Recommendation 2007-2-B	GVWUA, OMID, PID, MCID		Category 2 Recommendation
C			Address O&M Recommendation 2007-3-E	GVWUA, OMID, PID, MCID		Category 3 Recommendation
C	TUN-2	Tunnel 2	Address O&M Recommendation 2007-3-F	GVWUA, OMID, PID, MCID		Category 3 Recommendation
C	UL-7	End of Tunnel No. 2 to Start of Tunnel No. 3	Canal Lining	GVWUA, OMID, PID, MCID		No Salt Loading
C			Address O&M Recommendation 2007-3-G	NGOs interested in improved efficiency	NGO Funding Assistance	Category 3 Recommendation
C	TUN-3	Tunnel 3	Address O&M Recommendation 2007-3-H	GVWUA, OMID, PID, MCID		Category 3 Recommendation
A	UL-8	Price-Stubb Pump to Below Bower Ave. Bridge (East End Upper)	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Not Proposed in 2015 FOA
C			Sleeve Undershot US-3 with Plastic or Steel Casing	GVWUA		Low Priority Undershot Repair

Priority Category	Canal Element	Brief Section Description	Potential Project Description	Potential Beneficiaries	External Funding Opportunities	Notes
A	UL-9	Below Bower Ave Bridge to Beginning of 2015 FOA (East End Upper)	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Not Proposed in 2015 FOA
	UL-10	Beginning of 2015 FOA to End of 2015 FOA (East End Middle)	Canal Lining - In Progress	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Funded in 2015 FOA
			Address Concerns of USBR CRID 214 - GP1	USBR, GVWUA		
A	UL-11	Beginning of 2015 Rejected FOA to End of 2015 Rejected FOA (East End Lower)	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Not Funded in 2015 FOA
A			Address Concerns of USBR CRID 214 - GP2, GP3	USBR, GVWUA		
B	UL-12	End of 2015 Rejected FOA to Start of Previously Lined Canal	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B	LIN-2	Previously Lined Canal	Address O&M Recommendation 2002-2-E	USBR, GVWUA		Category 2 Recommendation
C			Address O&M Recommendation 2014-3-C	Mesa County, USBR	Funding Partnerships	Category 3 Recommendation
A			Replace Indian Wash Spill Gate			
			Address O&M Recommendation 2014-3-D	GVWUA		Category 3 Recommendation
			Address O&M Recommendation 2014-3-E	GVWUA		Category 3 Recommendation
B	UL-13	Below Indian Wash to Above Check Structure	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B			Address O&M Recommendation 2008-2-G	GVWUA, Public entities (GVDD, etc)	Partnerships with GVDD or municipalities	Category 2 Recommendation
B	UL-14	Below Check Structure to I-70 Bridge	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B	UL-15	Below I-70 Bridge to Below Horizon Drive Bridge	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B	UL-16	Below Horizon Drive Bridge to Above Check Structure	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B			Address O&M Recommendation 2008-2-C	GVWUA, Private entities (HOAs)	Private Entity Funding	Category 2 Recommendation
A	UL-17	Below Check Structure to Natural Wash	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP1	USBR, GVWUA		
A			Replace Undershot US-11	GVWUA, GVDD		High Priority Undershot Replacement
B			Address O&M Recommendation 2008-2-C	GVWUA, Private entities (HOAs)	Private Entity Funding	Category 2 Recommendation
A	UL-18	Natural Wash to Leach Creek	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C			Address O&M Recommendation 2008-3-L	GVWUA		Category 3 Recommendation
A	UL-19	Leach Creek to End of High Priority	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP2	USBR, GVWUA		
A			Replace Undershot US-15			High Priority Undershot Replacement
B	UL-20	Start of Medium Priority to Mid-point of Medium Priority	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP2, GP3, GP4	USBR, GVWUA		

Priority Category	Canal Element	Brief Section Description	Potential Project Description	Potential Beneficiaries	External Funding Opportunities	Notes
B	UL-21	Mid-point of Medium Priority to End of Medium Priority	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B			Address O&M Recommendation 2002-2-F	GVWUA		Category 2 Recommendation
C			Address O&M Recommendation 2014-3-G	Public Entities (GVDD)	Funding Partnerships	Category 3 Recommendation
B			Replace timber bridge with steel deck at 1220 Flume			
C	UL-22	Start of Low Priority to Above Check Structure	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP5, GP6	USBR, GVWUA		
B			Line or Sleeve Undershot US-22			Medium Priority Undershot Repair
C			Address O&M Recommendation 2014-3-H	GVWUA		Category 3 Recommendation
C	UL-23	Below Check Structure to Above Pritchard Wash	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C	UL-24	Below Pritchard Wash to Third-Point to next Check	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP7, GP8	USBR, GVWUA		
C			Address O&M Recommendation 2008-3-H	GVWUA		Category 3 Recommendation
C	UL-25	Third-point to next Check to Two-Third Point to Next Check	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP9, GP10	USBR, GVWUA		
			Address O&M Recommendation 2014-3-I	GVWUA		Category 3 Recommendation
C			Address O&M Recommendation 2002-3-A	GVWUA		Category 3 Recommendation
A			Replace Persigo Wash Spill Gate			
C	UL-26	Two-Third Point to Next Check to Above Check Structure	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C			Address O&M Recommendation 2014-3-H	GVWUA		Category 3 Recommendation
C	UL-27	Below Check Structure to End of Low Priority	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP12	USBR, GVWUA		
B	UL-28	Start of Medium Priority to Mid-point of Medium Priority	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B	UL-29	Mid-point of Medium Priority to Above Adobe Creek	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP13, GP14, GP15	USBR, GVWUA		
C	UL-30	Below Adobe Creek to Above Check Structure	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C			Address O&M Recommendation 2014-3-H	GVWUA		Category 3 Recommendation
C	UL-31	Below Check Structure to Mid-point to Little Salt Wash	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C	UL-32	Mid-Point to Little Salt Wash to Above Little Salt Wash	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B			Address O&M Recommendation 2008-2-G	GVWUA, Public entities (GVDD, etc)	Partnerships with GVDD or municipalities	Category 2 Recommendation
C			Address O&M Recommendation 2014-3-J	GVWUA		Category 3 Recommendation
A			Replace Little Salt Wash Spill Gate			
C	UL-33	Below Little Salt Wash to Above Check Structure	Canal Lining	USBR, GVWUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
A			Address Concerns of USBR CRID 215 - GP16	USBR, GVWUA		
C			Address O&M Recommendation 2014-3-K	GVWUA		Category 3 Recommendation



Priority Category	Canal Element	Brief Section Description	Potential Project Description	Potential Beneficiaries	External Funding Opportunities	Notes
C	UL-34	Below Check Structure to Mid-point to next check (East Branch)	Canal Lining	USBR, GVVUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C	UL-35	Mid-point to next Check Structure to Above Check Structure (East Branch)	Canal Lining	USBR, GVVUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C			Address O&M Recommendation 2014-3-L	GVWUA		Category 3 Recommendation
C	UL-36	Below Check Structure (East Branch) to Third-point to Big Salt Wash Siphon	Canal Lining	USBR, GVVUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C	UL-37	Third-point to Big Wash Siphon to Two-Third Point to Big Salt Wash Siphon	Canal Lining	USBR, GVVUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
C	UL-38	Two-Third Point to Big Salt Wash to Big Salt Wash Siphon	Canal Lining	USBR, GVVUA, NGOs	Salinity FOA, NGO Assistance	Unlikely to be fully funded from Salinity FOA
B			Address O&M Recommendation 2003-2-C	GVWUA		Category 2 Recommendation
B			Address O&M Recommendation 2008-2-F	GVWUA		Category 2 Recommendation
C			Add Remote Control System to spill gates at Big Salt Wash Spill			
A			Upgrade Moss and Debris Removal Structure Control System			
C	LIN-3	Previously Lined Canal	Add Remote Control System to Spill Gates at Highline Lake Spill			
C			Add Remote conotrol system to spill gates at East Salt Wash Spill			
B			Replace timber bridge with steel deck at Big Salt Wash			
B			Address O&M Recommendation 2002-2-E	GVWUA, USBR		Category 2 Recommendation
C			Address O&M Recommendation 1996-3-J	GVWUA		Category 3 Recommendation
C			Address O&M Recommendation 2007-3-C	Public Entities (GVDD)	Funding Partnerships	Category 3 Recommendation
C			Address O&M Recommendation 2008-3-F	GVWUA		Category 3 Recommendation
C			Address O&M Recommendation 2008-3-N	GVWUA, GVDD		Category 3 Recommendation
C			Address O&M Recommendation 2008-3-O	GVWUA, GVDD		Category 3 Recommendation
C			Address O&M Recommendation 2014-3-M	GVWUA		Category 3 Recommendation

## Appendix D // Canal Lining Cost Estimates

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GRAND VALLEY WATER USERS ASSOCIATION  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 1

Start Sta 1019+00

End Sta 1036+70

Length 1,770

Below "First 500" High Priority Segment

Above Railroad Bridge Crossing

Upstream Portion - 150% Surface Area

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$73,400.00	\$ 73,400.00
2	Water for Dust Abatement	DAY	32	\$742.63	\$ 23,764.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	3540	\$2.24	\$ 7,930.00
5	Excavate waste material	CY	6452	\$4.24	\$ 27,354.00
6	Haul and disposal of waste material	CY	6452	\$10.15	\$ 65,483.00
7	Excavate reusable material	CY	5205	\$8.49	\$ 44,190.00
8	Import fill material	CY	7545	\$34.07	\$ 257,058.00
9	Placement of fill material	CY	12750	\$5.73	\$ 73,058.00
10	Side slope compaction	DAY	15	\$1,472.40	\$ 22,086.00
11	Underdrain trench excavation	CY	149	\$13.54	\$ 2,017.00
12	Underdrain filter fabric	SF	13293	\$0.30	\$ 3,988.00
13	Underdrain perforated pipe	LF	1,770	\$8.54	\$ 15,116.00
14	Underdrain filter gravel	CY	149	\$48.80	\$ 7,271.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	191,160	\$0.75	\$ 143,370.00
18	Upper layer geotextile fabric	SF	191,160	\$0.30	\$ 57,348.00
19	Lower layer geotextile fabric	SY	191,160	\$0.30	\$ 57,348.00
20	3-inch Shotcrete liner	SY	20071.5	\$28.89	\$ 579,866.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	2354	\$5.95	\$ 14,006.00
23	Safety Ladder	EA	5	\$2,300.00	\$ 11,500.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 1,541,153.00</b>
	Contingency		10%		\$ 154,115.00
	<b>Total Direct Costs</b>				<b>\$ 1,695,268.00</b>
	Construction Management & Testing		8%		\$ 123,292.00
	GVWUA Administrative Overhead		2%		\$ 30,823.00
	Cultural Evaluation/Mitigation		0.5%		\$ 7,706.00
	Design		5%		\$ 77,058.00
	NEPA		3%		\$ 46,235.00
	<b>Total Indirect Costs</b>				<b>\$ 285,114.00</b>
	<b>Total Project Costs</b>				<b>\$ 1,980,382.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	0
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$0.00
Local Funding Required	\$ 1,980,382.00

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 2

Start Sta 1038+75

End Sta 1064+60

Length 2,585

Below Railroad Bridge Crossing

Fish Screen Facility

Upstream Portion - 150% Surface Area

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$106,900.00	\$ 106,900.00
2	Water for Dust Abatement	DAY	47	\$742.63	\$ 34,904.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	5170	\$2.24	\$ 11,581.00
5	Excavate waste material	CY	9423	\$4.24	\$ 39,954.00
6	Haul and disposal of waste material	CY	9423	\$10.15	\$ 95,643.00
7	Excavate reusable material	CY	7605	\$8.49	\$ 64,566.00
8	Import fill material	CY	11025	\$34.07	\$ 375,622.00
9	Placement of fill material	CY	18630	\$5.73	\$ 106,750.00
10	Side slope compaction	DAY	22	\$1,472.40	\$ 32,393.00
11	Underdrain trench excavation	CY	217	\$13.54	\$ 2,938.00
12	Underdrain filter fabric	SF	19413	\$0.30	\$ 5,824.00
13	Underdrain perforated pipe	LF	2,585	\$8.54	\$ 22,076.00
14	Underdrain filter gravel	CY	217	\$48.80	\$ 10,590.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	279,180	\$0.75	\$ 209,385.00
18	Upper layer geotextile fabric	SF	279,180	\$0.30	\$ 83,754.00
19	Lower layer geotextile fabric	SY	279,180	\$0.30	\$ 83,754.00
20	3-inch Shotcrete liner	SY	29314.5	\$28.89	\$ 846,896.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	3438	\$5.95	\$ 20,456.00
23	Safety Ladder	EA	7	\$2,300.00	\$ 16,100.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	2	\$10,000.00	\$ 20,000.00
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 2,245,086.00</b>
	Contingency		10%		\$ 224,509.00
	<b>Total Direct Costs</b>				<b>\$ 2,469,595.00</b>
	Construction Management & Testing		8%		\$ 179,607.00
	GVWUA Administrative Overhead		2%		\$ 44,902.00
	Cultural Evaluation/Mitigation		0.5%		\$ 11,225.00
	Design		5%		\$ 112,254.00
	NEPA		3%		\$ 67,353.00
	<b>Total Indirect Costs</b>				<b>\$ 415,341.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,884,936.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	0
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$0.00
Local Funding Required	\$ 2,884,936.00



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 3

Start Sta 1065+50

End Sta 1084+40

Length 1,890

Adjacent to Fish Screen Facility

Above Ashley Creek Bridge

Upstream Portion - 150% Surface Area

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$125,300.00	\$ 125,300.00
2	Water for Dust Abatement	DAY	34	\$742.63	\$ 25,249.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	3780	\$2.24	\$ 8,467.00
5	Excavate waste material	CY	6890	\$4.24	\$ 29,211.00
6	Haul and disposal of waste material	CY	98750	\$10.15	\$ 1,002,307.00
7	Excavate reusable material	CY	5565	\$8.49	\$ 47,247.00
8	Import fill material	CY	8055	\$34.07	\$ 274,434.00
9	Placement of fill material	CY	13620	\$5.73	\$ 78,043.00
10	Side slope compaction	DAY	16	\$1,472.40	\$ 23,558.00
11	Underdrain trench excavation	CY	159	\$13.54	\$ 2,153.00
12	Underdrain filter fabric	SF	14194	\$0.30	\$ 4,258.00
13	Underdrain perforated pipe	LF	1,890	\$8.54	\$ 16,141.00
14	Underdrain filter gravel	CY	159	\$48.80	\$ 7,759.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	204,120	\$0.75	\$ 153,090.00
18	Upper layer geotextile fabric	SF	204,120	\$0.30	\$ 61,236.00
19	Lower layer geotextile fabric	SY	204,120	\$0.30	\$ 61,236.00
20	3-inch Shotcrete liner	SY	21432	\$28.89	\$ 619,170.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	2514	\$5.95	\$ 14,958.00
23	Safety Ladder	EA	5	\$2,300.00	\$ 11,500.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	1	\$10,000.00	\$ 10,000.00
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 2,630,317.00</b>
	Contingency		10%		\$ 263,032.00
	<b>Total Direct Costs</b>				<b>\$ 2,893,349.00</b>
	Construction Management & Testing		8%		\$ 210,425.00
	GVWUA Administrative Overhead		2%		\$ 52,606.00
	Cultural Evaluation/Mitigation		0.5%		\$ 13,152.00
	Design		5%		\$ 131,516.00
	NEPA		3%		\$ 78,910.00
	<b>Total Indirect Costs</b>				<b>\$ 486,609.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,379,958.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	0
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$0.00
Local Funding Required	\$ 3,379,958.00

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 4

Start Sta 1086+00

End Sta 1104+70

Length 1,870

Below Ashley Creek Bridge

Start of Tunnel No. 1

Upstream Portion - 150% Surface Area

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$78,900.00	\$ 78,900.00
2	Water for Dust Abatement	DAY	34	\$742.63	\$ 25,249.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	3740	\$2.24	\$ 8,378.00
5	Excavate waste material	CY	6816	\$4.24	\$ 28,900.00
6	Haul and disposal of waste material	CY	6816	\$10.15	\$ 69,182.00
7	Excavate reusable material	CY	5505	\$8.49	\$ 46,737.00
8	Import fill material	CY	7980	\$34.07	\$ 271,879.00
9	Placement of fill material	CY	13485	\$5.73	\$ 77,269.00
10	Side slope compaction	DAY	16	\$1,472.40	\$ 23,558.00
11	Underdrain trench excavation	CY	157	\$13.54	\$ 2,126.00
12	Underdrain filter fabric	SF	14044	\$0.30	\$ 4,213.00
13	Underdrain perforated pipe	LF	1,870	\$8.54	\$ 15,970.00
14	Underdrain filter gravel	CY	157	\$48.80	\$ 7,662.00
15	Connections of underdrain to GVDD system	EA	1	\$6,000.00	\$ 6,000.00
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	201,960	\$0.75	\$ 151,470.00
18	Upper layer geotextile fabric	SF	201,960	\$0.30	\$ 60,588.00
19	Lower layer geotextile fabric	SY	201,960	\$0.30	\$ 60,588.00
20	3-inch Shotcrete liner	SY	21205.5	\$28.89	\$ 612,627.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	2487	\$5.95	\$ 14,798.00
23	Safety Ladder	EA	5	\$2,300.00	\$ 11,500.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 1,657,594.00</b>
	Contingency		10%		\$ 165,759.00
	<b>Total Direct Costs</b>				<b>\$ 1,823,353.00</b>
	Construction Management & Testing		8%		\$ 132,608.00
	GVWUA Administrative Overhead		2%		\$ 33,152.00
	Cultural Evaluation/Mitigation		0.5%		\$ 8,288.00
	Design		5%		\$ 82,880.00
	NEPA		3%		\$ 49,728.00
	<b>Total Indirect Costs</b>				<b>\$ 306,656.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,130,009.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	0
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$0.00
Local Funding Required	\$ 2,130,009.00

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
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Segment # 5

Start Sta 1149+00

End Sta 1202+75

Length 5,375

End of Tunnel No. 1

Above Coal Creek Bridge

Upstream Portion - 150% Surface Area

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$217,400.00	\$ 217,400.00
2	Water for Dust Abatement	DAY	97	\$742.63	\$ 72,035.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	10750	\$2.24	\$ 24,080.00
5	Excavate waste material	CY	19592	\$4.24	\$ 83,068.00
6	Haul and disposal of waste material	CY	19592	\$10.15	\$ 198,854.00
7	Excavate reusable material	CY	15810	\$8.49	\$ 134,227.00
8	Import fill material	CY	22905	\$34.07	\$ 780,373.00
9	Placement of fill material	CY	38715	\$5.73	\$ 221,837.00
10	Side slope compaction	DAY	45	\$1,472.40	\$ 66,258.00
11	Underdrain trench excavation	CY	451	\$13.54	\$ 6,107.00
12	Underdrain filter fabric	SF	40366	\$0.30	\$ 12,110.00
13	Underdrain perforated pipe	LF	5,375	\$8.54	\$ 45,903.00
14	Underdrain filter gravel	CY	451	\$48.80	\$ 22,009.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	580,500	\$0.75	\$ 435,375.00
18	Upper layer geotextile fabric	SF	580,500	\$0.30	\$ 174,150.00
19	Lower layer geotextile fabric	SY	580,500	\$0.30	\$ 174,150.00
20	3-inch Shotcrete liner	SY	60952.5	\$28.89	\$ 1,760,918.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	7149	\$5.95	\$ 42,537.00
23	Safety Ladder	EA	15	\$2,300.00	\$ 34,500.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 4,565,891.00</b>
	Contingency		10%		\$ 456,589.00
	<b>Total Direct Costs</b>				<b>\$ 5,022,480.00</b>
	Construction Management & Testing		8%		\$ 365,271.00
	GVWUA Administrative Overhead		2%		\$ 91,318.00
	Cultural Evaluation/Mitigation		0.5%		\$ 22,829.00
	Design		5%		\$ 228,295.00
	NEPA		3%		\$ 136,977.00
	<b>Total Indirect Costs</b>				<b>\$ 844,690.00</b>
	<b>Total Project Costs</b>				<b>\$ 5,867,170.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	0
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$0.00
Local Funding Required	\$ 5,867,170.00



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
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Segment # 6

Start Sta 1204+65

End Sta 1226+80

Length 2,215

Below Coal Creek Bridge

Start of Tunnel No. 2

Upstream Portion - 150% Surface Area

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$91,900.00	\$ 91,900.00
2	Water for Dust Abatement	DAY	40	\$742.63	\$ 29,705.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	4430	\$2.24	\$ 9,923.00
5	Excavate waste material	CY	8073	\$4.24	\$ 34,230.00
6	Haul and disposal of waste material	CY	8073	\$10.15	\$ 81,941.00
7	Excavate reusable material	CY	6525	\$8.49	\$ 55,397.00
8	Import fill material	CY	9450	\$34.07	\$ 321,962.00
9	Placement of fill material	CY	15975	\$5.73	\$ 91,537.00
10	Side slope compaction	DAY	19	\$1,472.40	\$ 27,976.00
11	Underdrain trench excavation	CY	186	\$13.54	\$ 2,518.00
12	Underdrain filter fabric	SF	16635	\$0.30	\$ 4,991.00
13	Underdrain perforated pipe	LF	2,215	\$8.54	\$ 18,916.00
14	Underdrain filter gravel	CY	186	\$48.80	\$ 9,077.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	239,220	\$0.75	\$ 179,415.00
18	Upper layer geotextile fabric	SF	239,220	\$0.30	\$ 71,766.00
19	Lower layer geotextile fabric	SY	239,220	\$0.30	\$ 71,766.00
20	3-inch Shotcrete liner	SY	25117.5	\$28.89	\$ 725,645.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	2946	\$5.95	\$ 17,529.00
23	Safety Ladder	EA	6	\$2,300.00	\$ 13,800.00
24	Liner Transition to Structure (Type 1)	EA	4	\$5,000.00	\$ 20,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 1,929,994.00</b>
	Contingency		10%		\$ 192,999.00
	<b>Total Direct Costs</b>				<b>\$ 2,122,993.00</b>
	Construction Management & Testing		8%		\$ 154,400.00
	GVWUA Administrative Overhead		2%		\$ 38,600.00
	Cultural Evaluation/Mitigation		0.5%		\$ 9,650.00
	Design		5%		\$ 96,500.00
	NEPA		3%		\$ 57,900.00
	<b>Total Indirect Costs</b>				<b>\$ 357,050.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,480,043.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	0
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$0.00
Local Funding Required	\$ 2,480,043.00

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
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Segment # 7

Start Sta 1243+60

End Sta 1258+80

Length 1,520

End of Tunnel No. 2

Start of Tunnel No. 3

Upstream Portion - 150% Surface Area

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$65,700.00	\$ 65,700.00
2	Water for Dust Abatement	DAY	28	\$742.63	\$ 20,794.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	3040	\$2.24	\$ 6,810.00
5	Excavate waste material	CY	5541	\$4.24	\$ 23,494.00
6	Haul and disposal of waste material	CY	5541	\$10.15	\$ 56,241.00
7	Excavate reusable material	CY	4470	\$8.49	\$ 37,950.00
8	Import fill material	CY	6480	\$34.07	\$ 220,774.00
9	Placement of fill material	CY	10950	\$5.73	\$ 62,744.00
10	Side slope compaction	DAY	13	\$1,472.40	\$ 19,141.00
11	Underdrain trench excavation	CY	128	\$13.54	\$ 1,733.00
12	Underdrain filter fabric	SF	11415	\$0.30	\$ 3,425.00
13	Underdrain perforated pipe	LF	1,520	\$8.54	\$ 12,981.00
14	Underdrain filter gravel	CY	128	\$48.80	\$ 6,246.00
15	Connections of underdrain to GVDD system	EA	1	\$6,000.00	\$ 6,000.00
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	164,160	\$0.75	\$ 123,120.00
18	Upper layer geotextile fabric	SF	164,160	\$0.30	\$ 49,248.00
19	Lower layer geotextile fabric	SY	164,160	\$0.30	\$ 49,248.00
20	3-inch Shotcrete liner	SY	17236.5	\$28.89	\$ 497,962.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	2022	\$5.95	\$ 12,031.00
23	Safety Ladder	EA	4	\$2,300.00	\$ 9,200.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	1	\$10,000.00	\$ 10,000.00
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 1,379,442.00</b>
	Contingency		10%		\$ 137,944.00
	<b>Total Direct Costs</b>				<b>\$ 1,517,386.00</b>
	Construction Management & Testing		8%		\$ 110,355.00
	GVWUA Administrative Overhead		2%		\$ 27,589.00
	Cultural Evaluation/Mitigation		0.5%		\$ 6,897.00
	Design		5%		\$ 68,972.00
	NEPA		3%		\$ 41,383.00
	<b>Total Indirect Costs</b>				<b>\$ 255,196.00</b>
	<b>Total Project Costs</b>				<b>\$ 1,772,582.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	0
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$0.00
Local Funding Required	\$ 1,772,582.00

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
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Segment # 8

Start Sta 1334+00

End Sta 1374+70

Length 4,070

Price-Stub Pump (East End Upper)

Below Bower Ave. Bridge (East End Upper)

Estimated Perimeter (ft): 67.82

Canal Floor Width (ft): 30.92

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$124,400.00	\$ 124,400.00
2	Water for Dust Abatement	DAY	74	\$742.63	\$ 54,955.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8140	\$2.24	\$ 18,234.00
5	Excavate waste material	CY	9791	\$4.24	\$ 41,514.00
6	Haul and disposal of waste material	CY	9791	\$10.15	\$ 99,379.00
7	Excavate reusable material	CY	7980	\$8.49	\$ 67,750.00
8	Import fill material	CY	11560	\$34.07	\$ 393,849.00
9	Placement of fill material	CY	19540	\$5.73	\$ 111,964.00
10	Side slope compaction	DAY	34	\$1,472.40	\$ 50,062.00
11	Underdrain trench excavation	CY	341	\$13.54	\$ 4,617.00
12	Underdrain filter fabric	SF	30566	\$0.30	\$ 9,170.00
13	Underdrain perforated pipe	LF	4,070	\$8.54	\$ 34,758.00
14	Underdrain filter gravel	CY	341	\$48.80	\$ 16,641.00
15	Connections of underdrain to GVDD system	EA	2	\$6,000.00	\$ 12,000.00
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	276,027	\$0.75	\$ 207,020.00
18	Upper layer geotextile fabric	SF	276,027	\$0.30	\$ 82,808.00
19	Lower layer geotextile fabric	SY	276,027	\$0.30	\$ 82,808.00
20	3-inch Shotcrete liner	SY	30670	\$28.89	\$ 886,056.00
21	Irrigation crossing	EA	7	\$16,250.00	\$ 113,750.00
22	Gravel canal road surface	SY	5413	\$5.95	\$ 32,207.00
23	Safety Ladder	EA	12	\$2,300.00	\$ 27,600.00
24	Liner Transition to Structure (Type 1)	EA	6	\$5,000.00	\$ 30,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	3	\$20,000.00	\$ 60,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,611,542.00</b>
	Contingency		10%		\$ 261,154.00
	<b>Total Direct Costs</b>				<b>\$ 2,872,696.00</b>
	Construction Management & Testing		8%		\$ 208,923.00
	GVWUA Administrative Overhead		2%		\$ 52,231.00
	Cultural Evaluation/Mitigation		0.5%		\$ 13,058.00
	Design		5%		\$ 130,577.00
	NEPA		3%		\$ 78,346.00
	<b>Total Indirect Costs</b>				<b>\$ 483,135.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,355,831.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	2063
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$2,969,965.03
Local Funding Required	\$ 385,865.97



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
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Segment # 9

Start Sta 1374+70

End Sta 1412+00

Length 3,730

Below Bower Ave. Bridge (East End Upper)

Begin 2015 FOA (East End Middle)

Estimated Perimeter (ft): 66.1

Canal Floor Width (ft): 33.8

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$109,500.00	\$ 109,500.00
2	Water for Dust Abatement	DAY	68	\$742.63	\$ 50,499.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	7460	\$2.24	\$ 16,710.00
5	Excavate waste material	CY	9809	\$4.24	\$ 41,590.00
6	Haul and disposal of waste material	CY	9809	\$10.15	\$ 99,561.00
7	Excavate reusable material	CY	7320	\$8.49	\$ 62,147.00
8	Import fill material	CY	10600	\$34.07	\$ 361,142.00
9	Placement of fill material	CY	17920	\$5.73	\$ 102,682.00
10	Side slope compaction	DAY	31	\$1,472.40	\$ 45,644.00
11	Underdrain trench excavation	CY	313	\$13.54	\$ 4,238.00
12	Underdrain filter fabric	SF	28012	\$0.30	\$ 8,404.00
13	Underdrain perforated pipe	LF	3,730	\$8.54	\$ 31,854.00
14	Underdrain filter gravel	CY	313	\$48.80	\$ 15,274.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	246,553	\$0.75	\$ 184,915.00
18	Upper layer geotextile fabric	SF	246,553	\$0.30	\$ 73,966.00
19	Lower layer geotextile fabric	SY	246,553	\$0.30	\$ 73,966.00
20	3-inch Shotcrete liner	SY	27395	\$28.89	\$ 791,442.00
21	Irrigation crossing	EA	6	\$16,250.00	\$ 97,500.00
22	Gravel canal road surface	SY	4961	\$5.95	\$ 29,518.00
23	Safety Ladder	EA	11	\$2,300.00	\$ 25,300.00
24	Liner Transition to Structure (Type 1)	EA	3	\$5,000.00	\$ 15,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 2,300,452.00</b>
	Contingency		10%		\$ 230,045.00
	<b>Total Direct Costs</b>				<b>\$ 2,530,497.00</b>
	Construction Management & Testing		8%		\$ 184,036.00
	GVWUA Administrative Overhead		2%		\$ 46,009.00
	Cultural Evaluation/Mitigation		0.5%		\$ 11,502.00
	Design		5%		\$ 115,023.00
	NEPA		3%		\$ 69,014.00
	<b>Total Indirect Costs</b>				<b>\$ 425,584.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,956,081.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	1890
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$2,720,908.34
Local Funding Required	\$ 235,172.66

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
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Segment # 10

Start Sta 1412+00

End Sta 1463+25

Length 5,125

Begin 2015 FOA (East End Middle)

End 2015 FOA (East End Middle)

Estimated Perimeter (ft): 66.08

Canal Floor Width (ft): 28.6

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$139,300.00	\$ 139,300.00
2	Water for Dust Abatement	DAY	93	\$742.63	\$ 69,065.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	10250	\$2.24	\$ 22,960.00
5	Excavate waste material	CY	11404	\$4.24	\$ 48,353.00
6	Haul and disposal of waste material	CY	11404	\$10.15	\$ 115,751.00
7	Excavate reusable material	CY	14000	\$8.49	\$ 118,860.00
8	Import fill material	CY	7680	\$34.07	\$ 261,658.00
9	Placement of fill material	CY	21680	\$5.73	\$ 124,226.00
10	Side slope compaction	DAY	43	\$1,472.40	\$ 63,313.00
11	Underdrain trench excavation	CY	430	\$13.54	\$ 5,822.00
12	Underdrain filter fabric	SF	38489	\$0.30	\$ 11,547.00
13	Underdrain perforated pipe	LF	5,125	\$8.54	\$ 43,768.00
14	Underdrain filter gravel	CY	430	\$48.80	\$ 20,984.00
15	Connections of underdrain to GVDD system	EA	2	\$6,000.00	\$ 12,000.00
16	Turnouts	EA	2	\$9,600.00	\$ 19,200.00
17	30 mil PVC lining	SF	338,660	\$0.75	\$ 253,995.00
18	Upper layer geotextile fabric	SF	338,660	\$0.30	\$ 101,598.00
19	Lower layer geotextile fabric	SY	338,660	\$0.30	\$ 101,598.00
20	3-inch Shotcrete liner	SY	37629	\$28.89	\$ 1,087,102.00
21	Irrigation crossing	EA	8	\$16,250.00	\$ 130,000.00
22	Gravel canal road surface	SY	6816	\$5.95	\$ 40,555.00
23	Safety Ladder	EA	15	\$2,300.00	\$ 34,500.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	2	\$20,000.00	\$ 40,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,926,155.00</b>
	Contingency		8.6%		\$ 251,649.00
	<b>Total Direct Costs</b>				<b>\$ 3,177,804.00</b>
	Construction Management & Testing		8%		\$ 234,092.00
	GVWUA Administrative Overhead		2%		\$ 58,523.00
	Cultural Evaluation/Mitigation		0.5%		\$ 14,631.00
	Design		5%		\$ 146,308.00
	NEPA		3%		\$ 87,785.00
	<b>Total Indirect Costs</b>				<b>\$ 541,339.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,719,143.00</b>

Salinity	2583
GVWUA Contribution	\$150,240
Amortization Rate	3.38%
Cost per Ton	\$57.59 FUNDED!

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
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Segment # 11

Start Sta 1465+25

End Sta 1513+00

Length 4,775

Begin 2015 FOA (East End Lower)

End 2015 FOA (East End Lower)

Estimated Perimeter (ft): 66.38

Canal Floor Width (ft): 24

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$153,100.00	\$ 153,100.00
2	Water for Dust Abatement	DAY	86	\$742.63	\$ 63,866.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9550	\$2.24	\$ 21,392.00
5	Excavate waste material	CY	8916	\$4.24	\$ 37,804.00
6	Haul and disposal of waste material	CY	8916	\$10.15	\$ 90,497.00
7	Excavate reusable material	CY	5500	\$8.49	\$ 46,695.00
8	Import fill material	CY	20660	\$34.07	\$ 703,886.00
9	Placement of fill material	CY	26160	\$5.73	\$ 149,897.00
10	Side slope compaction	DAY	40	\$1,472.40	\$ 58,896.00
11	Underdrain trench excavation	CY	401	\$13.54	\$ 5,430.00
12	Underdrain filter fabric	SF	35860	\$0.30	\$ 10,758.00
13	Underdrain perforated pipe	LF	4,775	\$8.54	\$ 40,779.00
14	Underdrain filter gravel	CY	1,600	\$48.80	\$ 78,080.00
15	Connections of underdrain to GVDD system	EA	4	\$6,000.00	\$ 24,000.00
16	Turnouts	EA	6	\$9,600.00	\$ 57,600.00
17	30 mil PVC lining	SF	316,965	\$0.75	\$ 237,724.00
18	Upper layer geotextile fabric	SF	316,965	\$0.30	\$ 95,090.00
19	Lower layer geotextile fabric	SY	316,965	\$0.30	\$ 95,090.00
20	3-inch Shotcrete liner	SY	35218	\$28.89	\$ 1,017,448.00
21	Irrigation crossing	EA	1	\$16,250.00	\$ 16,250.00
22	Gravel canal road surface	SY	6351	\$5.95	\$ 37,788.00
23	Safety Ladder	EA	14	\$2,300.00	\$ 32,200.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	4	\$20,000.00	\$ 80,000.00
	<b>Construction Subtotal</b>				<b>\$ 3,214,270.00</b>
	Contingency		6.5%		\$ 208,928.00
	<b>Total Direct Costs</b>				<b>\$ 3,423,198.00</b>
	Construction Management & Testing		8%		\$ 257,142.00
	GVWUA Administrative Overhead		2%		\$ 64,285.00
	Cultural Evaluation/Mitigation		0.5%		\$ 16,071.00
	Design		5%		\$ 160,714.00
	NEPA		3%		\$ 96,428.00
	<b>Total Indirect Costs</b>				<b>\$ 594,640.00</b>
	<b>Total Project Costs</b>				<b>\$ 4,017,838.00</b>

Salinity - Tons per year	2394
GVWUA Contribution	\$174,420
Amortization Rate	3.375%
Cost per Ton	\$66.91

NOT FUNDED!



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
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Segment # 12

Start Sta 1513+00

End Sta 1527+00

Length 1,400

End 2015 FOA (East End Lower)

Start of Previously Lined Canal

Estimated Perimeter (ft): 66.38

Canal Floor Width (ft): 24

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$42,100.00	\$ 42,100.00
2	Water for Dust Abatement	DAY	25	\$742.63	\$ 18,566.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	2800	\$2.24	\$ 6,272.00
5	Excavate waste material	CY	2614	\$4.24	\$ 11,083.00
6	Haul and disposal of waste material	CY	2614	\$10.15	\$ 26,532.00
7	Excavate reusable material	CY	2750	\$8.49	\$ 23,348.00
8	Import fill material	CY	3980	\$34.07	\$ 135,599.00
9	Placement of fill material	CY	6730	\$5.73	\$ 38,563.00
10	Side slope compaction	DAY	12	\$1,472.40	\$ 17,669.00
11	Underdrain trench excavation	CY	117	\$13.54	\$ 1,584.00
12	Underdrain filter fabric	SF	10514	\$0.30	\$ 3,154.00
13	Underdrain perforated pipe	LF	1,400	\$8.54	\$ 11,956.00
14	Underdrain filter gravel	CY	117	\$48.80	\$ 5,710.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	92,932	\$0.75	\$ 69,699.00
18	Upper layer geotextile fabric	SF	92,932	\$0.30	\$ 27,880.00
19	Lower layer geotextile fabric	SY	92,932	\$0.30	\$ 27,880.00
20	3-inch Shotcrete liner	SY	10326	\$28.89	\$ 298,318.00
21	Irrigation crossing	EA	2	\$16,250.00	\$ 32,500.00
22	Gravel canal road surface	SY	1862	\$5.95	\$ 11,079.00
23	Safety Ladder	EA	4	\$2,300.00	\$ 9,200.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 883,292.00</b>
	Contingency		10%		\$ 88,329.00
	<b>Total Direct Costs</b>				<b>\$ 971,621.00</b>
	Construction Management & Testing		8%		\$ 70,663.00
	GVWUA Administrative Overhead		2%		\$ 17,666.00
	Cultural Evaluation/Mitigation		0.5%		\$ 4,416.00
	Design		5%		\$ 44,165.00
	NEPA		3%		\$ 26,499.00
	<b>Total Indirect Costs</b>				<b>\$ 163,409.00</b>
	<b>Total Project Costs</b>				<b>\$ 1,135,030.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	702
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$38,794.58
Local Funding Required	\$ 1,096,235.42

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 13

Start Sta 1918+50

End Sta 1929+50

Length 1,100

Below Indian Wash

Above Check Structure

Estimated Perimeter (ft): 85.11

Canal Floor Width (ft): 28.4

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$37,900.00	\$ 37,900.00
2	Water for Dust Abatement	DAY	20	\$742.63	\$ 14,853.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	2200	\$2.24	\$ 4,928.00
5	Excavate waste material	CY	2430	\$4.24	\$ 10,303.00
6	Haul and disposal of waste material	CY	2430	\$10.15	\$ 24,665.00
7	Excavate reusable material	CY	2160	\$8.49	\$ 18,338.00
8	Import fill material	CY	3130	\$34.07	\$ 106,639.00
9	Placement of fill material	CY	5290	\$5.73	\$ 30,312.00
10	Side slope compaction	DAY	9	\$1,472.40	\$ 13,252.00
11	Underdrain trench excavation	CY	92	\$13.54	\$ 1,246.00
12	Underdrain filter fabric	SF	8261	\$0.30	\$ 2,478.00
13	Underdrain perforated pipe	LF	1,100	\$8.54	\$ 9,394.00
14	Underdrain filter gravel	CY	92	\$48.80	\$ 4,490.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	2	\$9,600.00	\$ 19,200.00
17	30 mil PVC lining	SF	93,621	\$0.75	\$ 70,216.00
18	Upper layer geotextile fabric	SF	93,621	\$0.30	\$ 28,086.00
19	Lower layer geotextile fabric	SY	93,621	\$0.30	\$ 28,086.00
20	3-inch Shotcrete liner	SY	10402	\$28.89	\$ 300,514.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	1463	\$5.95	\$ 8,705.00
23	Safety Ladder	EA	3	\$2,300.00	\$ 6,900.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 795,505.00</b>
	Contingency		10%		\$ 79,551.00
	<b>Total Direct Costs</b>				<b>\$ 875,056.00</b>
	Construction Management & Testing		8%		\$ 63,640.00
	GVWUA Administrative Overhead		2%		\$ 15,910.00
	Cultural Evaluation/Mitigation		0.5%		\$ 3,978.00
	Design		5%		\$ 39,775.00
	NEPA		3%		\$ 23,865.00
	<b>Total Indirect Costs</b>				<b>\$ 147,168.00</b>
	<b>Total Project Costs</b>				<b>\$ 1,022,224.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	202
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$290,806.08
Local Funding Required	\$ 731,417.92

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 14

Start Sta 1929+75

End Sta 1969+00

Length 3,925

Below Check Structure

Below I-70 Bridge

Estimated Perimeter (ft): 69.47

Canal Floor Width (ft): 29.7

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$115,700.00	\$ 115,700.00
2	Water for Dust Abatement	DAY	71	\$742.63	\$ 52,727.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	7850	\$2.24	\$ 17,584.00
5	Excavate waste material	CY	9069	\$4.24	\$ 38,453.00
6	Haul and disposal of waste material	CY	9069	\$10.15	\$ 92,050.00
7	Excavate reusable material	CY	7700	\$8.49	\$ 65,373.00
8	Import fill material	CY	11150	\$34.07	\$ 379,881.00
9	Placement of fill material	CY	18850	\$5.73	\$ 108,011.00
10	Side slope compaction	DAY	33	\$1,472.40	\$ 48,589.00
11	Underdrain trench excavation	CY	329	\$13.54	\$ 4,455.00
12	Underdrain filter fabric	SF	29477	\$0.30	\$ 8,843.00
13	Underdrain perforated pipe	LF	3,925	\$8.54	\$ 33,520.00
14	Underdrain filter gravel	CY	329	\$48.80	\$ 16,055.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	5	\$9,600.00	\$ 48,000.00
17	30 mil PVC lining	SF	272,670	\$0.75	\$ 204,503.00
18	Upper layer geotextile fabric	SF	272,670	\$0.30	\$ 81,801.00
19	Lower layer geotextile fabric	SY	272,670	\$0.30	\$ 81,801.00
20	3-inch Shotcrete liner	SY	30297	\$28.89	\$ 875,280.00
21	Irrigation crossing	EA	1	\$16,250.00	\$ 16,250.00
22	Gravel canal road surface	SY	5220	\$5.95	\$ 31,059.00
23	Safety Ladder	EA	11	\$2,300.00	\$ 25,300.00
24	Liner Transition to Structure (Type 1)	EA	7	\$5,000.00	\$ 35,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 2,430,235.00</b>
	Contingency		10%		\$ 243,024.00
	<b>Total Direct Costs</b>				<b>\$ 2,673,259.00</b>
	Construction Management & Testing		8%		\$ 194,419.00
	GVWUA Administrative Overhead		2%		\$ 48,605.00
	Cultural Evaluation/Mitigation		0.5%		\$ 12,151.00
	Design		5%		\$ 121,512.00
	NEPA		3%		\$ 72,907.00
	<b>Total Indirect Costs</b>				<b>\$ 449,594.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,122,853.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	719
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,035,096.88
Local Funding Required	\$ 2,087,756.12



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 15

Start Sta 1969+00

End Sta 2000+00

Length 3,100

Below I-70 Bridge

Below Horizon Drive Bridge

Estimated Perimeter (ft): 64.8

Canal Floor Width (ft): 30.1

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$86,600.00	\$ 86,600.00
2	Water for Dust Abatement	DAY	56	\$742.63	\$ 41,587.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	6200	\$2.24	\$ 13,888.00
5	Excavate waste material	CY	7260	\$4.24	\$ 30,782.00
6	Haul and disposal of waste material	CY	7260	\$10.15	\$ 73,689.00
7	Excavate reusable material	CY	6080	\$8.49	\$ 51,619.00
8	Import fill material	CY	8810	\$34.07	\$ 300,157.00
9	Placement of fill material	CY	14890	\$5.73	\$ 85,320.00
10	Side slope compaction	DAY	26	\$1,472.40	\$ 38,282.00
11	Underdrain trench excavation	CY	260	\$13.54	\$ 3,520.00
12	Underdrain filter fabric	SF	23281	\$0.30	\$ 6,984.00
13	Underdrain perforated pipe	LF	3,100	\$8.54	\$ 26,474.00
14	Underdrain filter gravel	CY	260	\$48.80	\$ 12,688.00
15	Connections of underdrain to GVDD system	EA	1	\$6,000.00	\$ 6,000.00
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	200,880	\$0.75	\$ 150,660.00
18	Upper layer geotextile fabric	SF	200,880	\$0.30	\$ 60,264.00
19	Lower layer geotextile fabric	SY	200,880	\$0.30	\$ 60,264.00
20	3-inch Shotcrete liner	SY	22320	\$28.89	\$ 644,825.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	4123	\$5.95	\$ 24,532.00
23	Safety Ladder	EA	9	\$2,300.00	\$ 20,700.00
24	Liner Transition to Structure (Type 1)	EA	0	\$5,000.00	\$ -
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 1,818,435.00</b>
	Contingency		10%		\$ 181,844.00
	<b>Total Direct Costs</b>				<b>\$ 2,000,279.00</b>
	Construction Management & Testing		8%		\$ 145,475.00
	GVWUA Administrative Overhead		2%		\$ 36,369.00
	Cultural Evaluation/Mitigation		0.5%		\$ 9,092.00
	Design		5%		\$ 90,922.00
	NEPA		3%		\$ 54,553.00
	<b>Total Indirect Costs</b>				<b>\$ 336,411.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,336,690.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	568
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$817,712.14
Local Funding Required	\$ 1,518,977.86

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 16

Start Sta 2000+00

End Sta 2054+00

Length 5,400

Below Horizon Drive Bridge

Above Check Structure

Estimated Perimeter (ft): 65.52

Canal Floor Width (ft): 30

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$150,100.00	\$ 150,100.00
2	Water for Dust Abatement	DAY	98	\$742.63	\$ 72,778.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	10800	\$2.24	\$ 24,192.00
5	Excavate waste material	CY	12604	\$4.24	\$ 53,441.00
6	Haul and disposal of waste material	CY	12604	\$10.15	\$ 127,931.00
7	Excavate reusable material	CY	10590	\$8.49	\$ 89,909.00
8	Import fill material	CY	15340	\$34.07	\$ 522,634.00
9	Placement of fill material	CY	25930	\$5.73	\$ 148,579.00
10	Side slope compaction	DAY	45	\$1,472.40	\$ 66,258.00
11	Underdrain trench excavation	CY	453	\$13.54	\$ 6,134.00
12	Underdrain filter fabric	SF	40554	\$0.30	\$ 12,166.00
13	Underdrain perforated pipe	LF	5,400	\$8.54	\$ 46,116.00
14	Underdrain filter gravel	CY	453	\$48.80	\$ 22,106.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	4	\$9,600.00	\$ 38,400.00
17	30 mil PVC lining	SF	353,808	\$0.75	\$ 265,356.00
18	Upper layer geotextile fabric	SF	353,808	\$0.30	\$ 106,142.00
19	Lower layer geotextile fabric	SY	353,808	\$0.30	\$ 106,142.00
20	3-inch Shotcrete liner	SY	39312	\$28.89	\$ 1,135,724.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	7182	\$5.95	\$ 42,733.00
23	Safety Ladder	EA	15	\$2,300.00	\$ 34,500.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 3,151,341.00</b>
	Contingency		10%		\$ 315,134.00
	<b>Total Direct Costs</b>				<b>\$ 3,466,475.00</b>
	Construction Management & Testing		8%		\$ 252,107.00
	GVWUA Administrative Overhead		2%		\$ 63,027.00
	Cultural Evaluation/Mitigation		0.5%		\$ 15,757.00
	Design		5%		\$ 157,567.00
	NEPA		3%		\$ 94,540.00
	<b>Total Indirect Costs</b>				<b>\$ 582,998.00</b>
	<b>Total Project Costs</b>				<b>\$ 4,049,473.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	989
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,423,798.07
Local Funding Required	\$ 2,625,674.93

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 17

Start Sta 2055+25

End Sta 2086+00

Length 3,075

Below Check Structure

At Natural Wash

Estimated Perimeter (ft): 68.52

Canal Floor Width (ft): 28.7

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$91,800.00	\$ 91,800.00
2	Water for Dust Abatement	DAY	56	\$742.63	\$ 41,587.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	6150	\$2.24	\$ 13,776.00
5	Excavate waste material	CY	6866	\$4.24	\$ 29,112.00
6	Haul and disposal of waste material	CY	6866	\$10.15	\$ 69,690.00
7	Excavate reusable material	CY	6030	\$8.49	\$ 51,195.00
8	Import fill material	CY	8740	\$34.07	\$ 297,772.00
9	Placement of fill material	CY	14770	\$5.73	\$ 84,632.00
10	Side slope compaction	DAY	26	\$1,472.40	\$ 38,282.00
11	Underdrain trench excavation	CY	258	\$13.54	\$ 3,493.00
12	Underdrain filter fabric	SF	23093	\$0.30	\$ 6,928.00
13	Underdrain perforated pipe	LF	3,075	\$8.54	\$ 26,261.00
14	Underdrain filter gravel	CY	258	\$48.80	\$ 12,590.00
15	Connections of underdrain to GVDD system	EA	1	\$6,000.00	\$ 6,000.00
16	Turnouts	EA	5	\$9,600.00	\$ 48,000.00
17	30 mil PVC lining	SF	210,699	\$0.75	\$ 158,024.00
18	Upper layer geotextile fabric	SF	210,699	\$0.30	\$ 63,210.00
19	Lower layer geotextile fabric	SY	210,699	\$0.30	\$ 63,210.00
20	3-inch Shotcrete liner	SY	23411	\$28.89	\$ 676,344.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	4090	\$5.95	\$ 24,336.00
23	Safety Ladder	EA	9	\$2,300.00	\$ 20,700.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	2	\$20,000.00	\$ 40,000.00
	<b>Construction Subtotal</b>				<b>\$ 1,926,942.00</b>
	Contingency		10%		\$ 192,694.00
	<b>Total Direct Costs</b>				<b>\$ 2,119,636.00</b>
	Construction Management & Testing		8%		\$ 154,155.00
	GVWUA Administrative Overhead		2%		\$ 38,539.00
	Cultural Evaluation/Mitigation		0.5%		\$ 9,635.00
	Design		5%		\$ 96,347.00
	NEPA		3%		\$ 57,808.00
	<b>Total Indirect Costs</b>				<b>\$ 356,484.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,476,120.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	563
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$810,513.97
Local Funding Required	\$ 1,665,606.03



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 18

Start Sta 2086+00

At Natural Wash

End Sta 2127+50

At Leach Creek

Length 4,150

Estimated Perimeter (ft): 68.52

Canal Floor Width (ft): 28.7

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$112,300.00	\$ 112,300.00
2	Water for Dust Abatement	DAY	75	\$742.63	\$ 55,697.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8300	\$2.24	\$ 18,592.00
5	Excavate waste material	CY	9266	\$4.24	\$ 39,288.00
6	Haul and disposal of waste material	CY	9266	\$10.15	\$ 94,050.00
7	Excavate reusable material	CY	8140	\$8.49	\$ 69,109.00
8	Import fill material	CY	8140	\$34.07	\$ 277,330.00
9	Placement of fill material	CY	16280	\$5.73	\$ 93,284.00
10	Side slope compaction	DAY	35	\$1,472.40	\$ 51,534.00
11	Underdrain trench excavation	CY	348	\$13.54	\$ 4,712.00
12	Underdrain filter fabric	SF	31167	\$0.30	\$ 9,350.00
13	Underdrain perforated pipe	LF	4,150	\$8.54	\$ 35,441.00
14	Underdrain filter gravel	CY	348	\$48.80	\$ 16,982.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	2	\$9,600.00	\$ 19,200.00
17	30 mil PVC lining	SF	284,358	\$0.75	\$ 213,269.00
18	Upper layer geotextile fabric	SF	284,358	\$0.30	\$ 85,307.00
19	Lower layer geotextile fabric	SY	284,358	\$0.30	\$ 85,307.00
20	3-inch Shotcrete liner	SY	31595	\$28.89	\$ 912,780.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	5520	\$5.95	\$ 32,844.00
23	Safety Ladder	EA	12	\$2,300.00	\$ 27,600.00
24	Liner Transition to Structure (Type 1)	EA	3	\$5,000.00	\$ 15,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	2	\$20,000.00	\$ 40,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,358,976.00</b>
	Contingency		10%		\$ 235,898.00
	<b>Total Direct Costs</b>				<b>\$ 2,594,874.00</b>
	Construction Management & Testing		8%		\$ 188,718.00
	GVWUA Administrative Overhead		2%		\$ 47,180.00
	Cultural Evaluation/Mitigation		0.5%		\$ 11,795.00
	Design		5%		\$ 117,949.00
	NEPA		3%		\$ 70,769.00
	<b>Total Indirect Costs</b>				<b>\$ 436,411.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,031,285.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	760
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,094,121.87
Local Funding Required	\$ 1,937,163.13

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 19

Start Sta 2127+50

End Sta 2137+50

Length 1,000

At Leach Creek

End of High Priority

Estimated Perimeter (ft): 68.52

Canal Floor Width (ft): 28.7

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$31,300.00	\$ 31,300.00
2	Water for Dust Abatement	DAY	18	\$742.63	\$ 13,367.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	2000	\$2.24	\$ 4,480.00
5	Excavate waste material	CY	2233	\$4.24	\$ 9,468.00
6	Haul and disposal of waste material	CY	2233	\$10.15	\$ 22,665.00
7	Excavate reusable material	CY	1960	\$8.49	\$ 16,640.00
8	Import fill material	CY	2840	\$34.07	\$ 96,759.00
9	Placement of fill material	CY	4800	\$5.73	\$ 27,504.00
10	Side slope compaction	DAY	8	\$1,472.40	\$ 11,779.00
11	Underdrain trench excavation	CY	84	\$13.54	\$ 1,137.00
12	Underdrain filter fabric	SF	7510	\$0.30	\$ 2,253.00
13	Underdrain perforated pipe	LF	1,000	\$8.54	\$ 8,540.00
14	Underdrain filter gravel	CY	84	\$48.80	\$ 4,099.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	68,520	\$0.75	\$ 51,390.00
18	Upper layer geotextile fabric	SF	68,520	\$0.30	\$ 20,556.00
19	Lower layer geotextile fabric	SY	68,520	\$0.30	\$ 20,556.00
20	3-inch Shotcrete liner	SY	7613	\$28.89	\$ 219,940.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	1330	\$5.95	\$ 7,914.00
23	Safety Ladder	EA	3	\$2,300.00	\$ 6,900.00
24	Liner Transition to Structure (Type 1)	EA	0	\$5,000.00	\$ -
25	Liner Transition to Structure (Type2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 656,847.00</b>
	Contingency		10%		\$ 65,685.00
	<b>Total Direct Costs</b>				<b>\$ 722,532.00</b>
	Construction Management & Testing		8%		\$ 52,548.00
	GVWUA Administrative Overhead		2%		\$ 13,137.00
	Cultural Evaluation/Mitigation		0.5%		\$ 3,284.00
	Design		5%		\$ 32,842.00
	NEPA		3%		\$ 19,705.00
	<b>Total Indirect Costs</b>				<b>\$ 121,516.00</b>
	<b>Total Project Costs</b>				<b>\$ 844,048.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	183
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$263,453.03
Local Funding Required	\$ 580,594.97

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 20

Start Sta 2137+50

Start of Medium Priority

End Sta 2184+00

Mid-point of Medium Priority

Length 4,650

Estimated Perimeter (ft): 79.87

Canal Floor Width (ft): 40.24

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$147,000.00	\$ 147,000.00
2	Water for Dust Abatement	DAY	84	\$742.63	\$ 62,381.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9300	\$2.24	\$ 20,832.00
5	Excavate waste material	CY	14558	\$4.24	\$ 61,726.00
6	Haul and disposal of waste material	CY	14558	\$10.15	\$ 147,764.00
7	Excavate reusable material	CY	9120	\$8.49	\$ 77,429.00
8	Import fill material	CY	13210	\$34.07	\$ 450,065.00
9	Placement of fill material	CY	22330	\$5.73	\$ 127,951.00
10	Side slope compaction	DAY	39	\$1,472.40	\$ 57,424.00
11	Underdrain trench excavation	CY	390	\$13.54	\$ 5,281.00
12	Underdrain filter fabric	SF	34922	\$0.30	\$ 10,477.00
13	Underdrain perforated pipe	LF	4,650	\$8.54	\$ 39,711.00
14	Underdrain filter gravel	CY	390	\$48.80	\$ 19,032.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	3	\$9,600.00	\$ 28,800.00
17	30 mil PVC lining	SF	371,396	\$0.75	\$ 278,547.00
18	Upper layer geotextile fabric	SF	371,396	\$0.30	\$ 111,419.00
19	Lower layer geotextile fabric	SY	371,396	\$0.30	\$ 111,419.00
20	3-inch Shotcrete liner	SY	41266	\$28.89	\$ 1,192,175.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	6185	\$5.95	\$ 36,801.00
23	Safety Ladder	EA	13	\$2,300.00	\$ 29,900.00
24	Liner Transition to Structure (Type 1)	EA	0	\$5,000.00	\$ -
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culverts Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 3,086,134.00</b>
	Contingency		10%		\$ 308,613.00
	<b>Total Direct Costs</b>				<b>\$ 3,394,747.00</b>
	Construction Management & Testing		8%		\$ 246,891.00
	GVWUA Administrative Overhead		2%		\$ 61,723.00
	Cultural Evaluation/Mitigation		0.5%		\$ 15,431.00
	Design		5%		\$ 154,307.00
	NEPA		3%		\$ 92,584.00
	<b>Total Indirect Costs</b>				<b>\$ 570,936.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,965,683.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	852
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,226,568.20
Local Funding Required	\$ 2,739,114.80



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 21

Start Sta 2184+00

Mid-point of Medium Priority

End Sta 2230+50

End of Medium Priority

Length 4,650

Estimated Perimeter (ft): 92.6

Canal Floor Width (ft): 48

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$162,200.00	\$ 162,200.00
2	Water for Dust Abatement	DAY	84	\$742.63	\$ 62,381.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9300	\$2.24	\$ 20,832.00
5	Excavate waste material	CY	17365	\$4.24	\$ 73,628.00
6	Haul and disposal of waste material	CY	17365	\$10.15	\$ 176,255.00
7	Excavate reusable material	CY	9120	\$8.49	\$ 77,429.00
8	Import fill material	CY	13210	\$34.07	\$ 450,065.00
9	Placement of fill material	CY	22330	\$5.73	\$ 127,951.00
10	Side slope compaction	DAY	39	\$1,472.40	\$ 57,424.00
11	Underdrain trench excavation	CY	390	\$13.54	\$ 5,281.00
12	Underdrain filter fabric	SF	34922	\$0.30	\$ 10,477.00
13	Underdrain perforated pipe	LF	4,650	\$8.54	\$ 39,711.00
14	Underdrain filter gravel	CY	390	\$48.80	\$ 19,032.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	4	\$9,600.00	\$ 38,400.00
17	30 mil PVC lining	SF	430,590	\$0.75	\$ 322,943.00
18	Upper layer geotextile fabric	SF	430,590	\$0.30	\$ 129,177.00
19	Lower layer geotextile fabric	SY	430,590	\$0.30	\$ 129,177.00
20	3-inch Shotcrete liner	SY	47843	\$28.89	\$ 1,382,184.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	6185	\$5.95	\$ 36,801.00
23	Safety Ladder	EA	13	\$2,300.00	\$ 29,900.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 3,406,248.00</b>
	Contingency		10%		\$ 340,625.00
	<b>Total Direct Costs</b>				<b>\$ 3,746,873.00</b>
	Construction Management & Testing		8%		\$ 272,500.00
	GVWUA Administrative Overhead		2%		\$ 68,125.00
	Cultural Evaluation/Mitigation		0.5%		\$ 17,031.00
	Design		5%		\$ 170,312.00
	NEPA		3%		\$ 102,187.00
	<b>Total Indirect Costs</b>				<b>\$ 630,155.00</b>
	<b>Total Project Costs</b>				<b>\$ 4,377,028.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	852
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,226,568.20
Local Funding Required	\$ 3,150,459.80

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 22

Start Sta 2230+50

End Sta 2275+00

Length 4,450

Start of Low Priority

Above Check Structure

Estimated Perimeter (ft): 79.3

Canal Floor Width (ft): 43

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$144,800.00	\$ 144,800.00
2	Water for Dust Abatement	DAY	81	\$742.63	\$ 60,153.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8900	\$2.24	\$ 19,936.00
5	Excavate waste material	CY	14887	\$4.24	\$ 63,121.00
6	Haul and disposal of waste material	CY	14887	\$10.15	\$ 151,103.00
7	Excavate reusable material	CY	8730	\$8.49	\$ 74,118.00
8	Import fill material	CY	12640	\$34.07	\$ 430,645.00
9	Placement of fill material	CY	21370	\$5.73	\$ 122,450.00
10	Side slope compaction	DAY	37	\$1,472.40	\$ 54,479.00
11	Underdrain trench excavation	CY	373	\$13.54	\$ 5,050.00
12	Underdrain filter fabric	SF	33420	\$0.30	\$ 10,026.00
13	Underdrain perforated pipe	LF	4,450	\$8.54	\$ 38,003.00
14	Underdrain filter gravel	CY	373	\$48.80	\$ 18,202.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	3	\$9,600.00	\$ 28,800.00
17	30 mil PVC lining	SF	352,885	\$0.75	\$ 264,664.00
18	Upper layer geotextile fabric	SF	352,885	\$0.30	\$ 105,866.00
19	Lower layer geotextile fabric	SY	352,885	\$0.30	\$ 105,866.00
20	3-inch Shotcrete liner	SY	39209	\$28.89	\$ 1,132,748.00
21	Irrigation crossing	EA	1	\$16,250.00	\$ 16,250.00
22	Gravel canal road surface	SY	5919	\$5.95	\$ 35,218.00
23	Safety Ladder	EA	13	\$2,300.00	\$ 29,900.00
24	Liner Transition to Structure (Type 1)	EA	4	\$5,000.00	\$ 20,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossing at Washes	EA	3	\$20,000.00	\$ 60,000.00
	<b>Construction Subtotal</b>				<b>\$ 3,041,398.00</b>
	Contingency		10%		\$ 304,140.00
	<b>Total Direct Costs</b>				<b>\$ 3,345,538.00</b>
	Construction Management & Testing		8%		\$ 243,312.00
	GVWUA Administrative Overhead		2%		\$ 60,828.00
	Cultural Evaluation/Mitigation		0.5%		\$ 15,207.00
	Design		5%		\$ 152,070.00
	NEPA		3%		\$ 91,242.00
	<b>Total Indirect Costs</b>				<b>\$ 562,659.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,908,197.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	815
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,173,301.74
Local Funding Required	\$ 2,734,895.26

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 23

Start Sta 2276+00

End Sta 2283+00

Length 700

Below Check Structure

Above Pritchard Wash

Estimated Perimeter (ft): 79.3

Canal Floor Width (ft): 43

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$24,400.00	\$ 24,400.00
2	Water for Dust Abatement	DAY	13	\$742.63	\$ 9,654.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	1400	\$2.24	\$ 3,136.00
5	Excavate waste material	CY	2342	\$4.24	\$ 9,930.00
6	Haul and disposal of waste material	CY	2342	\$10.15	\$ 23,771.00
7	Excavate reusable material	CY	1380	\$8.49	\$ 11,716.00
8	Import fill material	CY	1990	\$34.07	\$ 67,799.00
9	Placement of fill material	CY	3370	\$5.73	\$ 19,310.00
10	Side slope compaction	DAY	6	\$1,472.40	\$ 8,834.00
11	Underdrain trench excavation	CY	59	\$13.54	\$ 799.00
12	Underdrain filter fabric	SF	5257	\$0.30	\$ 1,577.00
13	Underdrain perforated pipe	LF	700	\$8.54	\$ 5,978.00
14	Underdrain filter gravel	CY	59	\$48.80	\$ 2,879.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	55,510	\$0.75	\$ 41,633.00
18	Upper layer geotextile fabric	SF	55,510	\$0.30	\$ 16,653.00
19	Lower layer geotextile fabric	SY	55,510	\$0.30	\$ 16,653.00
20	3-inch Shotcrete liner	SY	6168	\$28.89	\$ 178,194.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	931	\$5.95	\$ 5,539.00
23	Safety Ladder	EA	2	\$2,300.00	\$ 4,600.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culverts Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 513,055.00</b>
	Contingency		10%		\$ 51,306.00
	<b>Total Direct Costs</b>				<b>\$ 564,361.00</b>
	Construction Management & Testing		8%		\$ 41,044.00
	GVWUA Administrative Overhead		2%		\$ 10,261.00
	Cultural Evaluation/Mitigation		0.5%		\$ 2,565.00
	Design		5%		\$ 25,653.00
	NEPA		3%		\$ 15,392.00
	<b>Total Indirect Costs</b>				<b>\$ 94,915.00</b>
	<b>Total Project Costs</b>				<b>\$ 659,276.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	128
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$184,273.16
Local Funding Required	\$ 475,002.84



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 24

Start Sta 2283+00

End Sta 2328+00

Length 4,500

Below Pritchard Wash

Third-Point to Next Check

Estimated Perimeter (ft): 60.76

Canal Floor Width (ft): 25.8

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$118,900.00	\$ 118,900.00
2	Water for Dust Abatement	DAY	81	\$742.63	\$ 60,153.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9000	\$2.24	\$ 20,160.00
5	Excavate waste material	CY	9033	\$4.24	\$ 38,300.00
6	Haul and disposal of waste material	CY	9033	\$10.15	\$ 91,685.00
7	Excavate reusable material	CY	8820	\$8.49	\$ 74,882.00
8	Import fill material	CY	12780	\$34.07	\$ 435,415.00
9	Placement of fill material	CY	21600	\$5.73	\$ 123,768.00
10	Side slope compaction	DAY	38	\$1,472.40	\$ 55,951.00
11	Underdrain trench excavation	CY	378	\$13.54	\$ 5,118.00
12	Underdrain filter fabric	SF	33795	\$0.30	\$ 10,139.00
13	Underdrain perforated pipe	LF	4,500	\$8.54	\$ 38,430.00
14	Underdrain filter gravel	CY	378	\$48.80	\$ 18,446.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	2	\$9,600.00	\$ 19,200.00
17	30 mil PVC lining	SF	273,420	\$0.75	\$ 205,065.00
18	Upper layer geotextile fabric	SF	273,420	\$0.30	\$ 82,026.00
19	Lower layer geotextile fabric	SY	273,420	\$0.30	\$ 82,026.00
20	3-inch Shotcrete liner	SY	30380	\$28.89	\$ 877,678.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	5985	\$5.95	\$ 35,611.00
23	Safety Ladder	EA	13	\$2,300.00	\$ 29,900.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,497,853.00</b>
	Contingency		10%		\$ 249,785.00
	<b>Total Direct Costs</b>				<b>\$ 2,747,638.00</b>
	Construction Management & Testing		8%		\$ 199,828.00
	GVWUA Administrative Overhead		2%		\$ 49,957.00
	Cultural Evaluation/Mitigation		0.5%		\$ 12,489.00
	Design		5%		\$ 124,893.00
	NEPA		3%		\$ 74,936.00
	<b>Total Indirect Costs</b>				<b>\$ 462,103.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,209,741.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	824
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,186,258.45
Local Funding Required	\$ 2,023,482.55

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 25

Start Sta 2328+00

End Sta 2373+00

Length 4,500

Third-Point to Next Check

Two-Third Point to Next Check

Estimated Perimeter (ft): 60.76

Canal Floor Width (ft): 25.8

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$118,200.00	\$ 118,200.00
2	Water for Dust Abatement	DAY	81	\$742.63	\$ 60,153.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9000	\$2.24	\$ 20,160.00
5	Excavate waste material	CY	9033	\$4.24	\$ 38,300.00
6	Haul and disposal of waste material	CY	9033	\$10.15	\$ 91,685.00
7	Excavate reusable material	CY	8820	\$8.49	\$ 74,882.00
8	Import fill material	CY	12780	\$34.07	\$ 435,415.00
9	Placement of fill material	CY	21600	\$5.73	\$ 123,768.00
10	Side slope compaction	DAY	38	\$1,472.40	\$ 55,951.00
11	Underdrain trench excavation	CY	378	\$13.54	\$ 5,118.00
12	Underdrain filter fabric	SF	33795	\$0.30	\$ 10,139.00
13	Underdrain perforated pipe	LF	4,500	\$8.54	\$ 38,430.00
14	Underdrain filter gravel	CY	378	\$48.80	\$ 18,446.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	0	\$9,600.00	\$ -
17	30 mil PVC lining	SF	273,420	\$0.75	\$ 205,065.00
18	Upper layer geotextile fabric	SF	273,420	\$0.30	\$ 82,026.00
19	Lower layer geotextile fabric	SY	273,420	\$0.30	\$ 82,026.00
20	3-inch Shotcrete liner	SY	30380	\$28.89	\$ 877,678.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	5985	\$5.95	\$ 35,611.00
23	Safety Ladder	EA	13	\$2,300.00	\$ 29,900.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,482,953.00</b>
	Contingency		10%		\$ 248,295.00
	<b>Total Direct Costs</b>				<b>\$ 2,731,248.00</b>
	Construction Management & Testing		8%		\$ 198,636.00
	GVWUA Administrative Overhead		2%		\$ 49,659.00
	Cultural Evaluation/Mitigation		0.5%		\$ 12,415.00
	Design		5%		\$ 124,148.00
	NEPA		3%		\$ 74,489.00
	<b>Total Indirect Costs</b>				<b>\$ 459,347.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,190,595.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	824
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,186,258.45
Local Funding Required	\$ 2,004,336.55

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 26

Start Sta 2373+00

End Sta 2419+25

Length 4,625

Two-Third Point to Next Check

Above Check Structure

Estimated Perimeter (ft): 59.37

Canal Floor Width (ft): 24.4

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$122,700.00	\$ 122,700.00
2	Water for Dust Abatement	DAY	84	\$742.63	\$ 62,381.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9250	\$2.24	\$ 20,720.00
5	Excavate waste material	CY	8780	\$4.24	\$ 37,227.00
6	Haul and disposal of waste material	CY	8780	\$10.15	\$ 89,117.00
7	Excavate reusable material	CY	9070	\$8.49	\$ 77,004.00
8	Import fill material	CY	13140	\$34.07	\$ 447,680.00
9	Placement of fill material	CY	22210	\$5.73	\$ 127,263.00
10	Side slope compaction	DAY	39	\$1,472.40	\$ 57,424.00
11	Underdrain trench excavation	CY	388	\$13.54	\$ 5,254.00
12	Underdrain filter fabric	SF	34734	\$0.30	\$ 10,420.00
13	Underdrain perforated pipe	LF	4,625	\$8.54	\$ 39,498.00
14	Underdrain filter gravel	CY	388	\$48.80	\$ 18,934.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	7	\$9,600.00	\$ 67,200.00
17	30 mil PVC lining	SF	274,586	\$0.75	\$ 205,940.00
18	Upper layer geotextile fabric	SF	274,586	\$0.30	\$ 82,376.00
19	Lower layer geotextile fabric	SY	274,586	\$0.30	\$ 82,376.00
20	3-inch Shotcrete liner	SY	30510	\$28.89	\$ 881,434.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	6151	\$5.95	\$ 36,598.00
23	Safety Ladder	EA	13	\$2,300.00	\$ 29,900.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,576,446.00</b>
	Contingency		10%		\$ 257,645.00
	<b>Total Direct Costs</b>				<b>\$ 2,834,091.00</b>
	Construction Management & Testing		8%		\$ 206,116.00
	GVWUA Administrative Overhead		2%		\$ 51,529.00
	Cultural Evaluation/Mitigation		0.5%		\$ 12,882.00
	Design		5%		\$ 128,822.00
	NEPA		3%		\$ 77,293.00
	<b>Total Indirect Costs</b>				<b>\$ 476,642.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,310,733.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	847
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,219,370.03
Local Funding Required	\$ 2,091,362.97



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 27

Start Sta 2420+25

End Sta 2469+00

Length 4,875

Below Check Structure

End of Low Priority

Estimated Perimeter (ft): 58.04

Canal Floor Width (ft): 23.1

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$126,700.00	\$ 126,700.00
2	Water for Dust Abatement	DAY	88	\$742.63	\$ 65,351.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9750	\$2.24	\$ 21,840.00
5	Excavate waste material	CY	8761	\$4.24	\$ 37,147.00
6	Haul and disposal of waste material	CY	8761	\$10.15	\$ 88,924.00
7	Excavate reusable material	CY	9560	\$8.49	\$ 81,164.00
8	Import fill material	CY	13850	\$34.07	\$ 471,870.00
9	Placement of fill material	CY	23410	\$5.73	\$ 134,139.00
10	Side slope compaction	DAY	41	\$1,472.40	\$ 60,368.00
11	Underdrain trench excavation	CY	409	\$13.54	\$ 5,538.00
12	Underdrain filter fabric	SF	36611	\$0.30	\$ 10,983.00
13	Underdrain perforated pipe	LF	4,875	\$8.54	\$ 41,633.00
14	Underdrain filter gravel	CY	409	\$48.80	\$ 19,959.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	2	\$9,600.00	\$ 19,200.00
17	30 mil PVC lining	SF	282,945	\$0.75	\$ 212,209.00
18	Upper layer geotextile fabric	SF	282,945	\$0.30	\$ 84,884.00
19	Lower layer geotextile fabric	SY	282,945	\$0.30	\$ 84,884.00
20	3-inch Shotcrete liner	SY	31438	\$28.89	\$ 908,244.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	6484	\$5.95	\$ 38,580.00
23	Safety Ladder	EA	14	\$2,300.00	\$ 32,200.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	3	\$20,000.00	\$ 60,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,660,817.00</b>
	Contingency		10%		\$ 266,082.00
	<b>Total Direct Costs</b>				<b>\$ 2,926,899.00</b>
	Construction Management & Testing		8%		\$ 212,865.00
	GVWUA Administrative Overhead		2%		\$ 53,216.00
	Cultural Evaluation/Mitigation		0.5%		\$ 13,304.00
	Design		5%		\$ 133,041.00
	NEPA		3%		\$ 79,825.00
	<b>Total Indirect Costs</b>				<b>\$ 492,251.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,419,150.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	893
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,285,593.20
Local Funding Required	\$ 2,133,556.80

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 28

Start Sta 2469+00

End Sta 2516+25

Length 4,725

Start of Medium Priority

Mid-point of Medium Priority

Estimated Perimeter (ft): 62.25

Canal Floor Width (ft): 21.24

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$125,600.00	\$ 125,600.00
2	Water for Dust Abatement	DAY	86	\$742.63	\$ 63,866.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9450	\$2.24	\$ 21,168.00
5	Excavate waste material	CY	7808	\$4.24	\$ 33,106.00
6	Haul and disposal of waste material	CY	7808	\$10.15	\$ 79,251.00
7	Excavate reusable material	CY	9270	\$8.49	\$ 78,702.00
8	Import fill material	CY	13420	\$34.07	\$ 457,219.00
9	Placement of fill material	CY	22690	\$5.73	\$ 130,014.00
10	Side slope compaction	DAY	40	\$1,472.40	\$ 58,896.00
11	Underdrain trench excavation	CY	396	\$13.54	\$ 5,362.00
12	Underdrain filter fabric	SF	35485	\$0.30	\$ 10,646.00
13	Underdrain perforated pipe	LF	4,725	\$8.54	\$ 40,352.00
14	Underdrain filter gravel	CY	396	\$48.80	\$ 19,325.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	3	\$9,600.00	\$ 28,800.00
17	30 mil PVC lining	SF	294,131	\$0.75	\$ 220,598.00
18	Upper layer geotextile fabric	SF	294,131	\$0.30	\$ 88,239.00
19	Lower layer geotextile fabric	SY	294,131	\$0.30	\$ 88,239.00
20	3-inch Shotcrete liner	SY	32681	\$28.89	\$ 944,154.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	6284	\$5.95	\$ 37,390.00
23	Safety Ladder	EA	14	\$2,300.00	\$ 32,200.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,638,127.00</b>
	Contingency		10%		\$ 263,813.00
	<b>Total Direct Costs</b>				<b>\$ 2,901,940.00</b>
	Construction Management & Testing		8%		\$ 211,050.00
	GVWUA Administrative Overhead		2%		\$ 52,763.00
	Cultural Evaluation/Mitigation		0.5%		\$ 13,191.00
	Design		5%		\$ 131,906.00
	NEPA		3%		\$ 79,144.00
	<b>Total Indirect Costs</b>				<b>\$ 488,054.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,389,994.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	866
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,246,723.08
Local Funding Required	\$ 2,143,270.92

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 29

Start Sta 2516+25

End Sta 2563+50

Length 4,725

Mid-point of Medium Priority

Above Adobe Creek

Estimated Perimeter (ft): 65.29

Canal Floor Width (ft): 19.9

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$127,600.00	\$ 127,600.00
2	Water for Dust Abatement	DAY	86	\$742.63	\$ 63,866.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	9450	\$2.24	\$ 21,168.00
5	Excavate waste material	CY	7315	\$4.24	\$ 31,016.00
6	Haul and disposal of waste material	CY	7315	\$10.15	\$ 74,247.00
7	Excavate reusable material	CY	9270	\$8.49	\$ 78,702.00
8	Import fill material	CY	13420	\$34.07	\$ 457,219.00
9	Placement of fill material	CY	22690	\$5.73	\$ 130,014.00
10	Side slope compaction	DAY	40	\$1,472.40	\$ 58,896.00
11	Underdrain trench excavation	CY	396	\$13.54	\$ 5,362.00
12	Underdrain filter fabric	SF	35485	\$0.30	\$ 10,646.00
13	Underdrain perforated pipe	LF	4,725	\$8.54	\$ 40,352.00
14	Underdrain filter gravel	CY	396	\$48.80	\$ 19,325.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	308,495	\$0.75	\$ 231,371.00
18	Upper layer geotextile fabric	SF	308,495	\$0.30	\$ 92,549.00
19	Lower layer geotextile fabric	SY	308,495	\$0.30	\$ 92,549.00
20	3-inch Shotcrete liner	SY	34277	\$28.89	\$ 990,263.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	6284	\$5.95	\$ 37,390.00
23	Safety Ladder	EA	14	\$2,300.00	\$ 32,200.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,679,335.00</b>
	Contingency		10%		\$ 267,934.00
	<b>Total Direct Costs</b>				<b>\$ 2,947,269.00</b>
	Construction Management & Testing		8%		\$ 214,347.00
	GVWUA Administrative Overhead		2%		\$ 53,587.00
	Cultural Evaluation/Mitigation		0.5%		\$ 13,397.00
	Design		5%		\$ 133,967.00
	NEPA		3%		\$ 80,380.00
	<b>Total Indirect Costs</b>				<b>\$ 495,678.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,442,947.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	866
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,246,723.08
Local Funding Required	\$ 2,196,223.92



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 30

Start Sta 2565+50

End Sta 2585+25

Length 1,975

Below Adobe Creek

Above Check Structure

Estimated Perimeter (ft): 65.29

Canal Floor Width (ft): 19.9

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$55,100.00	\$ 55,100.00
2	Water for Dust Abatement	DAY	36	\$742.63	\$ 26,735.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	3950	\$2.24	\$ 8,848.00
5	Excavate waste material	CY	3058	\$4.24	\$ 12,966.00
6	Haul and disposal of waste material	CY	3058	\$10.15	\$ 31,039.00
7	Excavate reusable material	CY	3880	\$8.49	\$ 32,941.00
8	Import fill material	CY	5610	\$34.07	\$ 191,133.00
9	Placement of fill material	CY	9490	\$5.73	\$ 54,378.00
10	Side slope compaction	DAY	17	\$1,472.40	\$ 25,031.00
11	Underdrain trench excavation	CY	166	\$13.54	\$ 2,248.00
12	Underdrain filter fabric	SF	14832	\$0.30	\$ 4,450.00
13	Underdrain perforated pipe	LF	1,975	\$8.54	\$ 16,867.00
14	Underdrain filter gravel	CY	166	\$48.80	\$ 8,101.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	128,948	\$0.75	\$ 96,711.00
18	Upper layer geotextile fabric	SF	128,948	\$0.30	\$ 38,684.00
19	Lower layer geotextile fabric	SY	128,948	\$0.30	\$ 38,684.00
20	3-inch Shotcrete liner	SY	14328	\$28.89	\$ 413,936.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	2627	\$5.95	\$ 15,631.00
23	Safety Ladder	EA	6	\$2,300.00	\$ 13,800.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 1,156,883.00</b>
	Contingency		10%		\$ 115,688.00
	<b>Total Direct Costs</b>				<b>\$ 1,272,571.00</b>
	Construction Management & Testing		8%		\$ 92,551.00
	GVWUA Administrative Overhead		2%		\$ 23,138.00
	Cultural Evaluation/Mitigation		0.5%		\$ 5,784.00
	Design		5%		\$ 57,844.00
	NEPA		3%		\$ 34,706.00
	<b>Total Indirect Costs</b>				<b>\$ 214,023.00</b>
	<b>Total Project Costs</b>				<b>\$ 1,486,594.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	362
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$521,147.52
Local Funding Required	\$ 965,446.48

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 31

Start Sta 2586+25

End Sta 2628+25

Length 4,200

Below Check Structure

Mid-point to Little Salt Wash

Estimated Perimeter (ft): 65.29

Canal Floor Width (ft): 19.9

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$114,800.00	\$ 114,800.00
2	Water for Dust Abatement	DAY	76	\$742.63	\$ 56,440.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8400	\$2.24	\$ 18,816.00
5	Excavate waste material	CY	6503	\$4.24	\$ 27,573.00
6	Haul and disposal of waste material	CY	6503	\$10.15	\$ 66,005.00
7	Excavate reusable material	CY	8240	\$8.49	\$ 69,958.00
8	Import fill material	CY	11930	\$34.07	\$ 406,455.00
9	Placement of fill material	CY	20170	\$5.73	\$ 115,574.00
10	Side slope compaction	DAY	35	\$1,472.40	\$ 51,534.00
11	Underdrain trench excavation	CY	352	\$13.54	\$ 4,766.00
12	Underdrain filter fabric	SF	31542	\$0.30	\$ 9,463.00
13	Underdrain perforated pipe	LF	4,200	\$8.54	\$ 35,868.00
14	Underdrain filter gravel	CY	352	\$48.80	\$ 17,178.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	274,218	\$0.75	\$ 205,664.00
18	Upper layer geotextile fabric	SF	274,218	\$0.30	\$ 82,265.00
19	Lower layer geotextile fabric	SY	274,218	\$0.30	\$ 82,265.00
20	3-inch Shotcrete liner	SY	30469	\$28.89	\$ 880,249.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	5586	\$5.95	\$ 33,237.00
23	Safety Ladder	EA	12	\$2,300.00	\$ 27,600.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	2	\$20,000.00	\$ 40,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,410,310.00</b>
	Contingency		10%		\$ 241,031.00
	<b>Total Direct Costs</b>				<b>\$ 2,651,341.00</b>
	Construction Management & Testing		8%		\$ 192,825.00
	GVWUA Administrative Overhead		2%		\$ 48,206.00
	Cultural Evaluation/Mitigation		0.5%		\$ 12,052.00
	Design		5%		\$ 120,516.00
	NEPA		3%		\$ 72,309.00
	<b>Total Indirect Costs</b>				<b>\$ 445,908.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,097,249.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	769
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,107,078.58
Local Funding Required	\$ 1,990,170.42

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 32

Start Sta 2628+25

Mid-point to Little Salt Wash

End Sta 2670+25

Above Little Salt Wash

Length 4,200

Estimated Perimeter (ft): 57.23

Canal Floor Width (ft): 38.2

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$109,900.00	\$ 109,900.00
2	Water for Dust Abatement	DAY	76	\$742.63	\$ 56,440.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8400	\$2.24	\$ 18,816.00
5	Excavate waste material	CY	12482	\$4.24	\$ 52,924.00
6	Haul and disposal of waste material	CY	12482	\$10.15	\$ 126,692.00
7	Excavate reusable material	CY	8240	\$8.49	\$ 69,958.00
8	Import fill material	CY	11930	\$34.07	\$ 406,455.00
9	Placement of fill material	CY	20170	\$5.73	\$ 115,574.00
10	Side slope compaction	DAY	35	\$1,472.40	\$ 51,534.00
11	Underdrain trench excavation	CY	352	\$13.54	\$ 4,766.00
12	Underdrain filter fabric	SF	31542	\$0.30	\$ 9,463.00
13	Underdrain perforated pipe	LF	4,200	\$8.54	\$ 35,868.00
14	Underdrain filter gravel	CY	352	\$48.80	\$ 17,178.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	240,366	\$0.75	\$ 180,275.00
18	Upper layer geotextile fabric	SF	240,366	\$0.30	\$ 72,110.00
19	Lower layer geotextile fabric	SY	240,366	\$0.30	\$ 72,110.00
20	3-inch Shotcrete liner	SY	26707	\$28.89	\$ 771,565.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	5586	\$5.95	\$ 33,237.00
23	Safety Ladder	EA	12	\$2,300.00	\$ 27,600.00
24	Liner Transition to Structure (Type 1)	EA	3	\$5,000.00	\$ 15,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 2,307,065.00</b>
	Contingency		10%		\$ 230,707.00
	<b>Total Direct Costs</b>				<b>\$ 2,537,772.00</b>
	Construction Management & Testing		8%		\$ 184,565.00
	GVWUA Administrative Overhead		2%		\$ 46,141.00
	Cultural Evaluation/Mitigation		0.5%		\$ 11,535.00
	Design		5%		\$ 115,353.00
	NEPA		3%		\$ 69,212.00
	<b>Total Indirect Costs</b>				<b>\$ 426,806.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,964,578.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	769
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,107,078.58
Local Funding Required	\$ 1,857,499.42



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 33

Start Sta 2671+50

End Sta 2732+00

Length 6,050

Below Little Salt Wash

Above Check Structure

Estimated Perimeter (ft): 67.6

Canal Floor Width (ft): 31.7

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$172,500.00	\$ 172,500.00
2	Water for Dust Abatement	DAY	110	\$742.63	\$ 81,689.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	12100	\$2.24	\$ 27,104.00
5	Excavate waste material	CY	14921	\$4.24	\$ 63,265.00
6	Haul and disposal of waste material	CY	14921	\$10.15	\$ 151,448.00
7	Excavate reusable material	CY	11860	\$8.49	\$ 100,691.00
8	Import fill material	CY	17190	\$34.07	\$ 585,663.00
9	Placement of fill material	CY	29050	\$5.73	\$ 166,457.00
10	Side slope compaction	DAY	51	\$1,472.40	\$ 75,092.00
11	Underdrain trench excavation	CY	508	\$13.54	\$ 6,878.00
12	Underdrain filter fabric	SF	45436	\$0.30	\$ 13,631.00
13	Underdrain perforated pipe	LF	6,050	\$8.54	\$ 51,667.00
14	Underdrain filter gravel	CY	508	\$48.80	\$ 24,790.00
15	Connections of underdrain to GVDD system	EA	2	\$6,000.00	\$ 12,000.00
16	Turnouts	EA	6	\$9,600.00	\$ 57,600.00
17	30 mil PVC lining	SF	408,980	\$0.75	\$ 306,735.00
18	Upper layer geotextile fabric	SF	408,980	\$0.30	\$ 122,694.00
19	Lower layer geotextile fabric	SY	408,980	\$0.30	\$ 122,694.00
20	3-inch Shotcrete liner	SY	45442	\$28.89	\$ 1,312,819.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	8047	\$5.95	\$ 47,880.00
23	Safety Ladder	EA	17	\$2,300.00	\$ 39,100.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 3,622,397.00</b>
	Contingency		10%		\$ 362,240.00
	<b>Total Direct Costs</b>				<b>\$ 3,984,637.00</b>
	Construction Management & Testing		8%		\$ 289,792.00
	GVWUA Administrative Overhead		2%		\$ 72,448.00
	Cultural Evaluation/Mitigation		0.5%		\$ 18,112.00
	Design		5%		\$ 181,120.00
	NEPA		3%		\$ 108,672.00
	<b>Total Indirect Costs</b>				<b>\$ 670,144.00</b>
	<b>Total Project Costs</b>				<b>\$ 4,654,781.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	1108
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,595,114.52
Local Funding Required	\$ 3,059,666.48

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 34

Start Sta 2733+00

End Sta 2787+00

Length 5,400

Below Check Structure

Mid-point to Next Check (East Branch)

Estimated Perimeter (ft): 63.26

Canal Floor Width (ft): 27.5

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$147,200.00	\$ 147,200.00
2	Water for Dust Abatement	DAY	98	\$742.63	\$ 72,778.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	10800	\$2.24	\$ 24,192.00
5	Excavate waste material	CY	11553	\$4.24	\$ 48,985.00
6	Haul and disposal of waste material	CY	11553	\$10.15	\$ 117,263.00
7	Excavate reusable material	CY	10590	\$8.49	\$ 89,909.00
8	Import fill material	CY	15340	\$34.07	\$ 522,634.00
9	Placement of fill material	CY	25930	\$5.73	\$ 148,579.00
10	Side slope compaction	DAY	45	\$1,472.40	\$ 66,258.00
11	Underdrain trench excavation	CY	453	\$13.54	\$ 6,134.00
12	Underdrain filter fabric	SF	40554	\$0.30	\$ 12,166.00
13	Underdrain perforated pipe	LF	5,400	\$8.54	\$ 46,116.00
14	Underdrain filter gravel	CY	453	\$48.80	\$ 22,106.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	6	\$9,600.00	\$ 57,600.00
17	30 mil PVC lining	SF	341,604	\$0.75	\$ 256,203.00
18	Upper layer geotextile fabric	SF	341,604	\$0.30	\$ 102,481.00
19	Lower layer geotextile fabric	SY	341,604	\$0.30	\$ 102,481.00
20	3-inch Shotcrete liner	SY	37956	\$28.89	\$ 1,096,549.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	7182	\$5.95	\$ 42,733.00
23	Safety Ladder	EA	15	\$2,300.00	\$ 34,500.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
				<b>\$0.00</b>	
	<b>Construction Subtotal</b>				<b>\$ 3,091,867.00</b>
	Contingency		10%		\$ 309,187.00
	<b>Total Direct Costs</b>				<b>\$ 3,401,054.00</b>
	Construction Management & Testing		8%		\$ 247,349.00
	GVWUA Administrative Overhead		2%		\$ 61,837.00
	Cultural Evaluation/Mitigation		0.5%		\$ 15,459.00
	Design		5%		\$ 154,593.00
	NEPA		3%		\$ 92,756.00
	<b>Total Indirect Costs</b>				<b>\$ 571,994.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,973,048.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	989
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,423,798.07
Local Funding Required	\$ 2,549,249.93

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 35

Start Sta 2787+00

End Sta 2841+75

Length 5,475

Mid-point to Next Check Structure

Above Check Structure (East Branch)

Estimated Perimeter (ft): 52.1

Canal Floor Width (ft): 16.6

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$130,600.00	\$ 130,600.00
2	Water for Dust Abatement	DAY	99	\$742.63	\$ 73,520.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	10950	\$2.24	\$ 24,528.00
5	Excavate waste material	CY	7071	\$4.24	\$ 29,981.00
6	Haul and disposal of waste material	CY	7071	\$10.15	\$ 71,771.00
7	Excavate reusable material	CY	10740	\$8.49	\$ 91,183.00
8	Import fill material	CY	15550	\$34.07	\$ 529,789.00
9	Placement of fill material	CY	26290	\$5.73	\$ 150,642.00
10	Side slope compaction	DAY	46	\$1,472.40	\$ 67,730.00
11	Underdrain trench excavation	CY	459	\$13.54	\$ 6,215.00
12	Underdrain filter fabric	SF	41117	\$0.30	\$ 12,335.00
13	Underdrain perforated pipe	LF	5,475	\$8.54	\$ 46,757.00
14	Underdrain filter gravel	CY	459	\$48.80	\$ 22,399.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	3	\$9,600.00	\$ 28,800.00
17	30 mil PVC lining	SF	285,248	\$0.75	\$ 213,936.00
18	Upper layer geotextile fabric	SF	285,248	\$0.30	\$ 85,574.00
19	Lower layer geotextile fabric	SY	285,248	\$0.30	\$ 85,574.00
20	3-inch Shotcrete liner	SY	31694	\$28.89	\$ 915,640.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	7282	\$5.95	\$ 43,328.00
23	Safety Ladder	EA	16	\$2,300.00	\$ 36,800.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,742,102.00</b>
	Contingency		10%		\$ 274,210.00
	<b>Total Direct Costs</b>				<b>\$ 3,016,312.00</b>
	Construction Management & Testing		8%		\$ 219,368.00
	GVWUA Administrative Overhead		2%		\$ 54,842.00
	Cultural Evaluation/Mitigation		0.5%		\$ 13,711.00
	Design		5%		\$ 137,105.00
	NEPA		3%		\$ 82,263.00
	<b>Total Indirect Costs</b>				<b>\$ 507,289.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,523,601.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	1003
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,443,952.95
Local Funding Required	\$ 2,079,648.05



GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 36

Start Sta 2845+00

End Sta 2887+75

Length 4,275

Below Check Structure (East Branch)

Third-Point to Big Wash Siphon

Estimated Perimeter (ft): 57.8

Canal Floor Width (ft): 22.5

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$110,800.00	\$ 110,800.00
2	Water for Dust Abatement	DAY	77	\$742.63	\$ 57,183.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8550	\$2.24	\$ 19,152.00
5	Excavate waste material	CY	7483	\$4.24	\$ 31,728.00
6	Haul and disposal of waste material	CY	7483	\$10.15	\$ 75,952.00
7	Excavate reusable material	CY	8380	\$8.49	\$ 71,146.00
8	Import fill material	CY	12150	\$34.07	\$ 413,951.00
9	Placement of fill material	CY	20530	\$5.73	\$ 117,637.00
10	Side slope compaction	DAY	36	\$1,472.40	\$ 53,006.00
11	Underdrain trench excavation	CY	359	\$13.54	\$ 4,861.00
12	Underdrain filter fabric	SF	32105	\$0.30	\$ 9,632.00
13	Underdrain perforated pipe	LF	4,275	\$8.54	\$ 36,509.00
14	Underdrain filter gravel	CY	359	\$48.80	\$ 17,519.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	3	\$9,600.00	\$ 28,800.00
17	30 mil PVC lining	SF	247,095	\$0.75	\$ 185,321.00
18	Upper layer geotextile fabric	SF	247,095	\$0.30	\$ 74,129.00
19	Lower layer geotextile fabric	SY	247,095	\$0.30	\$ 74,129.00
20	3-inch Shotcrete liner	SY	27455	\$28.89	\$ 793,175.00
21	Irrigation crossing	EA	1	\$16,250.00	\$ 16,250.00
22	Gravel canal road surface	SY	5686	\$5.95	\$ 33,832.00
23	Safety Ladder	EA	12	\$2,300.00	\$ 27,600.00
24	Liner Transition to Structure (Type 1)	EA	1	\$5,000.00	\$ 5,000.00
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,327,312.00</b>
	Contingency		10%		\$ 232,731.00
	<b>Total Direct Costs</b>				<b>\$ 2,560,043.00</b>
	Construction Management & Testing		8%		\$ 186,185.00
	GVWUA Administrative Overhead		2%		\$ 46,546.00
	Cultural Evaluation/Mitigation		0.5%		\$ 11,637.00
	Design		5%		\$ 116,366.00
	NEPA		3%		\$ 69,819.00
	<b>Total Indirect Costs</b>				<b>\$ 430,553.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,990,596.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	783
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,127,233.46
Local Funding Required	\$ 1,863,362.54

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 37

Start Sta 2887+75

End Sta 2930+50

Length 4,275

Third-Point to Big Salt Wash Siphon

Two-Third Point to Big Salt Wash

Estimated Perimeter (ft): 52.1

Canal Floor Width (ft): 27.7

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$104,500.00	\$ 104,500.00
2	Water for Dust Abatement	DAY	77	\$742.63	\$ 57,183.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8550	\$2.24	\$ 19,152.00
5	Excavate waste material	CY	9213	\$4.24	\$ 39,063.00
6	Haul and disposal of waste material	CY	9213	\$10.15	\$ 93,512.00
7	Excavate reusable material	CY	8380	\$8.49	\$ 71,146.00
8	Import fill material	CY	12150	\$34.07	\$ 413,951.00
9	Placement of fill material	CY	20530	\$5.73	\$ 117,637.00
10	Side slope compaction	DAY	36	\$1,472.40	\$ 53,006.00
11	Underdrain trench excavation	CY	359	\$13.54	\$ 4,861.00
12	Underdrain filter fabric	SF	32105	\$0.30	\$ 9,632.00
13	Underdrain perforated pipe	LF	4,275	\$8.54	\$ 36,509.00
14	Underdrain filter gravel	CY	359	\$48.80	\$ 17,519.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	1	\$9,600.00	\$ 9,600.00
17	30 mil PVC lining	SF	222,728	\$0.75	\$ 167,046.00
18	Upper layer geotextile fabric	SF	222,728	\$0.30	\$ 66,818.00
19	Lower layer geotextile fabric	SY	222,728	\$0.30	\$ 66,818.00
20	3-inch Shotcrete liner	SY	24748	\$28.89	\$ 714,970.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	5686	\$5.95	\$ 33,832.00
23	Safety Ladder	EA	12	\$2,300.00	\$ 27,600.00
24	Liner Transition to Structure (Type 1)	EA	0	\$5,000.00	\$ -
25	Liner Transition to Structure (Type 2)	EA	0	\$10,000.00	\$ -
26	Culvert Crossings at Washes	EA	1	\$20,000.00	\$ 20,000.00
	<b>Construction Subtotal</b>				<b>\$ 2,194,355.00</b>
	Contingency		10%		\$ 219,436.00
	<b>Total Direct Costs</b>				<b>\$ 2,413,791.00</b>
	Construction Management & Testing		8%		\$ 175,548.00
	GVWUA Administrative Overhead		2%		\$ 43,887.00
	Cultural Evaluation/Mitigation		0.5%		\$ 10,972.00
	Design		5%		\$ 109,718.00
	NEPA		3%		\$ 65,831.00
	<b>Total Indirect Costs</b>				<b>\$ 405,956.00</b>
	<b>Total Project Costs</b>				<b>\$ 2,819,747.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	783
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,127,233.46
Local Funding Required	\$ 1,692,513.54

GRAND VALLEY WATER USERS ASSOCIATION MASTER PLAN  
Engineer's Opinion of Probable Cost  
4/5/2017

Segment # 38

Start Sta 2930+50

End Sta 2973+25

Length 4,275

Two-Third Point to Big Salt Wash

Big Salt Wash Siphon

Estimated Perimeter (ft): 57.5

Canal Floor Width (ft): 28

Item	Description	Unit	Quantity	Unit Price	Total Price
1	Mobilization	LS	1	\$111,300.00	\$ 111,300.00
2	Water for Dust Abatement	DAY	77	\$742.63	\$ 57,183.00
3	Dewatering	LS	1	\$50,000.00	\$ 50,000.00
4	Erosion Control (silt fence)	LF	8550	\$2.24	\$ 19,152.00
5	Excavate waste material	CY	9313	\$4.24	\$ 39,487.00
6	Haul and disposal of waste material	CY	9313	\$10.15	\$ 94,527.00
7	Excavate reusable material	CY	8380	\$8.49	\$ 71,146.00
8	Import fill material	CY	12150	\$34.07	\$ 413,951.00
9	Placement of fill material	CY	20530	\$5.73	\$ 117,637.00
10	Side slope compaction	DAY	36	\$1,472.40	\$ 53,006.00
11	Underdrain trench excavation	CY	359	\$13.54	\$ 4,861.00
12	Underdrain filter fabric	SF	32105	\$0.30	\$ 9,632.00
13	Underdrain perforated pipe	LF	4,275	\$8.54	\$ 36,509.00
14	Underdrain filter gravel	CY	359	\$48.80	\$ 17,519.00
15	Connections of underdrain to GVDD system	EA	0	\$6,000.00	\$ -
16	Turnouts	EA	4	\$9,600.00	\$ 38,400.00
17	30 mil PVC lining	SF	245,813	\$0.75	\$ 184,360.00
18	Upper layer geotextile fabric	SF	245,813	\$0.30	\$ 73,744.00
19	Lower layer geotextile fabric	SY	245,813	\$0.30	\$ 73,744.00
20	3-inch Shotcrete liner	SY	27313	\$28.89	\$ 789,073.00
21	Irrigation crossing	EA	0	\$16,250.00	\$ -
22	Gravel canal road surface	SY	5686	\$5.95	\$ 33,832.00
23	Safety Ladder	EA	12	\$2,300.00	\$ 27,600.00
24	Liner Transition to Structure (Type 1)	EA	2	\$5,000.00	\$ 10,000.00
25	Liner Transition to Structure (Type 2)	EA	1	\$10,000.00	\$ 10,000.00
26	Culvert Crossings at Washes	EA	0	\$20,000.00	\$ -
	<b>Construction Subtotal</b>				<b>\$ 2,336,663.00</b>
	Contingency		10%		\$ 233,666.00
	<b>Total Direct Costs</b>				<b>\$ 2,570,329.00</b>
	Construction Management & Testing		8%		\$ 186,933.00
	GVWUA Administrative Overhead		2%		\$ 46,733.00
	Cultural Evaluation/Mitigation		0.5%		\$ 11,683.00
	Design		5%		\$ 116,833.00
	NEPA		3%		\$ 70,100.00
	<b>Total Indirect Costs</b>				<b>\$ 432,282.00</b>
	<b>Total Project Costs</b>				<b>\$ 3,002,611.00</b>

Desired Cost/Ton-year	\$60.00
Estimated Salinity - Tons/year	783
Amortization Rate	3.375%
Allowable Cost for Desired Ratio	\$1,127,233.46
Local Funding Required	\$ 1,875,377.54



## Appendix E // Undershot Inventory and Needs

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Approximate Station:	Canal Section:	Undershot Name	Brief Description	Size and Material	Last Replacement Date	Action Required:
1103+06.00	UL-4	US-1	Upstream of Tunnel 1	24" Vitrus Tile Pipe	Unknown	Project Required
1254+25.00	UL-7	US-2	Between Tunnels 2 & 3	Twin 52"W x 60"H Concrete Box Culverts	Sleeved in 2007. Wing Walls in 2007.	Routine Inspections Only
1346+75.30	UL-8	US-3	Upstream of Palisade Bypass Headgate	Twin 30" Vitrus Tile Pipes	Unknown	Project Required
1353+87.00	UL-8	US-4	Coal Mine Wash (Natural Wash)	24" Vitrus Tile Pipe	Unknown	Routine Inspections Only
1362+54.70	UL-8	US-5	Pryor Wash (Natural Wash)	60" x 60" Concrete Box Culvert	Unknown	Routine Inspections Only
1429+10.30	UL-10	GVDD-1	Gallantin Drain	6" Vitrus Tile Pipe	Unknown	Under GVDD Jurisdiction
1443+00.20	UL-10	GVDD-2	Farnsworth Drain	8" PVC	Replaced with UL-10 Canal Lining (2017)	Under GVDD Jurisdiction
1464+61.50	UL-11	GVDD-3	36 3/10 Rd Drain	12" PVC	2017	Under GVDD Jurisdiction
1477+04.80	UL-11	GVDD-4	West Freda Drain	12" PVC	Approx. 2012	Under GVDD Jurisdiction
1490+81.00	UL-11	GVDD-5	Botola Tile Drain	8" PVC	1995	Under GVDD Jurisdiction
1512+41.40	UL-11	GVDD-6	Russel Drain	8" NRCP	Unknown	Under GVDD Jurisdiction
1540+43.00	LIN-2	GVDD-7	Henchy Waste Drain	12" PVC	Replaced with Stage 2 Salinity Work	Under GVDD Jurisdiction
1552+21.80	LIN-2	GVDD-8	High Drain	8" or 10" NRCP	Replaced with Stage 2 Salinity Work	Under GVDD Jurisdiction
1577+24.90	LIN-2	GVDD-9	Wilson Drain	12" PVC	Replaced with Stage 2 Salinity Work	Under GVDD Jurisdiction
1585+59.10	LIN-2	GVDD-10	Whinery Drain	12" PVC	Replaced with Stage 2 Salinity Work	Under GVDD Jurisdiction
1595+79.20	LIN-2	US-6	Bosley Wash	60" RCP	Replaced with Stage 2 Salinity Work	Routine Inspections - Duties shared with GVDD
1624+31.70	LIN-2	GVDD-11	North Waterbridge Drain	36" RCP	Replaced with Stage 2 Salinity Work	Under GVDD Jurisdiction
1647+31.70	LIN-2	US-7	East Douglas Wash	Unknown	Replaced with Stage 2 Salinity Work	Routine Inspections Only
1679+85.70	LIN-2	GVDD-12	Sunking Drain	12" PVD w/ 6" PVC above	Replaced with Stage 2 Salinity Work	Under GVDD Jurisdiction
1714+58.70	LIN-2	US-8	Clifton Heights	24" PVC	Replaced with Stage 2 Salinity Work	Routine Inspections Only
1988+88.50	UL-15	US-9	Storm Drain (airport Detention)	Double Barrel 48" RCP	1986, Wing Wall and Pipe Repaired in 2006.	Routine Inspections Only
2019+90.50	UL-16	US-10	Natural Wash Horizon Drive Channel	42" RCP	2011	Routine Inspections Only
2056+12.50	UL-17	US-11	Tuscan 5 Sub, now Eagle Estates Sub	18" Vitrus Tile Pipe	Unknown	Project Required
2086+13.50	UL-17	US-12	Leach Creek East Feeder Natural Wash	60" x 2 RCP	2017	Routine Inspections Only
2098+42.50	UL-18	US-13	Abandoned 2013	18" Vitrus Tile Pipe	2011	No action required. Can be removed if desired.
2114+32.50	UL-18	US-14	Leach Creek Middle Feeder Natural Wash	42" RCP	2011	Routine Inspections Only
2127+57.50	UL-19	US-15	Leach Creek Natural Wash	60" x 3 Encased CMP	Unknown	Project Required
2151+98.80	UL-20	US-16	Cochran Wash "Behens"	36" x2 RCP	Recently Replaced	Routine Inspections Only
2240+14.80	UL-22	US-17	Natural Wash North Cochran 2012	36" RCP	2012 - After 2011 Breach	Routine Inspections Only

Approximate Station:	Canal Section:	Undershot Name	Brief Description	Size and Material	Last Replacement Date	Action Required:
2248+62.50	UL-22	US-18	Natural Wash Cochran Feeder	24" CMP	Unknown	Project Required
2270+85.50	UL-22	US-19	Abandoned 2013	Unknown	Unknown	No action required. Can be removed if desired.
2309+37.50	UL-24	US-20	Persigo Wash Feeder "Richardsons"	18" Vitrus Tile Pipe	Unknown	Routine Inspections Only
2353+90.30	UL-25	US-21	Persigo Wash East Feeder	Unknown - 24" Vitrus Tile Pipe?	Unknown	Routine Inspections Only
2393+80.30	UL-26	US-22	Persigo Wash Feeder	24" Vitrus Tile Pipe	Unknown	Routine Inspections Only
2446+37.00	UL-27	US-23	Hunter Wash Feeder "Rick's Drain"	36" CMP (?)	Unknown	Project Required
2460+05.10	UL-27	US-24	Hunter Wash Feeder	48" RCP	1999	Routine Inspections Only
2468+95.10	UL-27	US-25	Hunter Wash	Twin 5'x5' Concrete Box Culverts	Unknown	Routine Inspections Only
2488+95.10	UL-28	US-25-1/2	Natural Wash Hunter Wash Feeder	24" Vitrus Tile Pipe	Unknown	Routine Inspections Only
2523+33.10	UL-29	US-26	Adobe Creek Feeder off BLM	24" Vitrus Tile Culvert	Unknown	Routine Inspections Only
2592+35.10	UL-31	US-28	Adobe Wash Feeder	24" RCP	2006	Routine Inspections Only
2600+20.10	UL-31	US-29	Adobe Wash Feeder (Wells Drain) 2006	24" Vitrus Tile Pipe	2006	Routine Inspections Only
2682+84.10	UL-33	ABD-1	Abandoned Drain	18" Vitrus Tile Pipe	Unknown	No action required. Can be removed if desired.
2696+53.10	UL-33	ABD-2	Abandoned Drain	36" CMP	Unknown	No action required. Can be removed if desired.
2712+18.10	UL-33	US-30	Unnamed Wash	24" RCP	2003	Routine Inspections Only
2723+12.10	UL-33	US-31	Abandoned	Unknown	Unknown	No action required. Can be removed if desired.
2734+91.90	UL-34	US-32	Wash-UnNamed 2016	30" RCP	2016	Routine Inspections Only
2755+44.90	UL-34	US-33	Abandoned 2014	24" Vitrus Tile Pipe	Unknown	No action required. Can be removed if desired.
2764+40.90	UL-34	US-34	UnNamed Wash - "Weavers" 2002	36" RCP	2002	Routine Inspections Only
2778+98.90	UL-34	US-35	Big Salt Wash Feeder	30" RCP	2002	Routine Inspections Only
2786+56.90	UL-34	US-36	Unknown off of BLM	24" Vitrus Tile Culvert	Unknown	Routine Inspections Only
2815+36.90	UL-35	US-37	Wash Unknown 2014	24" RCP	2014	Routine Inspections Only
2884+78.90	UL-36	US-38	Big Salt Feeder	30" Vitrus Tile Pipe	Unknown	Routine Inspections Only
2901+43.90	UL-37	US-39	Big Salt Feeder	30" Vitrus Tile Pipe	Unknown	Routine Inspections Only
3066+36.90	LIN-3	US-41	Hines Drain Salinity Work	36" x2 RCP	Replaced during Salinity Work	Routine Inspections Only
3103+89.90	LIN-3	US-42	Storm Drain Salinity Work	4'x5' Concrete Box Culvert	Replaced during Salinity Work	Routine Inspections Only
3147+89.90	LIN-3	US-43	Storm Drain Salinity Work	Twin 5'x5' Concrete Box Culvert	Replaced during Salinity Work	Routine Inspections Only
3342+61.00	LIN-3	US-44	Storm Drain Salinity Work	Twin 5'x5' Concrete Box Culvert	Replaced during Salinity Work	Routine Inspections Only
3379+00.00	LIN-3	US-45	Storm Drain Salinity Work	24" RCP	Replaced during Salinity Work	Routine Inspections Only
3406+80.00	LIN-3	US-46	Storm Drain Salinity Work	24" RCP	Replaced during Salinity Work	Routine Inspections Only



Approximate Station:	Canal Section:	Undershot Name	Brief Description	Size and Material	Last Replacement Date	Action Required:
3414+00.00	LIN-3	US-47	Storm Drain Salinity Work	24" RCP	Replaced during Salinity Work	Routine Inspections Only
3586+00.00	LIN-3	US-48	Storm Drain Salinity Work	24" RCP	Replaced during Salinity Work	Routine Inspections Only

## Appendix F // Geophysical Investigations CRID 214 and CRID 215

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## Geophysical Technical Memorandum CRID 214 – Summary Table

<b>Investigation Site</b> <b>Stationing</b> <b>Mile Post (MP)</b> <b>Orientation</b> <b>Latitude</b> <b>Longitude</b>	<b>Summary of Investigation Results</b>	<b>Recommendations</b>
<b>Site: GP1</b> 1428+40 to 1430+05 MP 7.89 Left Bank 39.11735, -108.36707	<p>A geophysical investigation was performed because the inspection team observed seepage collecting in a ditch near the embankment toe when the canal water level is near maximum. The seepage extended for approximately 300 feet downstream.</p> <p>Correlation and interpretation of the available geophysical, design and field data indicates that seepage pathways may exist in the embankment and foundation along the entire profile length. The observation of a very low resistivity zone at the of the embankment could support the theory that seepage at this site would occur when the water level in the canal is at its highest, and is able to provide enough head pressure to flow through the embankment, or is high enough to flow through the lower resistivity material at the top of the embankment.</p>	<p>Monitor site routinely for worsening seepage, noting conditions such as increased or cloudy seepage, erosion, and slope instability (e.g., sloughing, cracking). Monitor at greater frequency (at least daily) and notify Reclamation if condition worsen, and also monitor daily during/after significant storm events and high water periods.</p> <p>When canal is dewatered, consider lining with concrete to limit seepage through embankment and foundation and loss of water from canal. Subsequent to liner installation (if implemented) monitor embankment seepage for effectiveness of the liner installation.</p>

<b>Investigation Site</b> <b>Stationing</b> <b>Mile Post (MP)</b> <b>Orientation</b> <b>Latitude</b> <b>Longitude</b>	<b>Summary of Investigation Results</b>	<b>Recommendations</b>
<b>Site: GP2</b> 1473+00 to 1474+65 MP 8.76 Left Bank 39.1165, -108.38156	<p>A geophysical investigation was performed because GVWUA observed seepage collecting in a ditch near the embankment toe and the inspection team noticed unusually green vegetation at this location.</p> <p>Correlation and interpretation of the available geophysical, design and field data indicates that seepage pathways may exist in the embankment and foundation along the entire profile length. The observation of a very low resistivity zone at the top of the embankment could support the theory that seepage at this site would occur when the water level in the canal is at its highest, and is able to provide enough head pressure to flow through the embankment, or is high enough to flow through the lower resistivity material at the top of the embankment.</p>	<p>Monitor site routinely for worsening seepage, noting conditions such as increased or cloudy seepage, erosion, and slope instability (e.g., sloughing, cracking). Monitor at greater frequency (at least daily) and notify Reclamation if conditions worsen, and also monitor daily during/after significant storm events and high water periods.</p> <p>When canal is dewatered, consider lining with concrete to limit seepage through embankment and foundation and loss of water from canal. Subsequent to liner installation (if implemented) monitor embankment seepage for effectiveness of the liner installation.</p> <p>Clear excessive vegetation from embankment slope and toe area, which could obscure observation of seepage or worsening conditions. Keep vegetation trimmed, particularly at the embankment toe to facilitate observation of potential seepage.</p>



<b>Investigation Site</b> <b>Stationing</b> <b>Mile Post (MP)</b> <b>Orientation</b> <b>Latitude</b> <b>Longitude</b>	<b>Summary of</b> <b>Investigation Results</b>	<b>Recommendations</b>
<b>Site: GP3</b> 1479+55 to 1481+20 MP 8.88 Left Bank 39.11632, -108.38388	<p>A geophysical investigation was performed because GVWUA reported seepage during high canal water levels.</p> <p>Correlation and interpretation of the available geophysical, design and field data indicates that seepage pathways may exist in the embankment and foundation along the entire profile length. The observation of a very low resistivity zone at the top of the embankment could support the theory that seepage at this site would occur when the water level in the canal is at its highest, and is able to provide enough head pressure to flow through the embankment, or is high enough to flow through the lower resistivity material at the top of the embankment. Seepage may be more prevalent centered at approximate profile distances 40 feet, 130 feet, and 225 feet.</p>	<p>Monitor site routinely for worsening seepage, noting conditions such as increased or cloudy seepage, erosion, and slope instability (e.g., sloughing, cracking). Monitor at greater frequency (at least daily) and notify Reclamation if conditions worsen, and also monitor daily during/after significant storm events and high water periods.</p> <p>When canal is dewatered, consider lining with concrete to limit seepage through embankment and foundation and loss of water from canal. Subsequent to liner installation (if implemented) monitor embankment seepage for effectiveness of the liner installation.</p> <p>Clear excessive vegetation from embankment slope and toe area, which could obscure observation of seepage or worsening conditions. Keep vegetation trimmed, particularly at the embankment toe to facilitate observation of potential seepage.</p>

<b>Inspection Site</b> <b>Mile Post (MP)</b> <b>Orientation</b> <b>WU Observation</b> <b>Number</b> <b>Latitude</b> <b>Longitude</b>	<b>Summary of Inspection Results</b>	<b>Recommendations</b>
Site: GP1 MP 20.08 Left Bank ABO Lat 39.12389 Long – 108.55086	Three locations at or near the embankment/foundation contact are indications of assumed seepage.	<p>Continued visual monitoring, including the existing French drain and pump system. Clear excessive vegetation for observation. Monitor the pump outflow to ensure fines are not being piped from the internal embankment structure. If seepage 3D high resolution surveys with borehole control to further characterize the site conditions. If seepage is observed, notify Reclamation.</p> <p>Remove woody vegetation and trees, including the entire root system, from the embankment slope and toe. Backfill voids created by root removal with compacted material.</p>
Site: GP2 MP 21.3 Left Bank WU 18 Lat 39.13634 Long – 108.55908	Seepage is interpreted to be occurring at profile distances 321 to 501 feet, at or near the embankment/foundation contact.	<p>Continue visual monitoring. If seepage is observed, notify Reclamation.</p> <p>Consult a civil engineer and geotechnical engineer to rebuild the embankment and foundation where embankment soils are likely in a saturated or seepage condition (i.e., profile distances 321 to 501 feet).</p>
Site GP3 MP 21.44 Left Bank WU 18 Lat 39.13893 Long – 108.56021	Seepage is interpreted to be occurring at profile distances 120 to 333 feet, at or near the embankment/foundation contact.	<p>Continue visual monitoring, Clear excessive vegetation for observation. If seepage is observed, notify Reclamation.</p> <p>Remove woody vegetation and trees, including the entire root system, from the embankment slope and toe. Backfill voids from root removal and compact material in lifts.</p> <p>Install filters or dewatering drains at the toe as determined by a geotechnical engineer.</p>
Site: GP4 MP 22.09 Left Bank WU 19 Lat 39.14347 Long – 108.56991	Based upon resistivity and SP profile results, and aerial imagery, seepage is assumed to be occurring at or slightly below the embankment/foundation contact at profile distances 13 to 40 feet, 60 to 89 feet, and 106 to 159 feet.	<p>Continue visual monitoring. Clear excessive vegetation for observation.</p> <p>As the resistivity results indicate likely seepage just below the embankment/foundation contact, visual monitoring should focus on the embankment toe area along this profile. If seepage is observed, notify Reclamation.</p>

<p>Site: GP5 MP 23.69 Left Bank WU 23 Lat 39.15039 Long – 108.5871</p>	<p>Based on overlapping variations in the resistivity and SP data for this profile, there appears to be one possible seepage area at profile distances 148 to 188 feet.</p>	<p>Based on the geophysical result and aerial images of this area, there does not appear to be a significant seepage concern at this location. Continue visual monitoring. If seepage is observed, notify Reclamation.</p> <p>Consult a geotechnical engineer to verify the density of the embankment core.</p> <p>Remove woody vegetation and trees, including the entire root system, from the embankment slope and toe. Backfill voids created by root removal with compacted material.</p>
<p>Site: GP6 MP 23.8 Left Bank WU 24 Lat 39.15114 Long – 108.58727</p>	<p>The resistivity values observed at this site are interpreted to indicate likely through seepage at profile distances 95 to 240 feet, especially at 175 to 210 feet.</p>	
<p>Site: GP7 MP 24.37 Left Bank WU 25 Lat 39.15957 Long – 108.5902</p>	<p>Based on resistivity, SP, and visual image information from this area, profile distance 0 to 80 feet and 158 to 333 feet are assumed to indicate areas of seepage occurring through the embankment materials or at the embankment/foundation contact.</p>	<p>Continue visual monitoring. Clear excessive vegetation for observation. If seepage is observed, notify Reclamation.</p> <p>Consult a civil engineer and geotechnical engineer to rebuild the embankment and foundation where embankment soils are likely in a saturated or seepage condition.</p>
<p>Site: GP8 MP 24.7 Left Bank WU 28 to 29 Lat 39.16283 Long – 108.59305</p>	<p>The entire area surveyed as part of MP24.7 is considered prone to seepage. The area at profile distances 500 to 695 feet is interpreted as being less likely to have major seepage, as compared with profile distances 0 to 500 feet; however, low resistivity are still observed in the 500 to 695 feet interval, suggesting that seepage may have been lessened but is still ongoing.</p>	<p>Continue visual monitoring. If seepage is observed, notify Reclamation.</p> <p>Remove woody vegetation and trees, including the entire root system, from the embankment slope and toe. Backfill voids created by root removal with compacted material.</p> <p>Longitudinal cracking and observed voids on the crest of the embankment should be investigated by an engineer to determine embankment reconstruction or recommended repair methods. If seepage is observed to increase, install filters or dewatering drains at the toe as determined by a geotechnical engineer.</p>

<p>Site: GP9 MP 25.13 Left Bank WU 30 Lat 39.16599 Long - 108.59775</p>	<p>Seepage is indicated at profile distances 172 to 668 feet. This broad-based seepage is interpreted to be occurring at or near the embankment/foundation contact.</p>	<p>Continue visual monitoring. If seepage is observed, notify Reclamation.</p> <p>Remove woody vegetation and trees, including the entire root system, from the embankment slope and toe. Backfill voids created by root removal with compacted material.</p> <p>If it appears that seepage rates are increasing or if water becomes cloudy, install filters or dewatering drains at the toe if warranted as determined by a geotechnical engineer.</p>
<p>Site: GP10 MP 25.41 Left Bank ABO Lat 39.16998 Long - 108.59791</p>	<p>Seepage is indicated throughout this entire profile, especially at profile distances 0 to 87 feet and 105 to 165 feet.</p>	<p>Continue visual monitoring. If seepage is observed, notify Reclamation.</p> <p>A civil engineer and geotechnical engineer should be consulted to rebuild the embankment and foundation where ERI indicates that embankment soil densities are low.</p>
<p>Site: GP11 MP 26.41 Left Bank WU 33 Lat N/A Long N/A</p>	<p>No data collected.</p>	<p>Continue visual monitoring. If seepage is observed, notify Reclamation.</p>
<p>Site: GP12 MP 26.66 Left Bank WU 34 Lat N/A Long N/A</p>	<p>Resistivity results indicate broad-based seepage at this location, especially at profile distance 8 to 62 feet, 130 to 156 feet, 200 to 570 feet, 588 to 623 feet, sporadically throughout the profile distance 642 to 818 feet, and again at 945 to 1,002 feet.</p>	<p>Monitor site routinely for worsening seepage, noting conditions such as increased or cloudy seepage, erosion, and slope instability (e.g., sloughing, cracking). Monitor at greater frequency (at least daily) during these periods of worsening conditions, or during high water or storm events. If any signs of newly developing and/or worsening seepage are encountered, notify Reclamation to determine if further action is necessary.</p> <p>Inspect the embankment for evidence of existing or developing instability such as sloughing, cracking, depressions, bulges, scarps, over-steepened slope, or slope failures. If significant evidence of instability or slope failure is detected, notify Reclamation immediately, and monitor the area of slope failure daily for worsening conditions until repair is conducted.</p>



<p>Site: GP13 MP 28.66 Left Bank WU 42 to 43 Lat 39.19107 Long – 108.63806</p>	<p>Based upon resistivity and SP data collected at this location, assumed seepage at this location, assumed seepage paths are indicated at profile distances 0 to 240 feet and 690 to 840 feet within the embankment and at profile distances 270 to 630' in the foundation.</p>	<p>Continue visual monitoring. Clear excessive vegetation for observation. If seepage is observed, notify Reclamation.</p> <p>For water conservation, to reduce or eliminate seepage, it is recommended that engineers be consulted to determine if this reach of canal embankment should be reconstructed.</p>
<p>Site: GP14 MP 29.12 Left Bank WU 44 Lat 39.19518 Long - 108.64004</p>	<p>Based upon resistivity and SP data collected at this location, assumed seepage paths are indicated at profile distances 0 to 112 feet, 144 to 184 feet, and 236 to 328 feet.</p>	<p>Continue visual monitoring. Clear excessive vegetation for observation. If seepage is observed, notify Reclamation.</p> <p>Remove woody vegetation and trees, including the entire root system, from the embankment slope and toe. Backfill voids created by root removal with compacted material.</p> <p>A civil engineer and geotechnical engineer should be consulted to rebuild the embankment and foundation where embankment soils are likely in a saturated or seepage condition.</p>

<p>Site: GP15 MP 29.27 Left Bank WU 46 Lat 39.19714 Long - 108.63893</p>	<p>Based upon resistivity and SP data results for this location, the entire area tested, profile distances 0 to 165 feet is considered to be a seepage area, from the embankment/foundation contact at about 8 to 10 feet below the embankment crest, down to roughly 15 to 18 feet below the crest.</p>	<p>Monitor site routinely for worsening seepage, noting conditions such as increased or cloudy seepage, erosion, and slope instability (e.g., sloughing, cracking). Clear excessive vegetation for observation. Monitor at greater frequency (at least daily) during these periods of worsening conditions, or during high water or storm events. If any signs of newly developing and/or worsening seepage are encountered, notify Reclamation to determine if further action is necessary.</p> <p>Remove woody vegetation and trees, including the entire root system, from the embankment slope and toe. Backfill voids created by root removal with compacted material.</p> <p>If it appears that seepage rates are increasing, install filters or dewatering drains as determined by geotechnical engineer. As seepage at this location appears to be a consequence of a thicker alluvial section related to the nearby cross drainage, any modifications should take into account cleaner sands and gravels at this location.</p>
<p>Site: GP16 MP 32.3 Left Bank WU 54 Lat N/A Long N/A</p>	<p>Based on resistivity and SP data from this location, possible seepage is noted at profile distances 0 to 91 feet, 140 to 172 feet, and 228 to 246 feet.</p>	<p>Continue visual monitoring. Clear excessive vegetation for observation, If seepage is observed, notify Reclamation.</p>

## Appendix G // USBR Operations and Maintenance Reports – Remaining Tasks

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USBR O&M Recommendation	Category	Relevant Canal Segments	Description	Notes
2002-2-E	2	LIN-2, LIN-3	Repair the concrete in the invert and sides of the Government Highline Canal downstream of the Indian Wash flume, and the concrete lining between laterals 44.5 and 44.75 and in the invert near camp 7.	Concrete lining between 44.5 and 44.75 repaired in Winter 2017
2002-2-F	2	UL-21	Evaluate for possible repairs or rehabilitation the pier footing and abutments for the O&M bridge adjacent to the 1220 flume	
2003-2-C	2	UL-38	Install new metal guardrails, including end rails, and steel posts that meet current standards on the Big Salt Wash Bridge	
2007-2-B	2	UL-6	The inlet structure for Tunnel #2 has erosion behind the right wall that needs to be repaired and the small tree growing against the concrete of the wall needs to be removed	
2008-2-C	2	UL-16, UL-17	Remove the large trees to a distance of 15 feet from the toe of the left embankment of the Government Highline Canal downstream of the H Road crossing and downstream of the Horizon Drive crossing then grub out the root balls and larger roots, and refill and compact the embankment	
2008-2-F	2	UL-38	Clean and recoate the upstream face of the radial gates for the check structure at the Big Salt Wash siphon on the Government Highline Canal	
2008-2-G	2	UL-13, UL-32	Remove woody vegetation to a distance of 25 feet and repair the concrete on the wasteway discharge channels at Indian Wash and at Little Salt Wash on the Government Highline Canal	Partially Complete
1996-3-A	3	UL-1	Repair the concrete wall on the south side of the canal at the dam tender's residence.	To be completed with "First 500" Project
1996-3-B	3	UL-1	Repaint rusted metal surfaces or metal surfaces with flaking paint at the wasteway near Plateau Creek	
1996-3-C	3	UL-1	Repair the concrete deck at the wasteway near Plateau Creek	
1996-3-J	3	LIN-3	Repair two concrete escape structure steps in Stage 1.	Partially Complete
2002-3-A	3	UL-25	Repair the vandalized O&M gate at Persigo Wash	
2007-3-C	3	LIN-3	Repair or replace the drain line from the East Salt Creek siphon manhole to the creek discharge point	
2007-3-D	3	UL-4	The loose and missing pavers at the inlet of Tunnel #1 and some of the gunnite on the left side should be repaired	
2007-3-E	3	UL-6	The left transition gunnite walls for Tunnel #2 that curve towards the inlet structure should be repaired	
2007-3-F	3	TUN-2	The last 50' or so of the lining in Tunnel #2 has extensive and open cracks especially the outlet, where the cracks radiate into the headwall and outlet structure walls. These cracks should be marked and closely monitored visually and photographically for stability and new cracking.	



USBR O&M Recommendation	Category	Relevant Canal Segments	Description	Notes
2007-3-G	3	UL-7	The pavers in the transition walls downstream of the outlet structure on Tunnel #2 should be repaired or replaced. The vegetation growing along the top of these walls on both sides of the canal needs to be removed and controlled.	
2007-3-H	3	TUN-3	The cracks in the crown of Tunnel #3, in the older sections especially, should be marked with paint or some other method should be visually monitored. Photographs should be periodically taken of these areas to make comparisons over time.	In Progress
2008-3-F	3	LIN-3	Seal the cracks on the top of the concrete walls at the 13 Road check structure and at the Camp 7 check structure on the Government Highline Canal.	
2008-3-H	3	UL-24	Repair the damaged upstream concrete wall for the wasteway at the moss and debris removal screen and on the downstream end of the 1273 flume on the Government Highline Canal.	Weed screen done, 1273 flume not done
2008-3-I	3	System Wide	Develop and initiate a program to remove and control willows and other woody vegetation to a distance of 25 feet from all concrete structures, and 15 feet above and next to siphons, on the Government Highline Canal.	In Progress
2008-3-L	3	UL-18	Clean and recoat spots and areas of corrosion on the downstream side of the Big Salt Wash radial gate and both sides of the 16 Road and 8 Road check structure radial gates on the Government Highline Canal.	Partially Complete
2008-3-N	3	LIN-3	Replace the damaged culvert for the O&M road in Badger Wash for the Government Highline Canal.	
2008-3-O	3	LIN-3	Drain the manhole, check the drain valve, remove corrosion, clean and recoat the metalwork and repair the leak that is filling the manhole on the Badger Wash siphon for Lateral 57 for the Government Highline Canal.	
2014-2-B	2	UL-4	Clean and inspect the rusted cmp culvert just upstream of the Tunnel 1 inlet. Repair if needed	
2014-3-B	3	UL-5	Increase monitoring of the area just upstream of the Coal Canyon Siphon containing heavy vegetation for increased seepage and develop a rehabilitation plan for this section of compromised embankment.	
2014-3-C	3	LIN-2	The District should work with reclamation and Mesa County to develop and implement a plan for altering the county bridge at 34 Road so the superstructure is not in the water	In Progress
2014-3-D	3	LIN-2	Recoat the radial gate and other mechanical devices at the Lewis Wash check structure.	
2014-3-E	3	LIN-2	Clean and recoat the mechanical portions of the A 1 1/4 check structure.	
2014-3-G	3	UL-21	Remove the accumulated sediment beneath the 1220 Flume	
2014-3-H	3	UL-22, UL-26, UL-30	Seal the cracks on the top of the concrete walls at the A 15, A 21.5, and A 27 check structures.	

USBR O&M Recommendation	Category	Relevant Canal Segments	Description	Notes
2014-3-I	3	UL-25	Repair the degraded concrete in the floor of the Persigo drainage branch overshot flume where rebar is exposed.	
2014-3-J	3	UL-32	Have a bridge inspector evaluate the condition of the Little Salt Wash O&M bridge.	
2014-3-K	3	UL-33	Develop and implement a plan to monitor the movement of the A 32 check structure components.	
2014-3-L	3	UL-35	Mitigate the erosion occurring around the Stewart Wash O&M bridge.	
2014-3-M	3	LIN-3	Develop and implement a plan to monitor the 8 Road check structure for movement of the structural components.	

## Appendix H // 2015 FOA Application

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# RECLAMATION

*Managing Water in the West*



**Bureau of Reclamation Colorado River  
Basinwide & Basin States Salinity Control Programs**

**2015 FOA Project Proposal  
FOA No. R15AS00037**

**Government Highline Canal – Reach 1A  
Middle  
Grand Junction, Colorado**

**Grand Valley Water Users' Association**

**July 17, 2015**



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### **OFFICIAL RESOLUTION**

Bureau of Reclamation  
Colorado River Basinwide and Basin States Salinity Control Programs  
2015 FOA Project Proposal

<b>PART I -- PROJECT SUMMARY</b>																					
All information must be entered into the response boxes provided. Where information requested is not applicable enter "NA".																					
<b>A</b>	<b>APPLICANT/ENTITY NAME:</b> <b>City/town, State</b> Response: Grand Valley Water Users' Association Grand Junction, CO																				
<b>B</b>	<b>PROJECT PROPOSAL NAME:</b> Response: Government Highline Canal – Reach 1A Middle																				
<b>C</b>	<b>PROJECT PROPOSAL PREPARED BY:</b> Response: Brian Deeter/Mark Harris																				
<b>D</b>	<b>FUNDING REQUEST SUMMARY:</b> <i>[Use * to denote an in-kind contribution]</i> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 60%; text-align: center; padding: 5px;">FUNDING SOURCE</th> <th style="width: 40%; text-align: center; padding: 5px;">FUNDING AMOUNT</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"><b>Basinwide/Basin States Programs:</b></td> <td style="text-align: right; padding: 5px;">\$3,633,642.49</td> </tr> <tr> <td style="padding: 5px;"> </td> <td style="padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;"><b>Other Federal (list each source):</b></td> <td style="padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;"> </td> <td style="padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;"> </td> <td style="padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;"><b>Other (list each source):</b></td> <td style="padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;">Grand Valley Water Users' Association*</td> <td style="text-align: right; padding: 5px;">*\$150,240.00</td> </tr> <tr> <td style="padding: 5px;"> </td> <td style="padding: 5px;"> </td> </tr> <tr> <td style="padding: 5px;"><b>TOTAL PROJECT FUNDING:</b></td> <td style="text-align: right; padding: 5px;">\$3,783,882.49</td> </tr> </tbody> </table>	FUNDING SOURCE	FUNDING AMOUNT	<b>Basinwide/Basin States Programs:</b>	\$3,633,642.49			<b>Other Federal (list each source):</b>						<b>Other (list each source):</b>		Grand Valley Water Users' Association*	*\$150,240.00			<b>TOTAL PROJECT FUNDING:</b>	\$3,783,882.49
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<b>E</b>	<b>ABBREVIATED PROJECT SUMMARY:</b> If the project is irrigation related, include name and length of canals and laterals to be improved by piping or lining. Response: This Project includes the installation of a PVC liner through approximately 5,125 feet of previously unlined open Government High Line trapezoidal canal.																				
<b>F</b>	<b>ESTIMATED SALT LOAD REDUCTION:</b> (See FOA Section IV.A) <b>IN ORDER TO OBTAIN SALT LOAD REDUCTION ESTIMATES, THE SALT LOAD REDUCTION WORKSHEET MUST BE SUBMITTED TO THE PROGRAM MANAGER WITH A COPY TO THE APPROPRIATE RECLAMATION TECHNICAL CONTACT. FINAL SUBMISSIONS MUST BE RECEIVED NO LATER THAN JUNE 10, 2015</b> Response: <b>2583 tons</b>																				

Bureau of Reclamation  
Colorado River Basinwide and Basin States Salinity Control Programs  
2015 FOA Project Proposal

<b>G</b>	<b>ESTIMATED COST EFFECTIVENESS VALUE:</b> Response: <b>\$58.63/tons year</b>												
<b>H</b>	<b>PROJECT MANAGER CONTACT INFORMATION:</b> <table border="1"> <tr><td>Name:</td><td>Mark Harris</td></tr> <tr><td>Title:</td><td>General Manger</td></tr> <tr><td>Address:</td><td>1147 24 Road, Grand Junction, CO 81505</td></tr> <tr><td>Telephone:</td><td>970-242-5065</td></tr> <tr><td>Fax:</td><td>907-243-4871</td></tr> <tr><td>E-mail:</td><td>mharris@gvwua.com</td></tr> </table>	Name:	Mark Harris	Title:	General Manger	Address:	1147 24 Road, Grand Junction, CO 81505	Telephone:	970-242-5065	Fax:	907-243-4871	E-mail:	mharris@gvwua.com
Name:	Mark Harris												
Title:	General Manger												
Address:	1147 24 Road, Grand Junction, CO 81505												
Telephone:	970-242-5065												
Fax:	907-243-4871												
E-mail:	mharris@gvwua.com												
<b>I</b>	<b>ACKNOWLEDGEMENT OF FOA AMENDMENTS:</b> Applicants shall acknowledge receipt of any amendment to this Funding Opportunity Announcement by identifying the amendment number and date. List Amendment No. and Date:												
<b>J</b>	Engineering firm selected for project <table border="1"> <tr><td>Title:</td><td>Bureau of Reclamation - Frederick Busch/Kevin Moran</td></tr> <tr><td>Address:</td><td>445 W. Gunnison Ave., Suite 221, Grand Junction, CO 81501</td></tr> <tr><td>Telephone:</td><td>(970) 248-0600</td></tr> <tr><td>DUNS #</td><td>N/A</td></tr> <tr><td>SAM #</td><td>N/A</td></tr> </table>	Title:	Bureau of Reclamation - Frederick Busch/Kevin Moran	Address:	445 W. Gunnison Ave., Suite 221, Grand Junction, CO 81501	Telephone:	(970) 248-0600	DUNS #	N/A	SAM #	N/A		
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DUNS #	N/A												
SAM #	N/A												
<b>K</b>	Two entities submitting one proposal: <table border="1"> <tr><td>Name:</td><td></td></tr> <tr><td>Name:</td><td></td></tr> <tr><td>Lead Contact:</td><td></td></tr> <tr><td>Telephone:</td><td></td></tr> <tr><td>Fax:</td><td></td></tr> <tr><td>E-mail:</td><td></td></tr> </table>	Name:		Name:		Lead Contact:		Telephone:		Fax:		E-mail:	
Name:													
Name:													
Lead Contact:													
Telephone:													
Fax:													
E-mail:													
<b>L</b>	ACKNOWLEDGEMENT OF Memorandum of Agreement (MOA) Two or more applicants shall enter into one project agreement, if it combines ditches, laterals etc... They MUST have an MOA signed between them and attached in the FOA from Reclamation Approval.												
<b>M</b>	Master Planned Project: Is this a master planned project: YES or NO												
<b>X</b>	Mark the box to the left with an X for yes												

## PART II - PROJECT PROPOSED FOR FUNDING

Provide a brief narrative or tabular data responding to each of the following sections that apply to the proposed salinity control project. All information must be entered into the response boxes provided in the application, with the exception of maps or data tables which may be inserted in the appropriate appendix.

**A. BACKGROUND & DESCRIPTION OF PROJECT AREA:** Describe project setting and geographic location. For irrigation-related applications, include general hydrology, geology, soils, climate (average rainfall, temperature, and growing season), water storage facilities, existing irrigation facilities (total mileage of canals & laterals and number of users), irrigated acreage, types of crops, etc.

Response:

Location: The Grand Valley Water Users Association (Association) is the managing entity for a portion of the federally owned Grand Valley Project located in the central-western part of Colorado, Grand Junction, in Mesa County.

Geology: Grand Valley has been carved out of the high plateau region of sedimentary rock, with steep bluffs to the south of the Colorado River and the valley north of the river. Between the river and the mesa the area is marked by several more or less well-defined bluffs, which in places are 25 to 50 feet in height. Due north from Grand Junction the bluffs are known as the Bookcliff Range. The Mesa on each side of the river are the remnants of an old flood plain and is composed of material deposits, sandy loam soils, and shale.



Soils: Soils are made up almost wholly of material derived from sedimentary rock formations, the only exception being those soils that have been deposited from the waters of the Colorado River from alluvial soils from the foothills. The majority of the soil types include Mesa fine sandy loam 32.1%, Billings fine sandy loam 25.1% Mesa clay 20.9%. Billings silt loam 5.3% and Fruita fine sandy loam 3.7%, Billings clay loam 3.1% with other small percentages of Laurel sandy loam and find sand.



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	<p><u>Climate:</u> The climate of the Valley as a whole is arid, with marked seasonal ranges of temperatures. Winter temperatures often going below zero and with summer average temperatures in the 90's throughout the valley. The Grand Junction area normal annual precipitation is 9.41 inches</p> <p><u>System:</u> The Association first delivered water in 1917 to Reclamation's Grand Valley Project and since then has furnished a full supply of irrigation water to approximately 24,000 irrigated acres under the Government Highline Canal and 15,000 irrigated acres under the Mesa County, Palisade, and Orchard Mesa Districts and diverts the water for the Grand Valley Power Plant year round. These Grand Valley Project facilities include the Grand Valley Diversion Dam, also known as the Roller Dam, on the Colorado River in DeBeque Canyon, the 55-mile-long Government Highline Canal, 150 miles of project operated laterals, 100 miles of drainage ditches and a hydroelectric power plant. In recent years, approximately 130 miles of the laterals have been re-constructed into pressure piped laterals.</p> <p><u>Crops:</u> Corn, dry beans, alfalfa, grass hay, pasture, small grains, and seed crops. Fruits and vegetables raised on project lands include apples, pears, peaches, and grapes and a variety of truck crops.</p>
<b>B.</b>	<p><b>PROJECT MAPS:</b> Attach, as Appendix A, detailed maps showing existing facilities and proposed improvements as described in Parts B.1 and B.2 below. Printed maps shall be no larger than 11x17.</p>
<b>B.1</b>	<p><b>MAP(S) OF EXISTING FACILITIES:</b> Attach a detailed map(s) scaled appropriately to easily identify the project area, existing facilities, and major geographic features including roads, streams, reservoirs, towns, etc. If the proposed project is irrigation related, the map should show locations of canals, laterals, and irrigated lands. Those canals or laterals proposed for improvement or abandonment under this application should be clearly identified.</p> <p>For existing facilities maps please see: Appendix A-1 Base Map Appendix A-2 Project Location Map</p>



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<b>B.2</b>	<p><b>MAP(S) OF PROPOSED IMPROVEMENTS:</b> Attach a detailed topographic map(s), along with a ground and layout profile, scaled appropriately which clearly identifies improvements that would be constructed under this application. Any additional maps, such as those with an aerial photo background, can also be included to better help identify project location. If irrigation related, display proposed pipeline alignments and/or canal segments to be lined, along with locations of previously lined or piped sections. Indicate in the color blue, the portion of the delivery system facilities to be funded in whole or part by Reclamation and, in the color red, any portion to be funded by other sources. Those funding sources should be identified in Part III, B of this application.</p> <p>For proposed improvement maps please see: Appendix A-3 Middle Project Appendix A-4 Middle Section Drawings</p>
<b>C.</b>	<p><b>WATER RIGHTS AND SUPPLY:</b> Describe the water rights for both diversion and storage. Include state diversion or reservoir structure ID, if applicable. Describe irrigation water supply and water shortages.</p> <p>Response: Irrigation 730 cfs from Colorado River (appropriated 2/27/1908, adjudicated 7/22/1912) No storage right</p>
<b>D.</b>	<p><b>DETAILED DESCRIPTION OF PROPOSED PROJECT:</b> Describe the project in detail including the proposed salinity control process.</p>
<b>D.1.a</b>	<p><b>EXISTING IRRIGATION DELIVERY SYSTEM (CANALS, LATERALS, DITCHES, ETC.):</b> Describe the specific existing facilities (canals, laterals, ditches) that are to be improved or replaced. Details should include names of each canal, lateral or ditch and existing lengths and flow capacities. Additional information concerning these existing facilities should be provided in Appendix B.</p> <p>Response: The existing system is an open earthen trapezoidal canal. Design flow in this section of canal is 775 c.f.s. which includes water rights of Mesa County Irrigation District as well as Palisade Irrigation District in addition to the Grand Valley Water User's Association's rights. The section of canal to be lined with this project is an earth lined canal that was originally designed as a trapezoidal cross section with a 30 foot bottom with and 2:1 side slopes. Over the years the slopes have eroded and sloughed. In some sections heavy vegetation has grown in along the sides down to the high water surface line in the canal.</p>
<b>D.1.b</b>	<p><b>PROPOSED IRRIGATION DELIVERY SYSTEM IMPROVEMENTS:</b> Identify the canal system or individual canals and laterals and describe in detail the proposed lining or piping of those facilities. Include pipe/lining types, sizes, lengths, etc. If the proposed project requires acquisition of water or water rights, describe the acquisition plan and required contracts. Describe plans for abandoning any facilities including obliterating abandoned canal/ditch prisms.</p>
	<p>Response: The proposed improvements include lining with 2 layers of geotextile fabric on either side of a 30 mil PVC liner covered with a protective 3" shotcrete layer. A</p>

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	gravel underdrain will also be installed. The length to be improved is approximately 5,125 feet.
<b>D.2</b>	<b>OTHER TYPES OF SALINITY CONTROL (NON-IRRIGATION RELATED):</b> For desalinization, evaporation or other salinity control measures, clearly identify the salinity sources and quantify the salt (in tons/year) that will be controlled or eliminated. Include data that defines the salt loading and control in tabular format in Appendix C. Also see FOA Section IV.E.3. Response: N/A
<b>D.3</b>	<b>NEW WATER IMPOUNDMENT STRUCTURES:</b> If new ponds, reservoirs, settling basins, or other water impoundment structures are to be constructed or existing structures enlarged for any purpose (e.g., re-regulation, evaporation, etc.) as part of this application, address the requirements listed in FOA Section IV.E.1.b and identify the type and thickness of the liner, the average seepage rate expected over the project life, construction methods, and quality control program. If the size of a proposed or existing water impoundment structure increases later a new salt load calculation will be developed and funding may be reduced and/or the application ranking may change. Response: N/A
<b>D.4</b>	<b>DESCRIPTION OF ON-FARM OPPORTUNITIES:</b> If new irrigation features will provide water and pressure of such quantity, quality, and reliability to: 1) promote high efficiency sprinkler systems or 2) promote above ground and buried drip or tubing, micro spray, to meet the conditions required for precision leveled, border irrigated fields and/or surge irrigated fields, complete the Enable On-Farm Worksheet and submit required mapping in accordance with FOA Section IV.E.2. Attach the completed worksheet as Appendix D. Summarize below the number of eligible deliveries and "Claimable Acres" for each canal/lateral/ditch. Additionally, identify the percentage of landowners that have demonstrated their intent by signing the page 2 table of the worksheet, and list the total acreage represented by those landowners. Response: N/A
<b>E.</b>	<b>ENVIRONMENTAL CONSIDERATIONS:</b>
<b>E.1</b>	<b>NEPA COMPLIANCE:</b> Describe existing environmental compliance documents for the project area and new environmental documents (e.g., environmental assessments) required to implement the proposed project. Identify responsible parties and estimated costs. Response: An Environmental Assessment was completed in 2014 for the Fram Whitewater Unit Master Plan Development with the Bureau of Land Management in the Grand Junction Field office. This project is located south of the proposed project area and was for oil and gas exploration.  There are no known recent environmental compliance documents for the project area. The only known environmental document for the project area was developed for the Grand Valley Stage Two Salinity Control Project prepared in 1986. This

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	<p>document was for the lining of 38 miles of the Government Highline Canal located along the Colorado River in western Mesa County.</p> <p>It is anticipated that the proposed project would require the preparation of an Environmental Assessment. The preparation of the environmental document would be fully coordinated with Reclamation, and would be prepared by the Association through the services of J-U-B ENGINEERS, Inc.</p> <p>The estimated cost for NEPA compliance is included in Appendix E: Detailed Cost Estimate.</p>
<b>E.2</b>	<p><b>OTHER BENEFITS:</b> Describe any additional environmental benefits of the proposed project including selenium-loading reduction.</p>
	<p>Response:</p> <p><b>Efficiency and Environmental Benefits:</b> The proposed project will increase the efficiency of the existing delivery system, allow for better balance of supply and demand, and conserve water that is currently lost through seepage in the earthen canal. Such improvements to the management and control of the Government Highline Canal will lead to water continuing to be made available for the Endangered Fish Recovery Program via the 15 Mile Reach of the Colorado River.</p> <p><b>Water Quality Benefits:</b> Increased flows of high quality water through the Grand Valley and beyond, contribute to water quality and a robust riparian environment in a long reach of a very important section of the Colorado River.</p> <p><b>Selenium Benefits:</b> The Grand Valley contains selenium concentrations that have been shown to be reduced through salinity reduction practices. Any such additional flows to the Colorado River helps mitigate the continued impaired classification of the river by increasing dilution of compromised waters and support healthy river levels.</p> <p><b>Safety Benefits:</b> In addition to the other benefits, the proposed design incorporates upgrading the canal features to current Bureau of Reclamation standards which were not present during original construction. One such feature includes establishing a minimum 3 ft of freeboard on both sides to reduce the possibility of overtopping failures and reinforce the integrity of the canal. Also, safety ladders shall be placed every 750 ft on both sides of the canal to provide an escape in case someone falls in. These features provide for increased safety and welfare of the general public as well as reducing risk to the federal government.</p>
<b>E.3</b>	<p><b>ENDANGERED SPECIES CONCERNS:</b> Identify any known endangered or threatened</p>



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	species in the project area and assess the possibilities they may be affected by activities associated with the proposed project.																								
	<p>Response:</p> <p>The following species are on the US Fish &amp; Wildlife Services Threatened, Endangered and Candidate Species List for Delta County, Colorado dated June 2015:</p> <table border="1"> <thead> <tr> <th>Name</th><th>Status</th></tr> </thead> <tbody> <tr> <td>Canada lynx <i>Lynx Canadensis</i></td><td>Threatened</td></tr> <tr> <td>North American wolverine <i>Gulo gulo luscus</i></td><td>Candidate</td></tr> <tr> <td>Mexican spotted owl <i>Strix occidentalis lucida</i></td><td>Threatened</td></tr> <tr> <td>Yellow-billed cuckoo <i>Coccyzus americanus</i></td><td>Candidate</td></tr> <tr> <td>Gunnison's sage-grouse <i>Centrocercus minimus</i></td><td>Candidate</td></tr> <tr> <td>Greenback cutthroat trout <i>Oncorhynchus clarki stomias</i></td><td>Threatened</td></tr> <tr> <td>Colorado pikeminnow <i>Ptychocelcius Lucius</i></td><td>Endangered</td></tr> <tr> <td>Humpback chub <i>Gila cypha</i></td><td>Endangered</td></tr> <tr> <td>Bonytail <i>Gila elegans</i></td><td>Endangered</td></tr> <tr> <td>Razorback sucker <i>Xyrauchen texanus</i></td><td>Endangered</td></tr> <tr> <td></td><td></td></tr> </tbody> </table> <p>There are no known occurrences of any federally listed species in the proposed project area. A Biological Assessment would be conducted as part of the NEPA compliance for the proposed project. The Biological Assessment would include an evaluation of all federally listed, state sensitive and special status species and habitat that may occur in the proposed project area.</p>	Name	Status	Canada lynx <i>Lynx Canadensis</i>	Threatened	North American wolverine <i>Gulo gulo luscus</i>	Candidate	Mexican spotted owl <i>Strix occidentalis lucida</i>	Threatened	Yellow-billed cuckoo <i>Coccyzus americanus</i>	Candidate	Gunnison's sage-grouse <i>Centrocercus minimus</i>	Candidate	Greenback cutthroat trout <i>Oncorhynchus clarki stomias</i>	Threatened	Colorado pikeminnow <i>Ptychocelcius Lucius</i>	Endangered	Humpback chub <i>Gila cypha</i>	Endangered	Bonytail <i>Gila elegans</i>	Endangered	Razorback sucker <i>Xyrauchen texanus</i>	Endangered		
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E.4	<b>CULTURAL RESOURCES:</b> Identify any known archaeological sites in the area of the proposed project and assess the possibilities they may be affected by activities associated with the proposed project.																								
	<p>Response:</p> <p>There are no known cultural resources in the project area. In compliance with 36 CFR 800.4(d)(1) and 36 CFR 800.11(d), a cultural resource inventory report would be prepared and submitted to Reclamation's Archaeologist for consultation with the Colorado Office of Archaeology and Historic Preservation.</p>																								
F.	<b>HABITAT REPLACEMENT PLAN:</b> If known, describe wetlands that may be affected by the proposed project and whether they have been previously inventoried. Identify existing Habitat Replacement Plans or new evaluations and analysis needed to develop a plan. Identify costs for studies and implementation of the plan. Justification must be provided if estimated costs are less than 5% of the Total Construction Cost. See FOA Section IV.E.4 for further information.																								
	<p>Response:</p> <p>Habitat, including wetlands and riparian areas have not been recently inventoried. A review of the National Wetland Inventory Maps will be conducted to identify areas that may contain wetlands within the general vicinity of the project area.</p>																								

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	<p>The wetlands that may be impacted by the proposed project would include those associated with the irrigation canals and laterals. The proposed project would line open ditches and therefore, may eliminate the primary hydrologic element necessary for some of these areas to function as habitat. All habitat, including wetlands and riparian areas, will be inventoried during the NEPA process. A Habitat Replacement Plan would be approved by Reclamation prior to construction of the proposed project.</p> <p>The estimated cost of the Habitat Replacement Plan is 5% of the total construction cost and is included in Appendix E: Detailed Cost Estimate.</p>
<b>G.</b>	<p><b>OPERATION, MAINTENANCE AND MANAGEMENT PLAN:</b> Describe the proposed operation, maintenance, and management plan that will assure the project achieves the proposed salinity control over the project life. If the proposed project is an industrial process or an irrigation related project that relies extensively on water management to achieve benefits, a detailed description of the plan and funding source should be included. O&amp;M of water impoundment structures should be described as specified in FOA Section IV.E.1.b.</p>
	<p>Response:</p> <p>The Grand Valley Water Users' Association has extensive experience in maintaining and protecting the integrity of salinity control facilities, beginning with proper attention to any structures required during the canal lining process. For over 30 years the Association has cared for lined canals successfully. Routine service road maintenance and general operations respect the concrete wear surface and the edges of the lined canal prism. Should repairs need to be made, the Association takes care to conduct such repairs without damaging the canal lining or the integrity of any structures in a timely manner. Should repairs to the liner be required, it will be done with the input of local Reclamation engineers.</p>
<b>H.</b>	<p><b>EXPERIENCE IN IMPLEMENTING PROJECTS:</b> Identify past salinity control projects or projects of similar nature completed or underway by your organization (entity and consultant); include construction dates, brief description, and status.</p>
	<p>Response:</p> <p>The Bureau of Reclamation has designed and constructed several significant salinity control projects on the Government Highline Canal (GHC). One such project was named "Government Highline Canal – Stage 1" and was constructed in the early 1980's. This project included reshaping about 6.7 miles of canal and lining with unreinforced concrete. This section of canal had 1-1/2:1 side slopes with an 8 ft bottom width. Other features of this project included items such as an 8 ft diameter pipe siphon with radial gate check inlet, wildlife ponds, detention ditches, check structures with radial gates, wasteways, removal of original turnout structures and installation of constant head orifice turnouts, and relocating county roads.</p>

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	<p>A second similar project was named “East End Government Highline Canal – Stage 2” and was constructed in the early 1990’s. This project included constructing approximately 7.4 miles of buried PVC membrane-lined canal having a bottom width of 30 ft and 2-1/2:1 side slopes with limited reaches of concrete or shotcrete lined sections. Other features of this project included check structures, lateral turnouts, culverts, cross drains, irrigation crossings, drain inlets, a canal underdrain system, and canal safety devices. In addition, approximately 130 miles of laterals branching from the GHC have been piped by the salinity control project. Since completion, all of these projects have been effectively operated and maintained by the GVVUA.</p>
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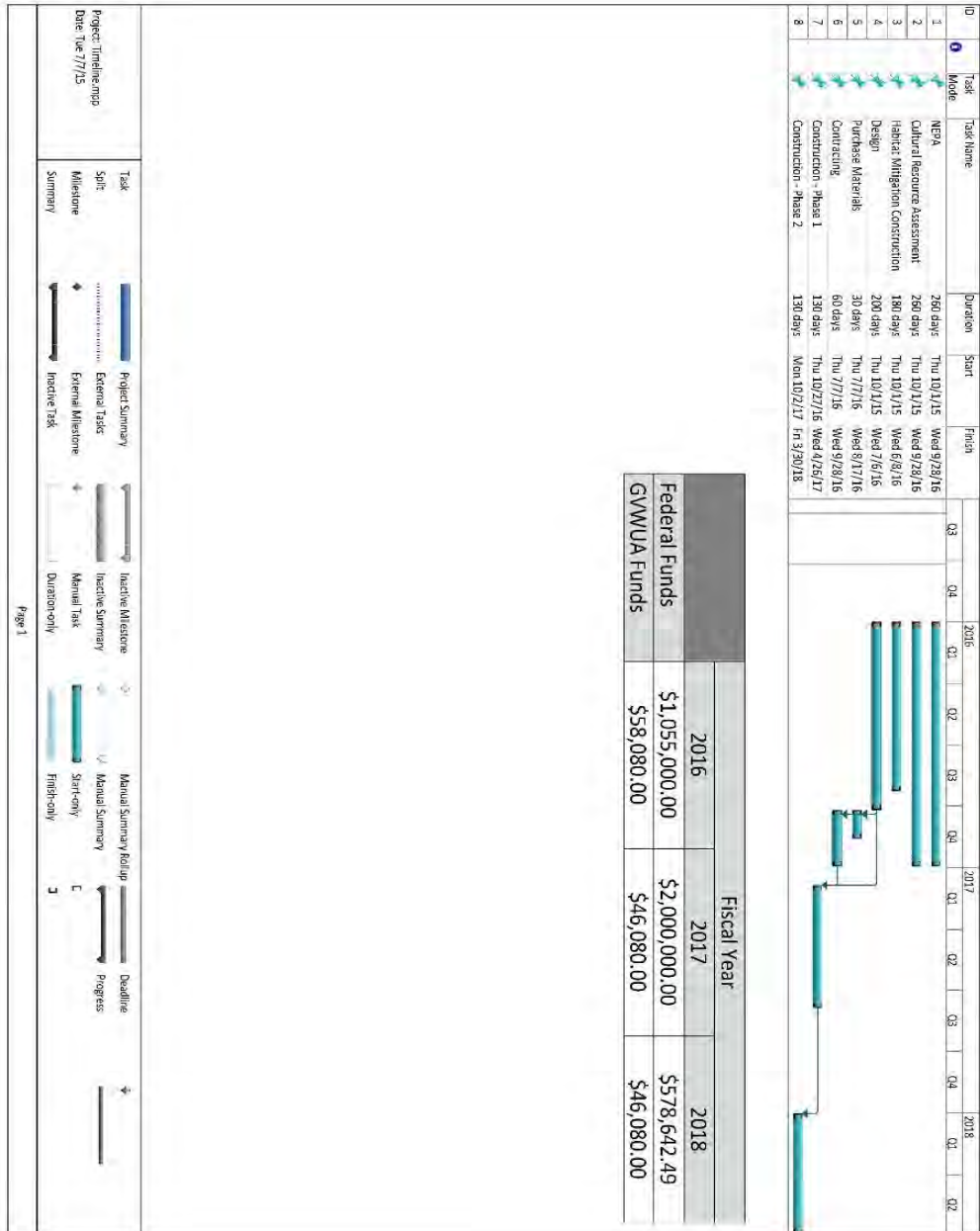
<b>PART III – PROJECT COSTS AND FUNDING PLAN</b>	
<b>A.</b>	<p><b>DETAILED COST ESTIMATE:</b> Using the table in Appendix E provide a detailed cost estimate for materials and construction. The Habitat Replacement Plan, design, NEPA, and other similar costs must be shown as direct costs. Indirect costs such overhead are to be included in the cost estimate as well. All quantities, materials, sizes, etc. must agree with those provided in the detailed project description in Part II.D of this application.</p>
<b>B.</b>	<p><b>FUNDING PLAN:</b> Describe the funding plan for construction, operation, and maintenance of the project. If funding from sources other than the Basinwide or Basin States Programs is anticipated, the funding partner should be identified and a letter of commitment attached. Proposed in-kind contributions should be identified. Funding other than Salinity Control Program funding must be spent concurrently with Reclamation Salinity Control Program funding.</p> <p>Response:</p> <p><b>Construction:</b> The project will be funded primarily with Salinity Control Program money with approximately 4% being funded by Grand Valley Water Users in the form of cash or in-kind contributions.</p> <p><b>Operation &amp; Maintenance:</b> Operation and maintenance will continue to be funded through annual assessments of stock holders as it is currently.</p>
<b>C.</b>	<p><b>COST EFFECTIVENESS:</b></p>
<b>C.1</b>	<p><b>ESTIMATED PROJECT LIFE:</b> State estimated life of project components. This is 50 years for all irrigation-related improvements.</p> <p>Response: 50 Years</p>

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<b>C.2</b>	<b>TOTAL &amp; AMORTIZED RECLAMATION COSTS:</b>		
	Total Basinwide / Basin States Program cost:	<b>\$3,633,642.49</b>	Amortized Basinwide / Basin States Program cost:
		<b>\$151,450.22</b>	
	(In the table provided, enter the total and amortized Basinwide Program or BSP costs. The amortized cost can be determined by applying the amortization factor of 0.04168 to the Basinwide or BSP costs. The amortization factor is based on the FY 2015 Federal planning interest rate of 3.375 percent and a project life of 50 years.)		
<b>C.3</b>	<b>ESTIMATE OF SALT LOAD REDUCTION:</b> Include written response from Reclamation providing salt load reduction estimate in Appendix F		
	<b>Off-farm:</b> <u>2583</u> tons/year		
	<b>Other:</b> <u>0</u> tons/year		
	<b>Total:</b> <u>2583</u> tons/year		
<b>C.4</b>	<b>COST EFFECTIVENESS VALUE:</b> Divide the Amortized Basinwide/Basin States Program cost by the total annual salt load reduction estimate.		
	<b>\$ <u>58.63</u> /ton/year</b>		
<b>D.</b>	<b>CONSTRUCTION &amp; FUNDING SCHEDULE:</b> Include a detailed schedule (Gantt chart) displaying anticipated major work items similar to the detailed cost estimate along with the major NEPA milestones. Also include funding requirements (including other funding and in-kind services) on a Federal FY basis (October 1 – September 30) for each year of the project. No more than \$2.0 million allowed per year.		
	Response: See Construction and Funding Schedule below:		



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## Appendix I // 2017 USBR Review of O&M Report

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**Review of Operations and Maintenance Report  
Grand Valley Water Users Association  
Government Highline Canal  
CRIDs 214 and 215  
Grand Valley Project, Colorado**



## O&M CATEGORY DEFINITIONS

May 4, 2005

**Category 1.** Recommendations involving the correction of severe deficiencies where immediate and responsive action is required to ensure structural safety, operational integrity of a facility, or operating personnel/public safety.

Based on the severity of the deficiency and the condition of the structure/facility at the time of the examination, the examination team will mutually prescribe an appropriate timeframe for completion of the recommendation. Suggested remedial measures will be discussed by the team at the time of the examination and included in the examination report. Within 30 days following transmittal (depending on office conducting the examination) of an examination report containing one or more category 1 recommendations, the responsible Regional Director will notify all concerned offices (i.e., Director, Office of Program and Policy Services, Attention: D-5700 and the Director, Operations, Attention: W-6000) of the operating office or entity's plans for accomplishing the work and a scheduled completion date.

**Category 2.** Recommendations covering a wide range of important matters where action is needed to prevent or reduce further damage, preclude possible operational failure of the facility, or reduce safety risks to operating personnel/public.

- (a) Such recommendations are intended to be acted upon as soon as practicable following receipt of the corresponding examination report by the operating office or entity. It is desirable that those recommendations that can be included, scheduled, and accomplished as part of the normal O&M Program be undertaken as soon as weather or water conditions allow quality remedial actions. Some recommendations may require a longer time to accomplish because of the need to budget funds, complete designs, or secure equipment, materials, or personnel. In such cases, the related planning and budgeting is to be initiated in a timely manner.
- (b) Any past category 2 recommendations remaining incomplete at the time of the examination will be addressed during that examination and within the corresponding examination report.



**Category 3.** Recommendations covering less important matters but believed to be sound and beneficial suggestions to improve or enhance the O&M of the project or facility. The status of each category 3 recommendation will be provided in the subsequent examination report. If the recommendation is still applicable, the current year designation will be reassigned to the recommendation number.

**Review of Operation and Maintenance Program (RO&M)  
Grand Valley Water Users Association System  
Grand Valley Project**

The Grand Valley Water Users Association System was examined as required by the "Directive for the Review of Operation and Maintenance (RO&M) Program Examination of Associated Facilities (Facilities other than High- and Significant-Hazard Dams)", FAC 01-04. The System has been examined under the RO&M Program since 1954, with the last examination being conducted in 2011. Copies of RO&M reports are on file in the Western Colorado Area Office - Grand Junction, CO (Attn: WCG-TFowlds), Upper Colorado Regional Office (UC-100), and at the Technical Service Center (86-68360). Cooperation and assistance received from the Grand Valley Water User Association (GVWUA) personnel were appreciated. Findings and recommendations were discussed with GVWUA personnel.

**I. GENERAL DESCRIPTION OF PROJECT AND FACILITIES**

Water for Grand Valley Project use is diverted from the Colorado River into the Government Highline Canal (GHC) at the Grand Valley Diversion Dam, approximately 23 miles northeast of Grand Junction, Colorado. Approximately 4.6 miles below the diversion dam, water for the Orchard Mesa Division is diverted from the GHC. This water passes through the Orchard Mesa Colorado River Siphon, through the Orchard Mesa Power Canal to the Grand Valley Power Plant and/or to the Orchard Mesa Pumping Plant, where it is pumped into Orchard Mesa Canals No. 1 and 2 for distribution to the water users.

Downstream of the diversion point for the Orchard Mesa Division, the GHC continues westward, approximately paralleling the river, distributing water to laterals of the Garfield Gravity Division. Water is also furnished to 8,500 acres in the Mesa County and Palisade Irrigation Districts, which were served by private facilities prior to project construction.

This examination report will cover CRIDs 214 and 215 of the GHC. This includes all portions of the canal from the inlet of Tunnel 3 to check structure A32.

## **II. DATE OF EXAMINATION, AND PARTICIPATING PERSONNEL**

The examination of the System was performed on March 1<sup>st</sup> and 2<sup>nd</sup>. The following personnel completed the inspection:

Kevin Conrad	Operations Manager, Grand Valley Water Users Association
Matt Altman	Northern Facilities Maintenance Group, Western Colorado Area Office

## **III. OPERATIONAL AND WEATHER CONDITIONS**

On March 1, 2017, approximately 490 cfs was being diverted into the GHC. All of the flow was being diverted to the Orchard Mesa Division for power generation at the inlet to Tunnel #3. No flows were being diverted to the Palisade Irrigation District, the Mesa County Irrigation District (MCID) at the outlet of Tunnel #3, or on dedicated turnout structures on the GHC for MCID. The USGS Colorado River gage near Cameo, about 5.9 miles upstream of the Grand Valley Project Diversion Dam, recorded a flow of 1,640 cfs on March 1, 2017. The average temperature for the week of the exam was 49° F. The average humidity was 47% and there was no precipitation. Average wind speeds were approximately 8 mph.

## **IV STATUS OF PREVIOUS RECOMMENDATIONS**

### **Category 1**

None

## Category 2

- 2002-2-E Repair the concrete in the invert and sides of the Government Highline Canal downstream of the Indian Wash flume, and the concrete lining between laterals 44 ½ and 44 ¾ and in the invert near Camp 7.

**Status:** Incomplete. The area downstream of the Indian Wash flume has been completed, the other areas are incomplete.

- 2002-2-F Evaluate for possible repairs or rehabilitation the pier footings and abutments for the O&M bridge adjacent to the 1220 flume.

**Status:** Incomplete

- 2008-2-B Remove the large trees to a distance of 15 feet from the toe of the left embankment of the Government Highline Canal upstream of G 7/10 Road and west of Bower Ave in Palisade, CO, then grub out the root balls and larger roots, and refill and compact the embankment.

**Status:** Incomplete-Trees have been removed but the roots remain in the embankment

- 2008-2-C Remove the large trees to a distance of 15 feet from the toe of the left embankment of the Government Highline Canal downstream of the H Road crossing and downstream of the Horizon Drive crossing then grub out the root balls and larger roots, and refill and compact the embankment.

**Status:** Incomplete. Many of these trees have been cut down but the root balls have not been removed. Most of these trees are reestablishing themselves with new shoots coming up.

- 2008-2-G Remove woody vegetation to a distance of 25 feet and repair the concrete on the wasteway discharge channels at Indian Wash and at Little Salt Wash on the Government Highline Canal.

**Status:** Incomplete-Little Salt Wash waste way has been worked on, but the Indian Wash waste way still needs work.

- 2014-2-C Clean the undershots and adjacent creek channel in the Leach Creek drainage.
- Status:** Complete-The double barrel culvert associated with the Leach Creek drainage was being replaced at the time of this exam (March 2107). The other undershots associated with the Leach Creek drainage have been cleaned.
- 2014-2-E Obtain concrete core samples from the moss and debris removal structure as well as from any of the A 15, A 21.5, A27 or 13 Road check structures and have them tested for Alkali Silica Reaction (ASR).
- Status:** Complete-Cracks were determined to be caused by the overworking of the concrete during construction which led to some small amounts of ASR gel.

### Category 3

- 2002-3-A Repair the vandalized O&M gate at Presigo Wash.
- Status:** Incomplete
- 2007-3-H The cracks in the crown of Tunnel #3, in the older sections, especially, should be marked with paint or some other method should be visually monitored. Photographs should be periodically taken of these areas to make comparisons over time.
- Status:** Incomplete-Some markings have been made throughout the tunnel but many remain unmarked.
- 2008-3-H Repair the damaged upstream concrete wall for the wasteway at the moss and debris removal screen and on the downstream end of the 1273 flume on the Government Highline Canal.
- Status:** Incomplete
- 2008-3-I Develop and initiate a program to remove and control willows and other woody vegetation to a distance of 25 feet from all concrete structures, and 15 feet above and next to siphons, on the Government Highline Canal.
- Status:** Incomplete-this is part of routine maintenance performed by GVWUA



2008-3-K Develop and implement a program to exercise all wasteway gates through their full range of travel at least once a year on the Government Highline Canal.

**Status:** Incomplete

2008-3-M Keep control cabinets for radial gates and other equipment locked when not being used to avoid inappropriate operation and vandalism and to avoid potential canal safety issues.

**Status:** Incomplete

2014-3-C The District should work with Reclamation and Mesa County to develop and implement a plan for altering the county bridge at 34 Road so the superstructure is not in the water.

**Status:** Incomplete-the county is currently working on the design for replacing the bridge and is expected to be completed in the winter of 2018. The new design will address the freeboard issue.

2014-3-D Recoat the radial gate and other mechanical devices at the Lewis Wash check structure.

**Status:** Incomplete

2014-3-E Clean and recoat the mechanical portions of the A 1¼ check structure.

**Status:** Incomplete

2014-3-F Install official reflectorized "No Trespassing" signs on the check structures and siphons on the GHC.

**Status:** Incomplete

2014-3-G Remove the accumulated sediment beneath the 1220 Flume.

**Status:** Incomplete

2014-3-H Seal the cracks on the top of the concrete walls at the A 15, A 21.5, and A 27 check structures.

**Status:** Incomplete

2014-3-I Repair the degraded concrete in the floor of the Persigo drainage branch overshoot flume where rebar is exposed.

**Status:** Incomplete

2014-3-J Have a bridge inspector evaluate the condition of the Little Salt Wash O&M bridge.

**Status:** Incomplete

2014-3-K Develop and implement a plan to monitor the movement of the A32 check structure components.

**Status:** Incomplete

#### **IV. NEW RECOMMENDATIONS**

##### **Category 1**

None

##### **Category 2**

None

##### **Category 3**

2017-3-A Replace the intake screen for the Price Stub Pumping Station.

2017-3-B Clear vegetation along known seepage areas to better monitor for cracking, sloughing, or muddy discharge indicating internal erosion.

#### **V. DETAILS OF THE 2014 EXAMINATION**

The new check structures and a pipeline noted in the 2002 examination report still have not had a transfer inspection to move them from construction to O&M status, even though they have been operated and maintained by GVVUA since 2002. The locations of these structures are as follows:

The Palisade Wasteway Pipeline has the inlet structure at GHC station 1354+53.

Lewis Wash Siphon Check – approximate GHC station 1782+52. This check transitions into the existing Lewis Wash Siphon.

Check A 1 ¼ - approximate GHC station 1924+ 95 just u/s of the canal crossing under I-70 near Horizon Drive in Grand Junction.

Check A 7 - approximate GHC station 2056+95 near the corner of H Road and 27 Road in Grand Junction,

Check A 15 - approximate GHC station 2274+95 just d/s of the crossing with Road 25.

Check A 21.5 - approximate GHC station 2420+95 d/s of the intersection with 24 Road.

Check A 27 - approximate GHC station 2582+45.

Check A 32 - approximate station 2718+95 u/s of 20 Road.

Reclamation is currently working with GVVUA to have these structures officially transferred from construction status to O&M status. It should also be noted that a pumping plant near the Highline Lake will be transferred from construction to O&M status as well, but it is not located in either urbanized reach of the GHC.

### **Government Highline Canal**

The Government Highline Canal (GHC) was examined from the inlet of Tunnel 3 to the A32 check structure. CRID 214 is considered to be from the inlet to Tunnel 3 to the Indian Wash check structure. CRID 215 runs from the Indian Wash check structure to the A32 check structure. The remaining reaches are not considered to be in an urbanized reach and were not included in this report.

The Tunnel #3 inlet and radial gate appeared to be in satisfactory condition, but there was some significant scaling observed on the top of the radial gate structure (Figure 1) and small amounts of rust on the radial gate (Figure 2). The tunnel itself was found to be in relatively good condition with some cracking and section loss in various locations throughout. Some of the cracks have been marked (Figure 3) as recommended in 2007-3-G, but there are many cracks that have not been marked or photographed (Figures 4, 5, and 6). An access door with significant corrosion and a hole in the center was also observed in Tunnel 3 (Figure 7). The access door should be cleaned, recoated, and the hole plugged. A Reclamation drawing indicates that the hole may be from a missing 5/8"-11 x 1 5/8" flat head cap screw. Unusual marks on the crown of the tunnel near the outlet were observed (Figure 8). It is unclear at this time what caused these markings.

A Langemann gate was installed in the check structure just downstream of the outlet for Tunnel #3 and has operated satisfactorily. The bi-fold gate is showing some rust and much of the concrete in the gate structure has been worn, cracked, damaged, or is deteriorating to some degree (Figures 9, 10, 11, 12, and 13). Additionally, there was a significant amount of erosion around the Stub discharge pipe (Figure 14). The intake screen for the Stub pump has corroded considerably (Figure 15) and may need to be replaced in the near future. Should a portion of the screen be damaged or corrode to section loss, it is possible that larger debris could enter the Stub pump plant and cause problems.

Several bridges crossing the GHC were inspected during this exam. The first was a privately owned steel bridge located at station 1343+77 that appeared to be in satisfactory condition (Figure 16). However, there has been some scour around the right abutment (Figure 17). The GWWUA should monitor the abutment for further scour and, if needed, notify Reclamation of the worsening condition.

Figures 18, 19, and 20 show the inlet and outlets of several cross drainage structures at stations 1346+47, 1353+05, and 1361+55, respectively. The first drainage structure, as seen in Figure 18, appears to have been modified at the inlet. The surrounding soil was built up around the inlet and brick was laid to form a makeshift structure. Vegetation, debris, and a PVC pipe for drainage were observed in the structure. The modified inlet makes it very difficult to inspect, maintain, or clean the undershot and it can be expected that more debris and vegetation will accumulate in the structure. All of the above-mentioned culverts were significantly filled with soil at the time of the inspection. The cross drainage structures in Palisade are considerably important due to low freeboard immediately downstream and the canal's proximity to developed areas. If the drainage structures cannot convey storm water during large events, there becomes a risk of excess storm water entering the canal and overtopping the fill sections where there is low freeboard. The overtopping could then lead to canal embankment failure and flooding.

Figures 21 through 33 show a privately owned timber bridge located at station 1354+52. Several deficiencies were encountered while inspecting this bridge. Foremost, signs of deterioration were found throughout the bridge (Figure 23 and 29). It also appears that many modifications have been made over the years. First, it appears that the right abutment may have settled, which could be the reason for the added bracing seen in Figures 22 and 25. Some of the vertical timber piles along the left bent appear to have been cut and replaced with horizontally laid timbers (Figure 24). There are also indications that the existing steel girders were added after the original construction. The timber cross bracings do not appear to have ever been connected to the steel girders and crude notches were cut into the bent caps to fit the larger steel girders (Figure 26). Furthermore, the steel girders do not extend to the abutments like the timber girders do (Figure 27). It is unlikely that these modifications were part of the original design and



construction or that any structural analysis has been conducted that accounts for these changes. It was stated by the District that operating personnel do not use this particular timber bridge, which is not open for public use, so the main concern for Reclamation is the possibility of the bridge collapsing and threatening the operation of the canal. This bridge should be monitored before and after the irrigation season for worsening conditions. Notify Reclamation if worsening conditions are found.

The District has been very active in pursuing ways to improve the canal in this area and has plans to line the canal from the Tunnel 3 outlet to 35 3/10 Road. The middle section, from 37 3/10 Road to 36 3/10 Road, was lined in the winter of 2016/2017. The remaining upper and lower sections are expected to be lined in the upcoming years. The remaining lining projects, if completed, would correct many of the deficiencies observed in the Palisade area (Figures 35, 37, 38, and 39). It would be beneficial to look at modifying the above-mentioned inlet and cross drainage structures when this section of canal is lined. Until that time, the District should regularly inspect and clean these cross drainage structures to the best of their abilities.

The District has been very active in pursuing ways to improve the canal in the Palisade area and has plans to line the canal from the Tunnel 3 outlet to 35 3/10 Road. The middle section, from 37 3/10 Road to 36 3/10 Road, was lined in the winter of 2016/2017. The remaining upper and lower sections are expected to be lined in the upcoming years. The remaining lining projects, if completed, would correct many of the deficiencies observed in the Palisade area (Figures 35, 37, 38, and 39). It would be beneficial to look at modifying the above-mentioned inlet and cross drainage structures when the upper section of canal is lined. Until that time, the District should regularly inspect and clean these cross drainage structures to the best of their abilities.

There are numerous trees and vegetation on the embankment between the Tunnel #3 outlet and the intersection of the canal with G 7/10 Road (Figure 34). These trees need to be removed before compromising the integrity of the canal embankment **(2008-2-B)**. Vegetation along the canal embankment should be kept clear as much as possible to better observe possible deficiencies such as rodent holes and seepage paths. It should be noted that the District does have a plan in place to burn and remove vegetation along the embankment, but, given the length of the canal, they are not able to clear all the vegetation encountered. Particular attention should be given to clearing vegetation along areas of known or suspected seepage, areas known to have problems with rodents, and areas with high fill embankments.

The Palisade Wasteway was in good condition. The District reported it operated satisfactorily with no problems.

Several seepage areas were identified in the Palisade area during a geophysical report conducted in 2012. The previously mentioned completed lining project should rectify

the seepage area designated GP1 in the report which is located approximately 2,100 ft west of 37 3/10 Rd. The District should monitor this area, especially during high water events, to determine the effectiveness of the new lining. The other seepage areas in CRID 214, designated GP 2 and GP 3, are located between 36 3/10 Rd and G 7/10 Rd. As mentioned, the District is currently looking to line this area in the next few years. Until then, the seepage areas should be kept clear of vegetation to better monitor for cracks, sloughing, and seepage flows. Contact Reclamation if seepage worsens or muddy discharge indicating internal erosion is found.

Some encroachment into the embankment was observed during the exam (Figure 36). The main concern is the shortening of possible seepage paths. Continue to monitor the embankments for further encroachment and, when possible, inform property owners of the risks of encroaching into the embankment.

In the 1990's the District obtained funding through the Colorado River Basin Salinity Control Project to line the section of canal from 35 3/10 Road to 29 Road. This project was known as Stage II - East End (GHC Station 1527+02 to 1916+93). This reconstruction began September 1992 and was completed in June 1994. This section of the GHC and associated structures are generally in good condition.

The county bridge at 34 Road (Figure 40) is a newer steel bridge. However, the bottom flanges of the I-beams are below the water surface elevation of the canal. The county currently is working on the design to replace this bridge that is expected to be completed in the winter of 2018. The bridge design will address the low freeboard and, once constructed, will complete recommendation 2014-3-C.

The Langemann gate and SCADA system at the Clifton check structure (Figure 41) were reported to be functioning properly. The safety float cable at the inlet to this check should be tightened or raised to keep most of it out of the water so it doesn't catch debris in the canal.

The Lewis Wash check structure, also built as part of the Stage II - East End GHC, was in satisfactory condition. The radial gates and associated mechanical devices on top of the structure are starting to rust and should be repainted **(2014-3-D)** (Figures 42-44). The concrete for the siphon is in fair condition. The concrete box beam bridge over Lewis Wash was very clean and in good condition.

The Indian Wash wasteway structure was built in 1915 (Figure 45) and is in poor condition. The gate operators seem to be adequate for their normal use, which is to drain the canal at the end of the year. The concrete for the inlet structure is badly damaged and minimally repaired. Both wasteway slide gates should be operated through their full range at least once a year **(2008-3-K)** as part of a program to exercise all wasteway gates on an annual basis. The O&M Bridge over Indian Wash consists of

a newer steel superstructure on the original concrete abutments. Overall this bridge looked to be in satisfactory condition. The Indian Wash Flume was constructed in 1951 and is in satisfactory condition (Figures 46). The District has injected epoxy on one end to seal up a leak and it appears to be working well. One support pillar has cracking originating from the bearing pad location and this should be monitored for future movement. The concrete lining in this area has been damaged (Figure 47).

The A1 ¼ check structure was in satisfactory condition. The paint on the mechanical portions is failing and rust is forming (Figures 48 and 49). These areas should be cleaned and repainted **(2014-3-E)**.

Overall the A7 check structure was in good condition. As seen on the previous structures, the metal portions are beginning to rust and need repainted (Figures 49-51). Some longitudinal cracking was observed as well (Figure 52). Concrete cracks should be monitored for worsening conditions. If necessary, seal cracks to avoid the steel reinforcement from corroding and swelling, which could lead to further damage of the concrete.

Similar to CRID 214, several seepage areas were reported in a geophysical report done in 2012 for CRID 215. Observations made shortly after the first fill indicate that seepage continues in many of these areas. Keep vegetation clear and monitor for cracking, sloughing, and muddy discharge. Contact Reclamation if conditions worsen or for the locations of said seepage areas.

About 1.25 miles downstream of H Road is the Leach Creek undershot which contains three 48 inch diameter culverts. These culverts need cleaned to reestablish the flow from the drainage **(2014-2-C)**. The channel downstream has been surrounded by subdivisions making cleaning this drainage difficult. The District might have to investigate alternatives for this location such as a siphon for the canal to mitigate the sedimentation problem.

The 1220 flume appeared to be in satisfactory condition (Figure 53). Some cracking was noted on the support piers that should be monitored. A considerable amount of deposition has occurred beneath the flume. The District should clean the channel and remove the sediment before the flume becomes inundated **(2014-3-G)**. The O&M bridge located adjacent to the 1220 flume appeared to be in satisfactory condition (Figure 54). However, it was noticed some section loss was occurring at the bearing load locations on the original abutments (Figure 55). Also, significant cracking and spalling was observed at various locations along the abutments (Figures 56 and 57). This area should be monitored for further degradation to determine if it is ongoing or from construction.

Upon inspection of the A15 check structure it was noticed some cracking was occurring

down the center of the walls. This longitudinal cracking was fairly uniform and extended the length of the walls (Figures 58 and 59). These cracks need to be sealed to protect the steel reinforcement from corrosion especially in the weir walls **(2014-3-H)**. Also, as with many of the check structures in CRID 215, there are areas where the coating is failing and beginning to rust (Figures 60 and 61). The warning sign (Figure 62) has faded considerably and should be replaced **(2014-3-F)**.

The 1270 flume was inspected and some damaged concrete was noted on the right side at the downstream end (Figures 63) with exposed reinforcement steel. GVVUA should repair this concrete **(2008-3-H)** before the steel corrodes and damages the concrete further. The downstream expansion joint appeared to be offset (Figures 64 and 65) indicating possible differential settlement. The District should monitor this to determine if the settlement has abated or is continuing to move. The O&M bridge at the 1270 flume is a timber structure (Figure 66). The railing along the bridge is starting to separate from the bridge (Figure 67) and should be repaired. Overall, this bridge is in satisfactory condition as long as it is not overloaded.

The Persigo drainage branch overshoot flume was in satisfactory condition (Figure 68). Vegetation has overgrown into the inlet portion of the overshoot (Figure 71) and should be removed. Also, there is a fair amount of exposed rebar in the bottom of the flume which should be repaired **(2014-3-I)** (Figure 69).

The gate on the O&M road at the Persigo Wash wasteway, reported in the 2002 examination report as vandalized, has not been repaired, so the status of recommendation **2002-3-A** is still incomplete (Figure 70). The wasteway structure at Persigo Wash (Figure 72) is showing signs of deterioration (Figures 73-75). The rust seen on the gates is of particular importance. If the slide gate guides are corroding, they will expand, and could pinch on the gate making it difficult to operate. The gate guides should be monitored and kept clean of corrosion to ensure proper operation. Also, the gates on this structure should be included in the program to be exercised annually through their full range of travel **(2008-3-K)**. The concrete wall at the outlet of the wasteway is showing signs of differential settlement. The wall has been pulled away from the rest of the structure exposing the rubber water stop (Figure 76 and 77). Monitor the joint for continued movement and repair if necessary.

The O&M bridge at Persigo Wash was in good condition. Some dirt was observed around the bearing pads which should be removed (Figure 78). Dirt can become lodged in the bearing pad causing it to ratchet. Small amounts of pitting were also observed on the corrugated metal deck (Figure 79). This may be an indication of water penetrating the top of the deck and collecting in the lower portions of the corrugated metal. Monitor for worsening condition and repair any cracks in the top of the deck.

The A21.5 check structure appeared in satisfactory condition except it contained the



same longitudinal cracking down the center of the walls (Figure 80) observed in the A15 check structure. These cracks should be sealed to protect the rebar within the walls from corrosion **(2014-3-H)**. Rust was also observed on the radial gate and the mechanical portions of the check structure (Figures 81 and 82).

The Adobe Wash O&M bridge and flume were examined next. The flume was in satisfactory condition. Some dirt was observed around one of the bearing pads (Figure 83). These bearing pads should be kept clean to keep dirt from becoming lodged in bearing. The O&M bridge is a timber structure and appears to be in satisfactory condition. Some significant cracking was observed on the abutment (Figure 84) and should be monitored. Contact Reclamation if worsening conditions are observed.

The A27 check structure was in satisfactory condition but had the same problems as the previously mentioned structures. The metal components are beginning to rust and need painted (Figure 85) and there was cracking in the top center of the walls. Soil behind a concrete embankment appears to have eroded (Figure 86) and should be backfilled. Similar to some of the other structures, the warning sign has faded and needs to be replaced (Figure 87).

The Little Salt Wash wasteway structure is another wasteway that was built in 1915 (Figure 88). Like the other wasteway structures, the gates need to be included in the program to exercise all the wasteway gates through a full range of operation at least once a year **(2008-3-K)** to assure that both gates can be used to full capacity if needed. The concrete lined wasteway channel is in poor condition with deteriorated concrete (Figures 89). Vegetation along the wasteway outlet channel has been removed from the channel but the concrete still needs to be repaired **(2008-2-G)**. The wash channel is also in poor condition with overgrown vegetation, deteriorating concrete, and undercutting (Figures 90 and 91).

The Little Salt Wash siphon was built in 1915 (Figure 92) and appears to be in satisfactory condition. However, the railing around the siphon has been damaged (Figure 93) and the concrete lining in the canal upstream of the siphon has deteriorated (Figure 94). There also may be some differential settlement associated with the siphon indicated by the joint between the siphon and the masonry retaining wall (Figure 95). Monitor the joint and contact Reclamation should the gap increase.

The timber O&M bridge over Little Salt Wash is in fair condition (Figure 96). Some of the timbers in the bridge structure have been recycled from other disassembled bridges. These recycled timbers contain sections of damage and decay (Figure 97). The previous exam stated that this bridge should have an official bridge exam performed on it **(2014-3-J)**. Load limit signs placed at both approaches indicate an exam may have been conducted, but it is uncertain at this time. Deteriorated concrete was also observed on the bridge abutments (Figure 98).

The A32 check structure appeared to be in satisfactory condition (Figure 99). It was observed that the wing walls were moving in relation to the rest of the structure and this should be monitored **(2014-3-K)** (Figures 100 and 101). Similar to the other check structures, the radial gates and mechanical portions of the check structure are showing signs of corrosion and should be recoated (Figures 102 and 103).

## **VI. CONCLUSIONS**

The Grand Valley Water Users Association System CRIDs 214 and 215 are in satisfactory condition. The GVWUA should be commended for their efforts in maintaining the system. The GVWUA should initiate a program to correct the deficiencies observed by the examination team that are outlined as recommendations in Section V of this report as well as complete any incomplete recommendations noted in Section IV.

The GVWUA should inform Reclamation about the schedule for completion of all the Category 2 recommendations and include them in their annual work plan so that they are completed within the next three (3) to five (5) years.

It is recommended that the next examination be conducted no later than 2020.

Examiner and report prepared by:

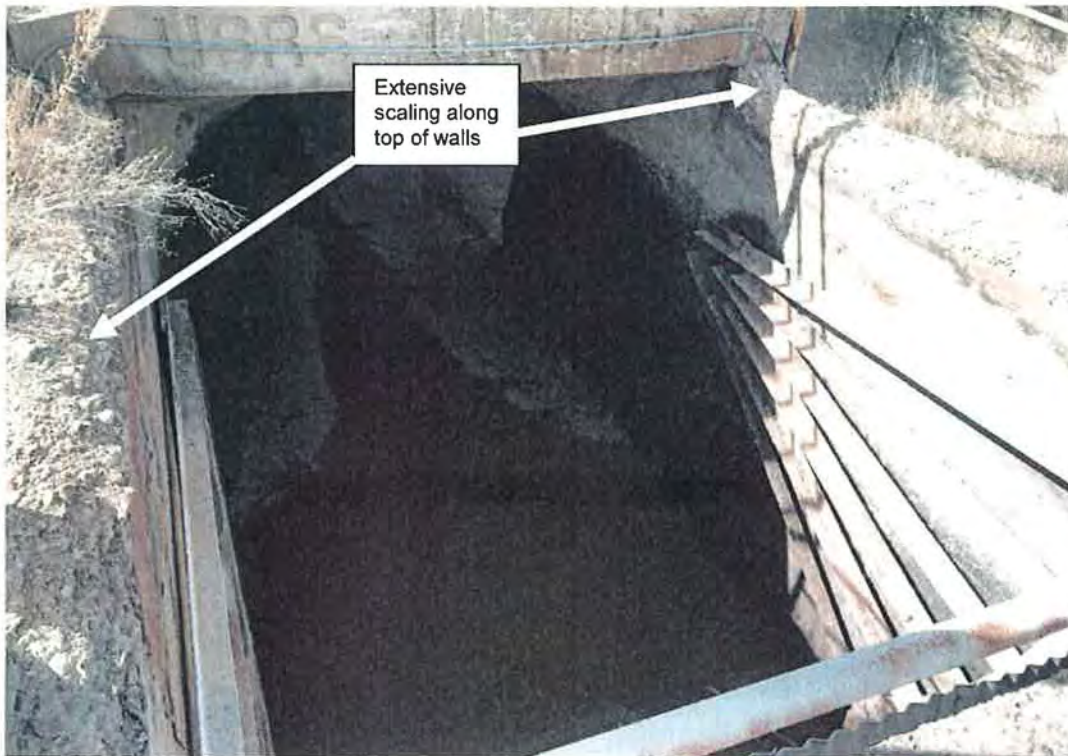
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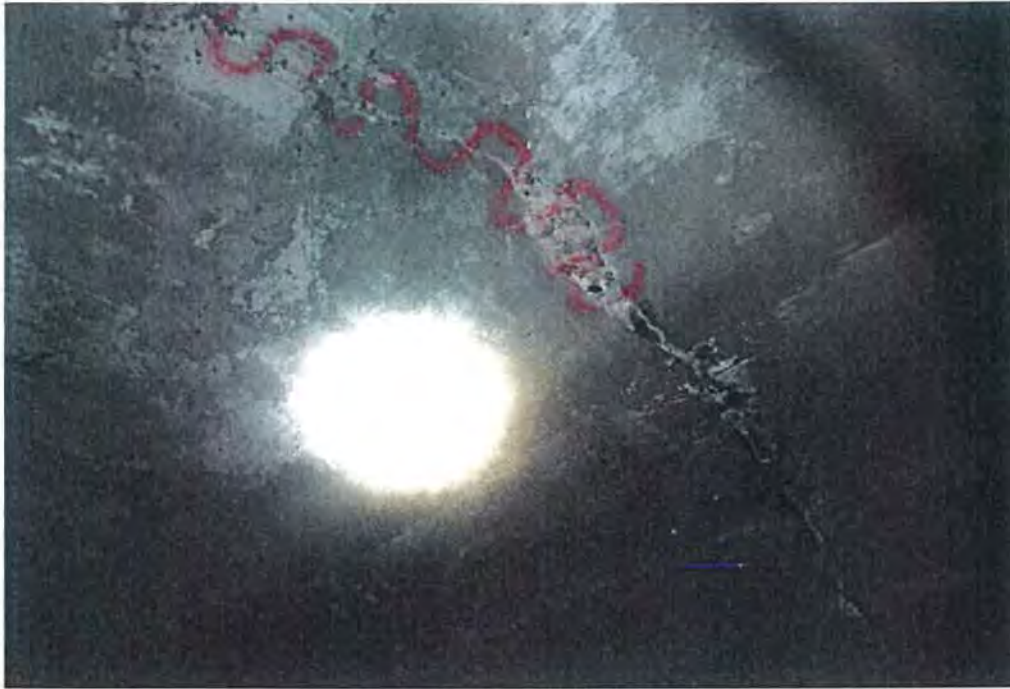


**Figure 1:** Scaling along the walls of the Tunnel 3 inlet. Grand Valley Project, Colorado 3/13/2017.



**Figure 2:** Radial gate at the inlet to Tunnel 3. Note the small amounts of rust. Grand Valley Project, Colorado 3/13/2017.





**Figure 3:** One of several cracks within Tunnel 3 that have marked by GVWUA to observe any movement. Grand Valley Project, Colorado 3/1/2017.



**Figure 4:** Significant cracking along the wall of Tunnel 3. The timber cribbing is exposed at several of the cracks. Grand Valley Project, Colorado 3/1/2017.



**Figure 5:** Significant cracking along the wall of Tunnel 3. Grand Valley Project, Colorado 3/1/2017.



**Figure 6:** Some of the cracking shows what appears to be efflorescence. This seemed to be more prevalent near the end (downstream) of the tunnel. Grand Valley Project, Colorado 3/1/2017.





**Figure 7:** The coating on an access panel used during the tunnel realignment is showing significant peeling and flaking. The underlying metal has substantial corrosion as a result. The hole in the center of the access door should be noted. Grand Valley Project, Colorado 3/1/2017.



**Figure 8:** Unusual marks on the roof of Tunnel 3 near the outlet. This portion of the tunnel is located under I-70. It is unclear at this time what the cause of these markings are. Grand Valley Project, Colorado 3/1/2017.



**Figure 9:** Looking at the downstream end of the Langemann gate at the tunnel 3 outlet. Photo was taken from the left (facing the direction of flow; typical) bank looking towards the right bank. Note the cracking and section loss in the concrete invert. Grand Valley Project, Colorado 2/21/2017.



**Figure 10:** Looking at the upstream end of the Langemann gate at the tunnel 3 outlet. Photo was taken from the right bank looking towards the left bank. Note the cracking and section loss in the concrete invert as well as the spalling below the intake screen. Grand Valley Project, Colorado 2/21/2017.





**Figure 11:** The underside of one of three bays for the Price Stub check at the Tunnel 3 outlet. Note the cracking and efflorescence. This is typical of all three bays. Grand Valley Project, Colorado 2/21/2017.



**Figure 12:** Looking at the downstream end of the Tunnel 3 outlet. Photo was taken from the left bank looking towards the right bank. Note the shotcrete lining has worn enough to expose the underlying masonry blocks. Grand Valley Project, Colorado 2/21/2017.





**Figure 13:** The right bank downstream of the Langemann gate at the tunnel 3 outlet. Note the deterioration of the shotcrete lining that covered the masonry along the bank. Grand Valley Project, Colorado 2/21/2017



**Figure 14:** The right bank downstream of the Langemann gate at tunnel 3. Significant erosion has occurred around the concrete encasement of the Stub ditch pipe. Grand Valley Project, Colorado 2/21/2017





**Figure 15:** The intake screen for the Stub Pump Plant has significant corrosion and section loss.  
Grand Valley Project, Colorado 3/1/2017



**Figure 16:** Steel bridge at station 1343+77. Grand Valley Project, Colorado 2/21/2017





**Figure 17:** Erosion around the bridge abutment at station 1343+77. Grand Valley Project, Colorado 2/21/2017



**Figure 18:** Culvert invert at station 1346+47 just upstream from lateral I-4. Grand Valley Project, Colorado 2/21/2017





**Figure 19:** Culvert invert at station 1346+47 just upstream from lateral I-4. Grand Valley Project, Colorado 2/21/2017



**Figure 19:** Plugged culvert at station 1353+05 just upstream of a timber bridge. Grand Valley Project, Colorado 2/21/2017





**Figure 20:** Plugged culvert at station 1361+55. Grand Valley Project, Colorado 2/21/2017



**Figure 21:** Overall view of the timber bridge at station 1354+52. Grand Valley Project, Colorado 2/21/2017

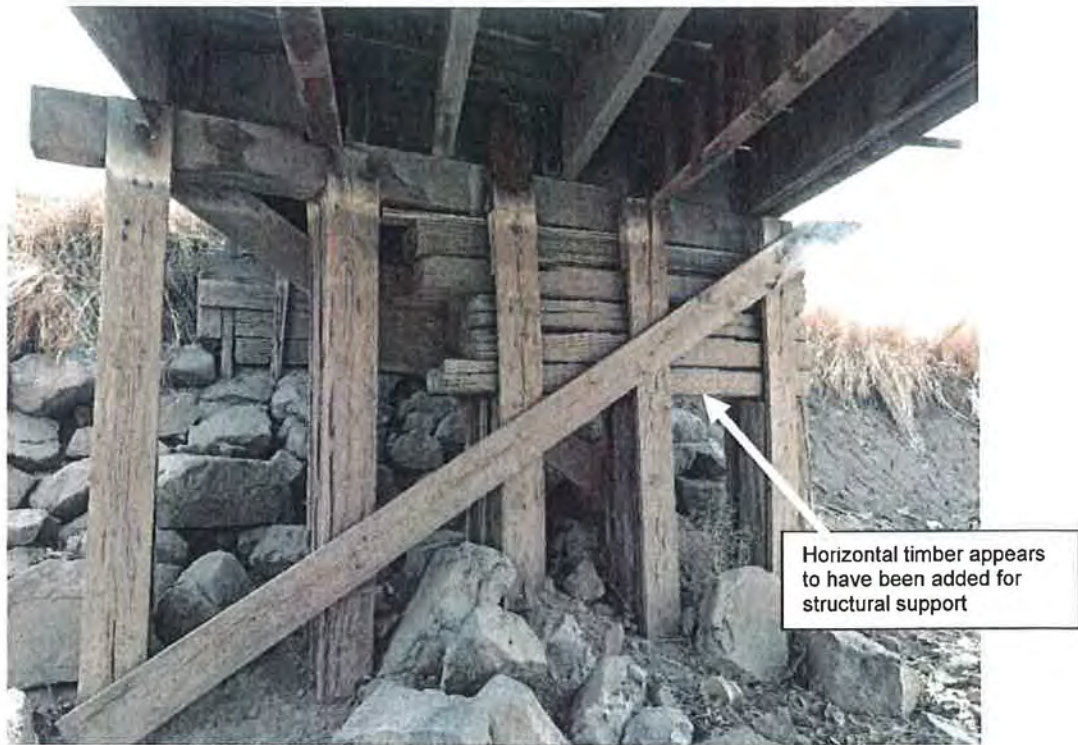


**Figure 22:** Right abutment and bent of the timber bridge. Grand Valley Project, Colorado 2/21/2017



**Figure 23:** Checks, splits, and deterioration of the timber is typical. Grand Valley Project, Colorado 2/21/2017



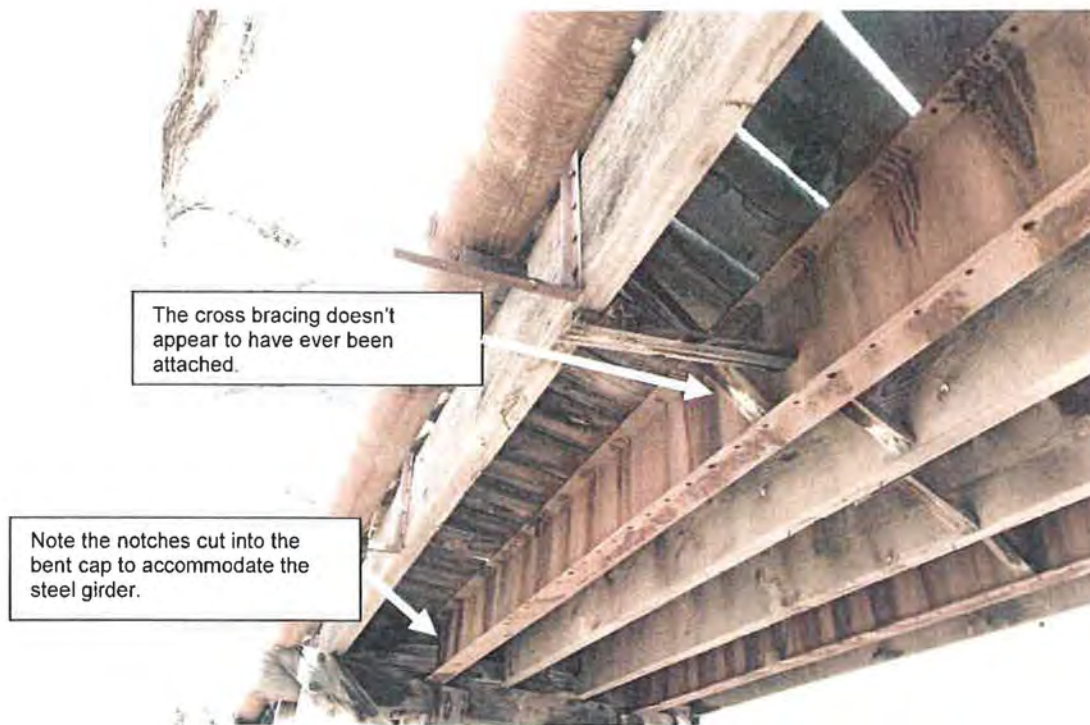


**Figure 24:** Left bent modification. Grand Valley Project, Colorado 2/21/2017



**Figure 25:** Looking up at right abutment. Grand Valley Project, Colorado 2/21/2017





**Figure 26:** Timber bridge at station 1354+52. . Grand Valley Project, Colorado 2/21/2017



**Figure 27:** Close up of the left bent and bent cap. Grand Valley Project, Colorado 2/21/2017



**Figure 28:** Overall view of the timber bridge deck. Grand Valley Project, Colorado 2/21/2017

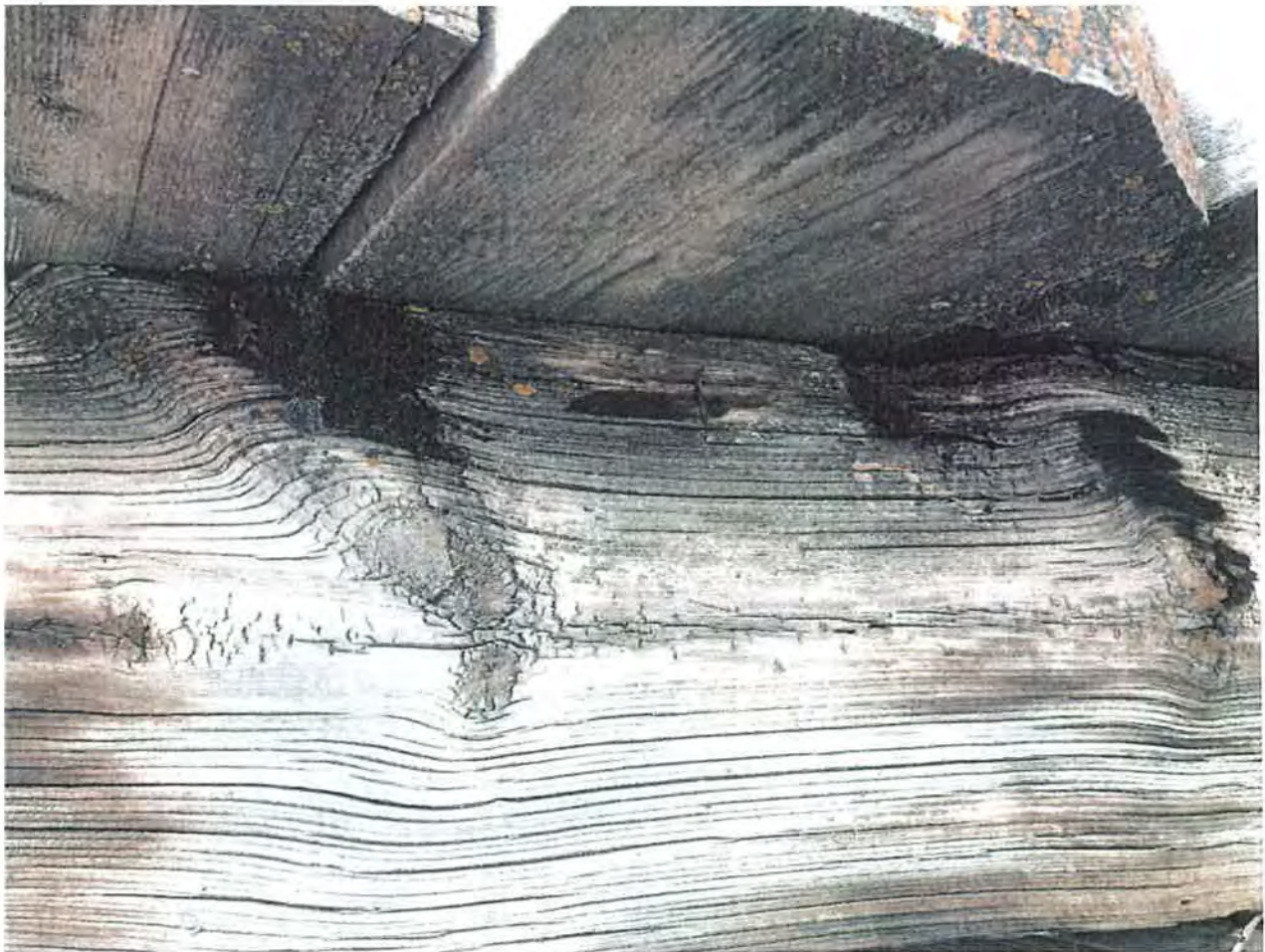


**Figures 29 and 30:** Close up of timber deck deficiencies. Grand Valley Project, Colorado 2/21/2017





**Figures 31 and 32:** Close ups of the connection of the steel girder to the timber deck. Grand Valley Project, Colorado 2/21/2017



**Figure 33:** Small amounts of what appears to be black mold were found at various locations on the bridge. Damage from black mold can be considered superficial but indicates the potential for damaging fungi growth. Grand Valley Project, Colorado 2/21/2017



**Figure 34:** Vegetation along the fill portion of the GHC. Grand Valley Project, Colorado 2/21/2017



**Figure 35:** Sloughing along the banks. Grand Valley Project, Colorado 2/21/2017





**Figure 36:** Encroachment on a fill section of the embankment. Grand Valley Project, Colorado 2/21/2017



**Figure 37:** Scour. Grand Valley Project, Colorado 2/21/2017





**Figure 38:** Shear cracks on the concrete lining. Grand Valley Project, Colorado 2/21/2017



**Figure 39:** Exposed rebar in concrete lining. Grand Valley Project, Colorado 2/21/2017

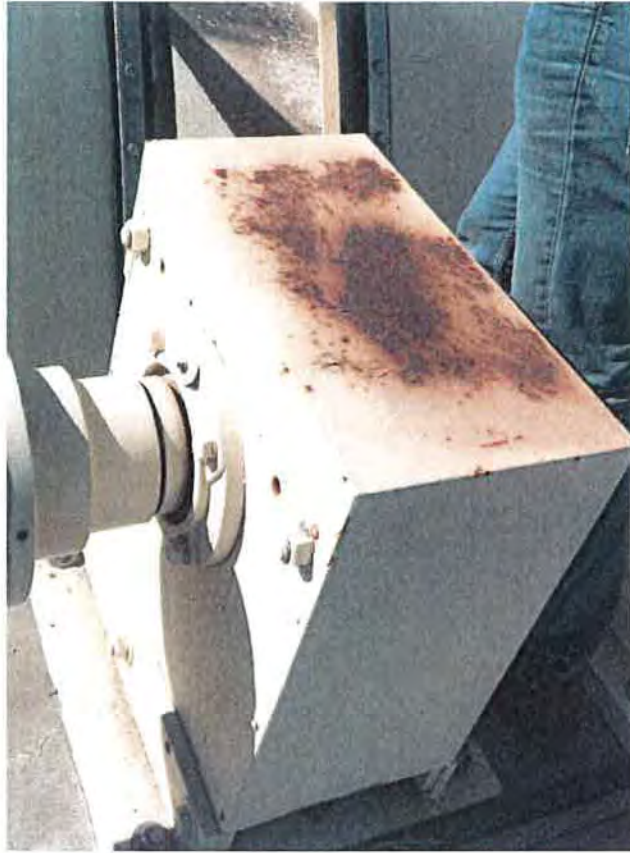




**Figure 40:** Low freeboard on the 34 Rd Bridge. Grand Valley Project, Colorado 9/23/2014



**Figure 41:** Clifton check structure. Grand Valley Project, Colorado 9/23/2014



**Figure 42:** Rusting on some of the mechanical portions of the Lewis Wash check structure. Grand Valley Project, 3/1/2017



**Figure 43:** Coating on the Lewis Wash radial gate is started to peel. Grand Valley Project, 3/1/2017



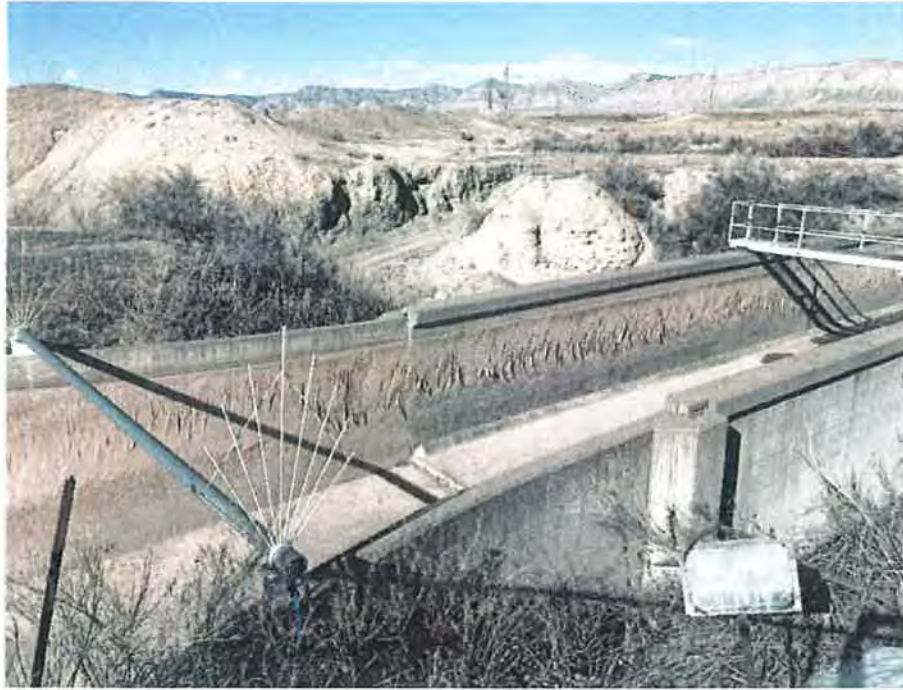


**Figure 44:** Downstream side of the Lewis Wash radial gate. Grand Valley Project, Colorado  
3/1/2017



**Figure 45:** Indian Wash wasteway. Grand Valley Project, Colorado 3/1/2017





**Figure 46:** Indian Wash flume. Grand Valley Project, Colorado 3/1/2017



**Figure 47:** Damaged lining near Indian Wash. Grand Valley Project, Colorado 3/1/2017



**Figure 48:** Rusting on some of the mechanical portions of check A 1 1/4. Grand Valley Project, Colorado 3/1/2017

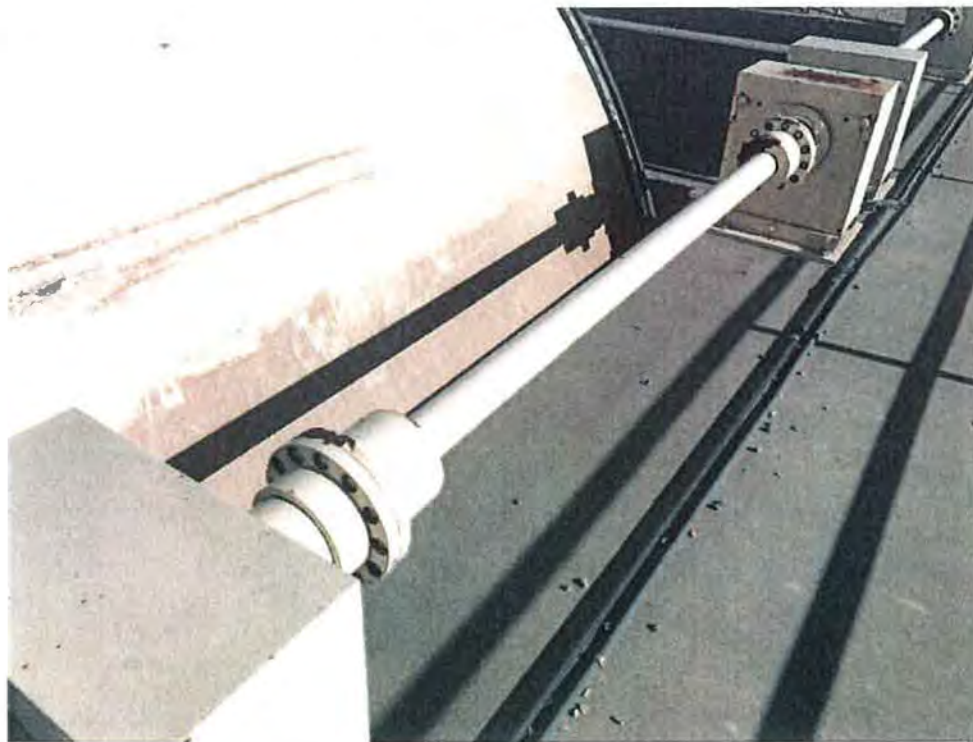


**Figure 48:** Rusting on some of the mechanical portions of check A 1 1/4. Grand Valley Project, Colorado 3/1/2017





**Figure 49:** Rusting on some of check A 7. Grand Valley Project, Colorado 3/2/2017



**Figure 50:** Rusting on some of check A 7. Grand Valley Project, Colorado 3/2/2017





**Figure 51:** Rusting on some of check A 7. Grand Valley Project, Colorado 3/2/2017



**Figure 52:** Longitudinal cracking on check A7. Grand Valley Project, Colorado 3/2/2017





**Figure 53:** 1220 Flume. Grand Valley Project, Colorado 3/2/2017



**Figure 54:** O&M Bridge near the 1220 Flume. Grand Valley Project, Colorado 3/2/2017





**Figure 55:** Section loss at the bearing pads. Note that one of the bearing pads is offset and may not be functioning properly. Grand Valley Project, Colorado 3/2/2017



**Figure 56:** Cracking, spalling, and apparent efflorescence along the abutment of the 1220 flume O&M bridge. Grand Valley Project, Colorado 3/2/2017





**Figure 57:** Significant cracking along the abutment of the 1220 flume O&M bridge. Grand Valley Project, Colorado 3/2/2017

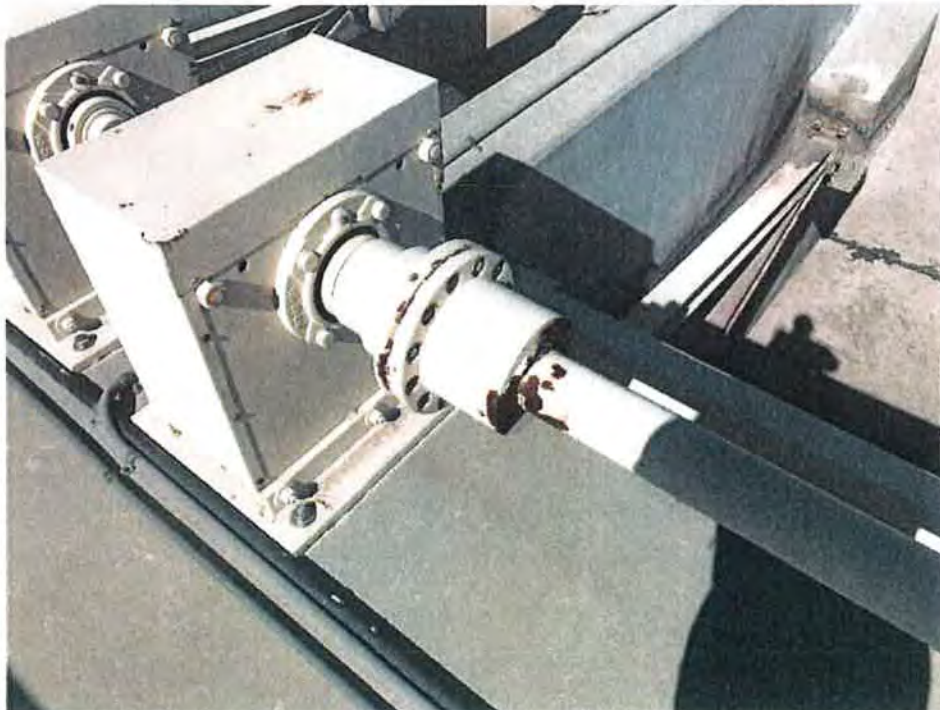


**Figure 58:** Close up of the longitudinal cracking at the A15 check structure. Grand Valley Project, Colorado 3/2/2017





**Figure 59:** Longitudinal cracking at the A15 check structure. Grand Valley Project, Colorado  
3/2/2017



**Figure 60:** Rust on the mechanical portions of the A15 check structure. Grand Valley Project, Colorado  
3/2/2017





**Figure 61:** Rust on the radial gate of the A15 check structure. Grand Valley Project, Colorado 3/2/2017



**Figure 62:** Worn "Stay Out Stay Alive" sign. Grand Valley Project, Colorado 3/2/2017





**Figure 63:** Damage concrete and exposed rebar on the 1270 flume. Grand Valley Project, Colorado 3/2/2017



**Figure 64:** Offset in the flume invert at the expansion joint. Grand Valley Project, Colorado 3/2/2017



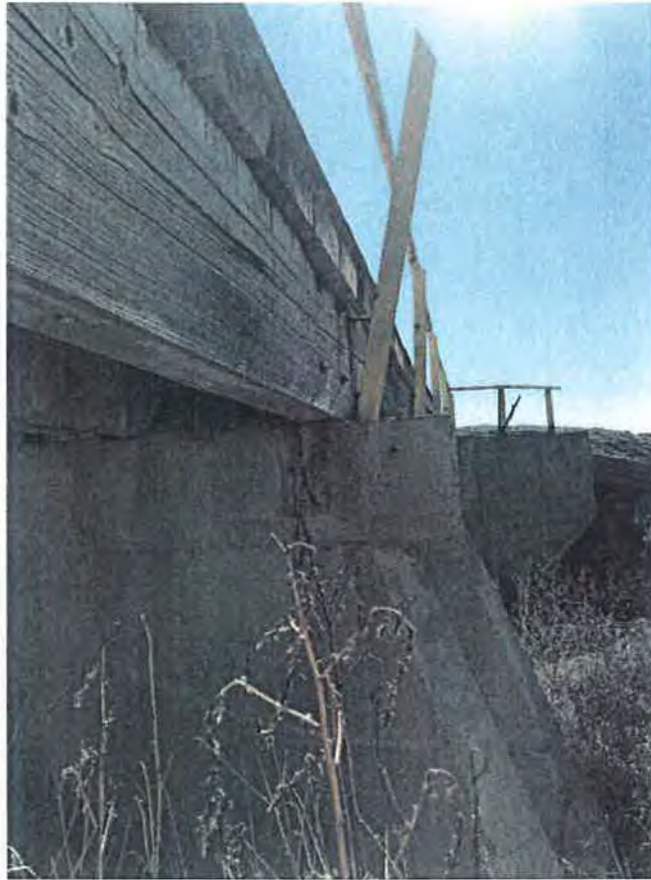


**Figure 65:** Offset at the expansion joint of the 1270 flume. Grand Valley Project, Colorado 3/2/2017



**Figure 66:** Timber bridge at the 1270 flume. Grand Valley Project, Colorado 3/2/2017





**Figure 67:** Railing along the 1270 flume O&M bridge is separating from the bridge. Grand Valley Project, Colorado 3/2/2017



**Figure 68:** Persigo Wash overshoot flume. Grand Valley Project, Colorado 3/13/2017





**Figure 69:** Exposed rebar on the invert of the Persigo Wash flume is typical. Grand Valley Project, Colorado 3/13/2017



**Figure 70:** Vandalized gate near Persigo Wash. Grand Valley Project, Colorado 3/2/2017





**Figure 71:** Overgrown vegetation at the Persigo Wash overshoot inlet. Grand Valley Project, Colorado 3/13/2017



**Figure 72:** Wasteway structure near Persigo Wash. Grand Valley Project, Colorado 3/13/2017





**Figure 73:** Spalling on the wasteway structure near Persigo Wash. Grand Valley Project, Colorado  
3/13/2017



**Figure 74:** Spalling and rust on the gate of the Persigo Wash wasteway. Grand Valley Project, Colorado 3/13/2017



**Figure 75:** Exposed rebar on the wasteway structure near Persigo Wash. Grand Valley Project, Colorado 3/13/2017



**Figure 76:** Possible differential settlement on the outlet wall for the Persigo Wash wasteway. Note the exposed rubber waterstop. Grand Valley Project, Colorado 3/13/2017



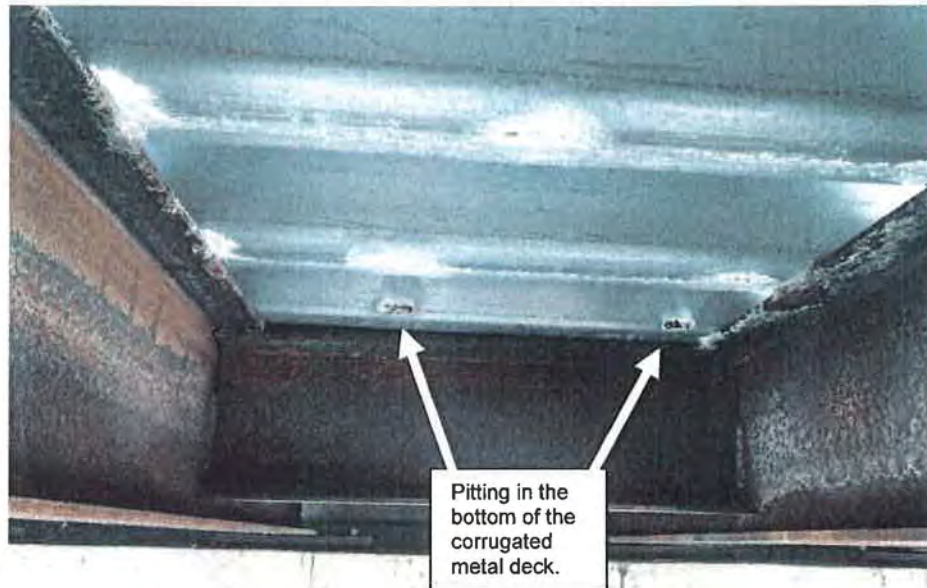


**Figure 77:** Possible differential settlement on the outlet wall for the Persigo Wash wasteway. Grand Valley Project, Colorado 3/13/2017

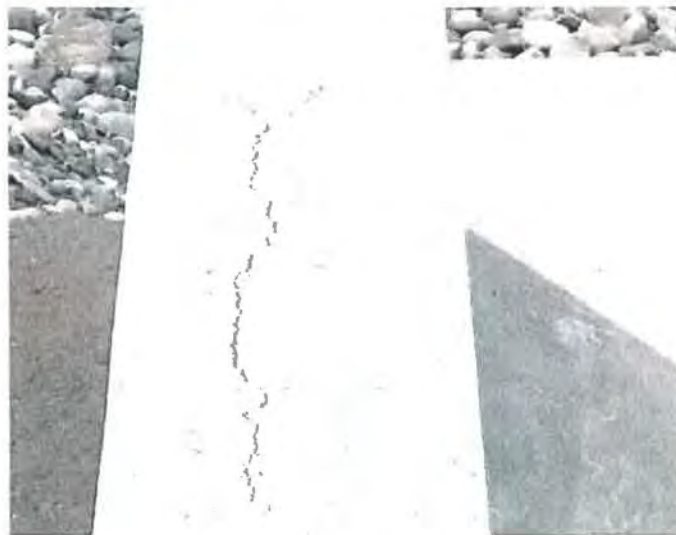


**Figure 78:** Dirt around one of the bearing pads for the Persigo Wash O&M bridge. Grand Valley Project, Colorado 3/13/2017





**Figure 79:** Pitting in the corrugated metal portion of the deck. Grand Valley Project, Colorado 3/13/2017



**Figure 80:** Longitudinal cracking along the wall of the A 21 ½ check structure. Grand Valley Project, Colorado 3/13/2017



**Figure 81:** Rust on the downstream side of the radial gate for the A 21 ½ check structure. Grand Valley Project, Colorado 3/2/2017



**Figure 82:** Rust on the mechanical portions of the A 21 ½ check structure. Grand Valley Project, Colorado 3/2/2017





**Figure 83:** Dirt around one of the bearings for the Adobe Wash flume. Grand Valley Project, Colorado 3/13/2017



**Figure 84:** Significant cracking along the abutment of the Adobe Wash O&M road. Grand Valley Project, Colorado 3/13/2017





**Figure 85:** Rust on the downstream end of the A27 check structure radial gate. Grand Valley Project, Colorado 3/2/2017



**Figure 86:** Erosion around the concrete wall of the A27 check structure. Grand Valley Project, Colorado 3/13/2017





**Figure 87:** Worn warning sign on the A27 check structure. Grand Valley Project, Colorado 3/13/2017



**Figure 88:** Little Salt Wash wasteway structure. Grand Valley Project, Colorado 3/13/2017





**Figure 89:** Little Salt Wash wasteway structure outlet channel. Grand Valley Project, Colorado  
3/2/2017



**Figure 90:** Vegetation encroaching on the Little Salt Wash channel. Grand Valley Project, Colorado 3/13/2017





**Figure 91:** Undercutting on the Little Salt Wash channel. Grand Valley Project, Colorado 3/13/2017



**Figure 92:** Little Salt Wash siphon. Grand Valley Project, Colorado 3/13/2017





**Figure 93:** Damaged railing around the Little Salt Wash siphon. Grand Valley Project, Colorado  
3/13/2017



**Figure 94:** Deteriorated concrete lining upstream of the Little Salt Wash siphon. Grand Valley  
Project, Colorado 3/13/2017



**Figure 95:** The gap between the masonry retaining wall and the siphon may indicate differential settlement. Grand Valley Project, Colorado 3/13/2017



**Figure 96:** O&M bridge over Little Salt Wash. Grand Valley Project, Colorado 3/13/2017





**Figure 97:** Decay was observed at several locations on the Little Salt Wash O&M bridge. Grand Valley Project, Colorado 3/13/2017



**Figure 98:** Spalling on the Little Salt Wash O&M bridge abutment. Grand Valley Project, Colorado 3/13/2017





**Figure 99:** A32 check structure. Grand Valley Project, Colorado 3/2/2017



**Figure 100:** Possible movement of the wing walls of the A32 check structure. Grand Valley Project, Colorado 3/13/2017

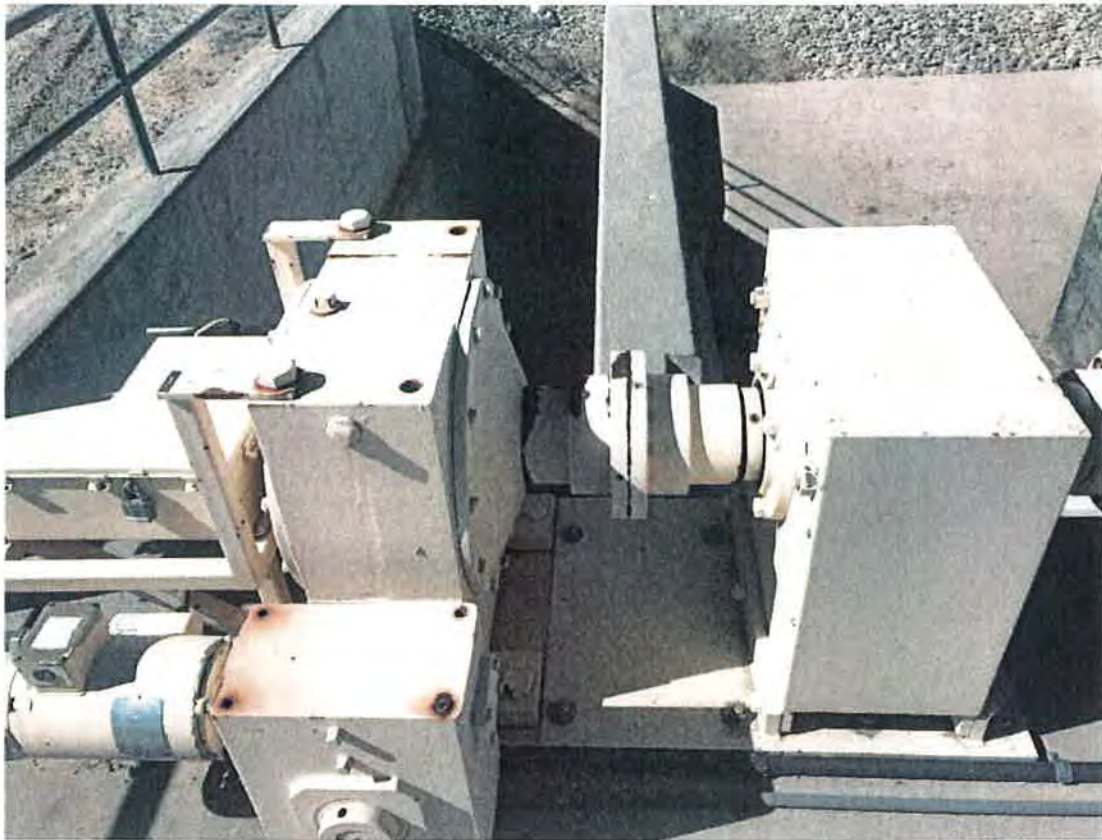


**Figure 101:** Possible movement of the wing walls of the A32 check structure. Grand Valley Project, Colorado 3/13/2017



**Figure 102:** Rust on the downstream side of the A32 check structure radial gate. Grand Valley Project, Colorado 3/2/2017





**Figure 103:** Rust on the mechanical portions of the A32 check structure. Grand Valley Project, Colorado 3/2/2017