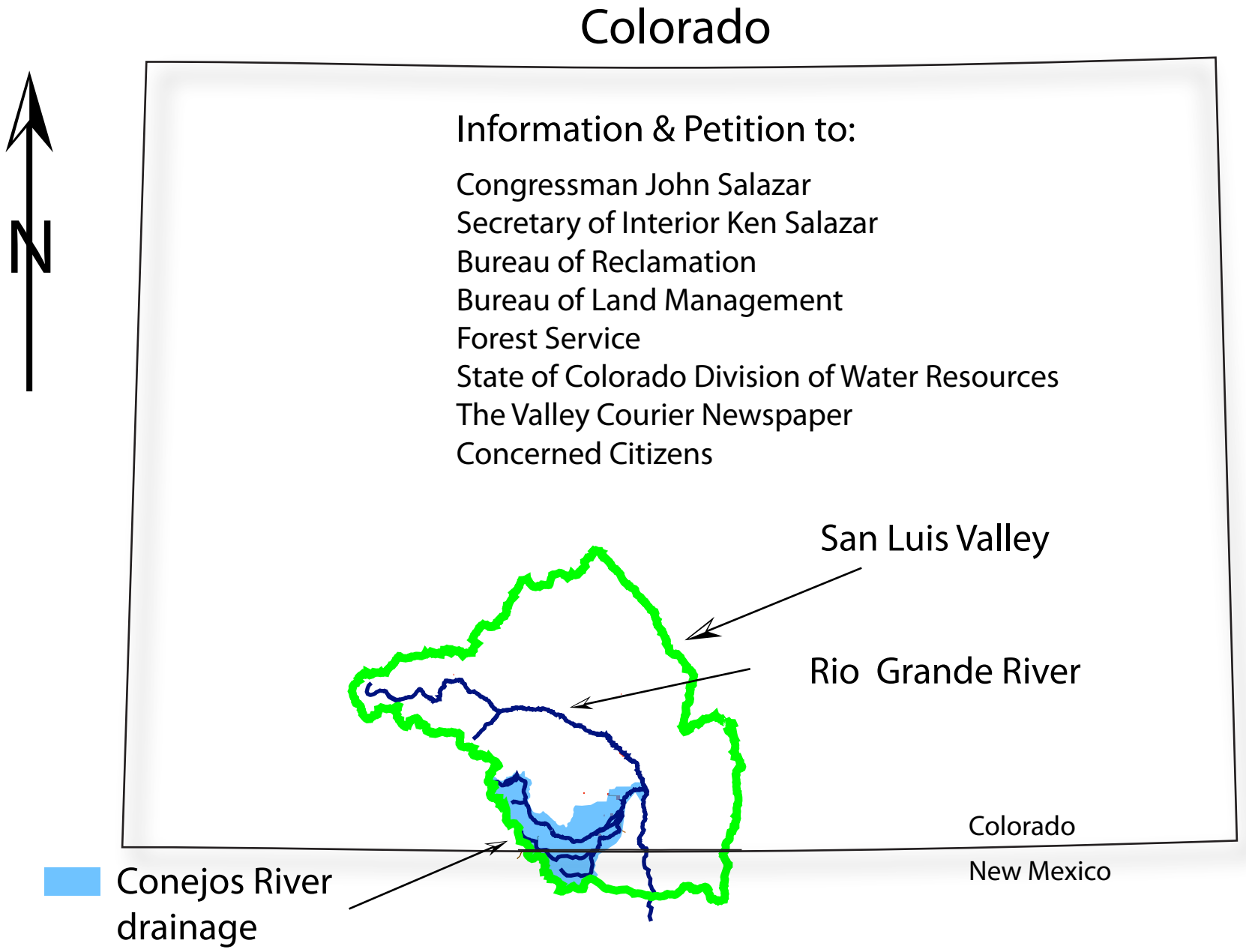
Conejos Water Conservancy District



Within the high mountains of Colorodo

exists a resource base which might constitute the heart of American values.

- Clean Air
- Pure Water
- Fertile Soil
- Sunshine

- and Small Friendly Towns

The weak links in this Rockwellian picture consists of two things:

1- **Finance:** For the most part, residents of the San Luis Valley are not rich. In fact, Conejos and Costilla Counties usually rank within the 12 poorest in the United States.

2- **Water:** Our water and reservoir resource consists of six values:

- Purity --- Not a problem.
- Abundance --- Always a problem, but conservation & the graces of nature usually provide.
- Timing --- A problem which Platoro Reservoir solves for both irrigation & flood control.
- Recreation and Environment --- Platoro enhances the Conejos fishery & tourism significantly.
- Regulating the InterState Compact ---- Platoro has become integral to the regulation/delivery of Compact water.
- Groundwater aquifers ---- Since the depletion of these aquifers has become an extreme issue, the regulation of surface flows takes on added significance.

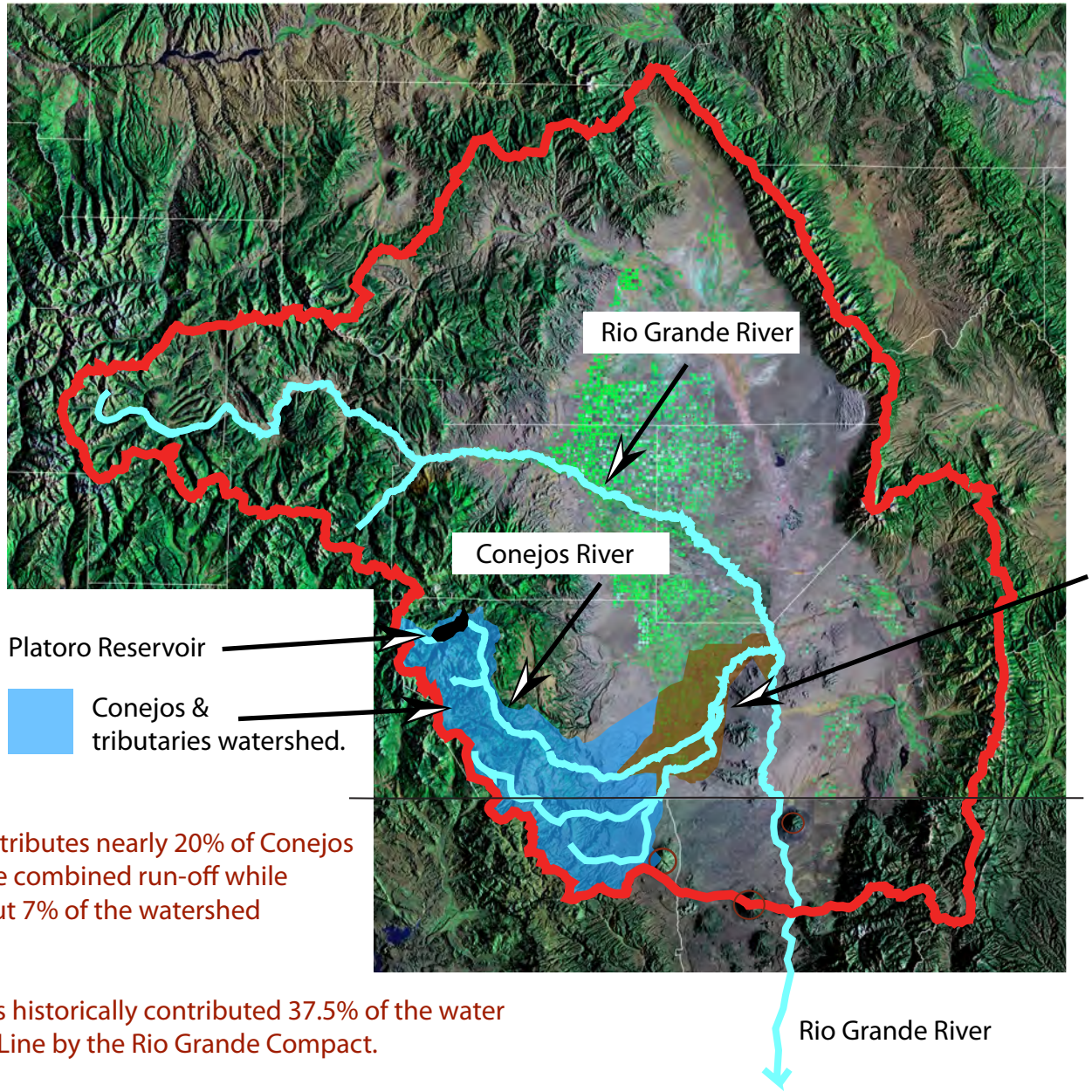
Repairs and Construction are necessary to keep the reservoir operating.

The Conejos Water Conservancy District petitions the following request.

In order to complete this work, we are not asking for more money. We are simply asking for the right to use money already allocated, to do the job for which it was originally intended.

In order to achieve that end, the District has put together the following history and facts.

San Luis Valley of Colorado



Platoro Reservoir contributes nearly 20% of Conejos Los Pinos, San Antone combined run-off while making up only about 7% of the watershed landbase.

The Conejos River has historically contributed 37.5% of the water required at the State Line by the Rio Grande Compact.

A quick History of the Conejos area of the San Luis Valley

Settlers arrived and started irrigating in the 1840's

The first water right was granted in 1855.

Starting in the 1800's, San Luis Valley residents were seeking to build a reservoir in order to extend their irrigation season and to control flooding.
In 1905 residents sponsored a survey to locate an appropriate dam site. This survey was initiated by Antone Jacobs of Romeo.

The Conejos River flooded in 1911. It is estimated that over 8,000 cfs ran through the Mogote area. No gaging station readings were possible since water ran over the top and submerged the station.

Another flood took place in 1941 →
as shown on this photo east of Sanford.

1905 - 1940

Plans and talk regarding building the reservoir proceeded for many years but actual work was always hindered; first World War I got in the way, followed by the Great Depression of the 1930's.

Finally, in 1940 Colorado Court was petitioned for the purpose of organizing a Conejos Water Conservancy District. On Sept. 30, 1940 Judge Palmer signed the order creating what was only the second such district created in the State up to that time. This District was necessary in order to provide a local sponsor for Federal funding and oversight regarding the construction and operation of the Platoro Dam.

Two things caused problems:

1- Just one year previous (1939) Colorado entered, with the States of New Mexico and Texas, into what is known as "The Rio Grande Compact." This law put severe restrictions on how the reservoir could store and discharge water.

2- World War II (1941-1945) delayed everything.

In 1949 Progress was made.

A Contract is Signed

On March 31, 1949 a contract (officially ILR-1529) between the Conejos Water Conservancy District (called San Luis Valley Project) and the United States of America (Bureau of Reclamation) authorized the construction of Platoro Dam.

Four Principle Contract Agreement Points:

- Estimated cost for building the dam was $4,200,000. Of this amount, 40% ($1,680,000) was to be allocated as flood control and therefore would be the responsibility of the US government.
- The remaining 60% ($2,520,000) would be the responsibility of the Conejos District to be paid over 40 years. By the time it was over, the actual amount came to $2,327,740.
- The District was to pay 60% of the operations and maintenance costs.
- There was to be a period of time called the "Developmental Period" which would last for five years. During this time the District was granted a reprieve from any obligations or payments. This period was to work out the bugs and get things working smoothly.

The Reservoir is Built

- Platoro Reservoir was completed in September of 1951, which was one year ahead of schedule and under budget.

- It went over the spill-way in the Spring of 1952 and then set basically idle for 33 years.

Reservoir non-use Story

This non-use of the reservoir was the result of two things:

1- Mostly dry years from 1952 till 1985.

2- The Rio Grande Compact

- Under this agreement a percent of Conejos and Rio Grande waters (depending upon the wetness of the year) had to be sent down stream to Elephant Butte Reservoir. We were not sending enough. In 1968 Texas and New Mexico sued Colorado; after which more water was sent down the river to try and pay the debt. In 1985 Elephant Butte water went over its spillway and the debt was cancelled.

- The other real problem during these years consisted in Article VII of the Compact which states:
  "Neither Colorado nor New Mexico shall increase the amount of water in storage in reservoirs constructed after 1929 whenever there is less than 400,000 acre feet of usable water in project storage;"
  Between 1952 and 1985, the reservoir could not be used for the purpose of irrigation because of the Compact debt, and because Elephant Butte did not generally contain more than 400,000 acre feet of storage water.

All that changed in 1985 when Elephant Butte went over the spillway. Now for the first time in 33 years, the reservoir was in a position to benefit valley farmers!

Now the bad news ---- arguments over money, debt and the Contract.

Tug of War with the Bureau

In summary, the Conejos Water Conservancy District received virtually no benefit from the Platoro Reservoir for the first thirty three years of its existence. Also, it paid out no money as the five year "Developmental Period" was never initiated.

But the Bureau didn't see it that way

During the two wet years (1957-1958) the bureau wanted the District to start paying its 60% O & M obligation and start paying on the $2.33 million purchase price. The District argued that the five year development period hadn't started. The argument was put on the back burner as the dry years of the 60s, 70s & early 80s resumed.

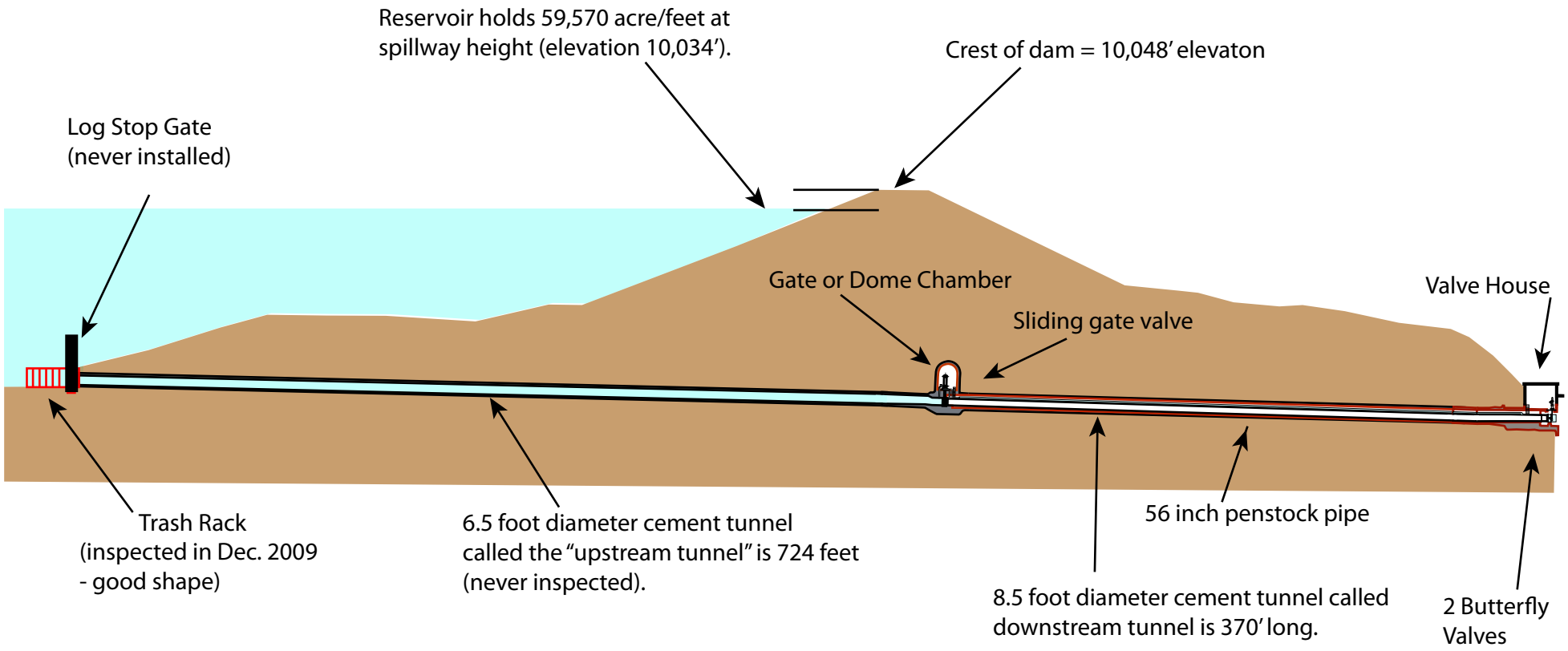
Elephant Butte spilled in 1985. The Bureau then wanted the District to immediately start paying its 60% O&M money and to also start paying on the $2.33 million original purchase. Again, the District maintained that the five year "Developmental Period" only started in 1985 and had five years to go.

To make a long story short and to keep the details to a minimum, there were numerous disputes between the District and the Bureau between 1985 and 1993. It was finally decided that if the District would pay $450,000, the Bureau would end the original debt of 2.33 million as well as disputes about Operations and Maintenance charges during all these years. This figure included the fact that the reservoir in 1994 had already expended 42 years of its 75 year life-span and the Bureau would retain title. It was also emphasized that farmers had received virtually no benefit from this reservoir until 1985 (See Bob Robins History of the Conejos Water Conservancy District for detailed information).

So the District took over Operations and Maintenance in 1994. The next question is, "what did we get for our money at that time?"
The next few pages will discuss the components of the reservoir and its history of maintenance.

Technical Specifications

Dam Profile



Dome Room

Center Gate Sliding Valve and 8 inch Bypass

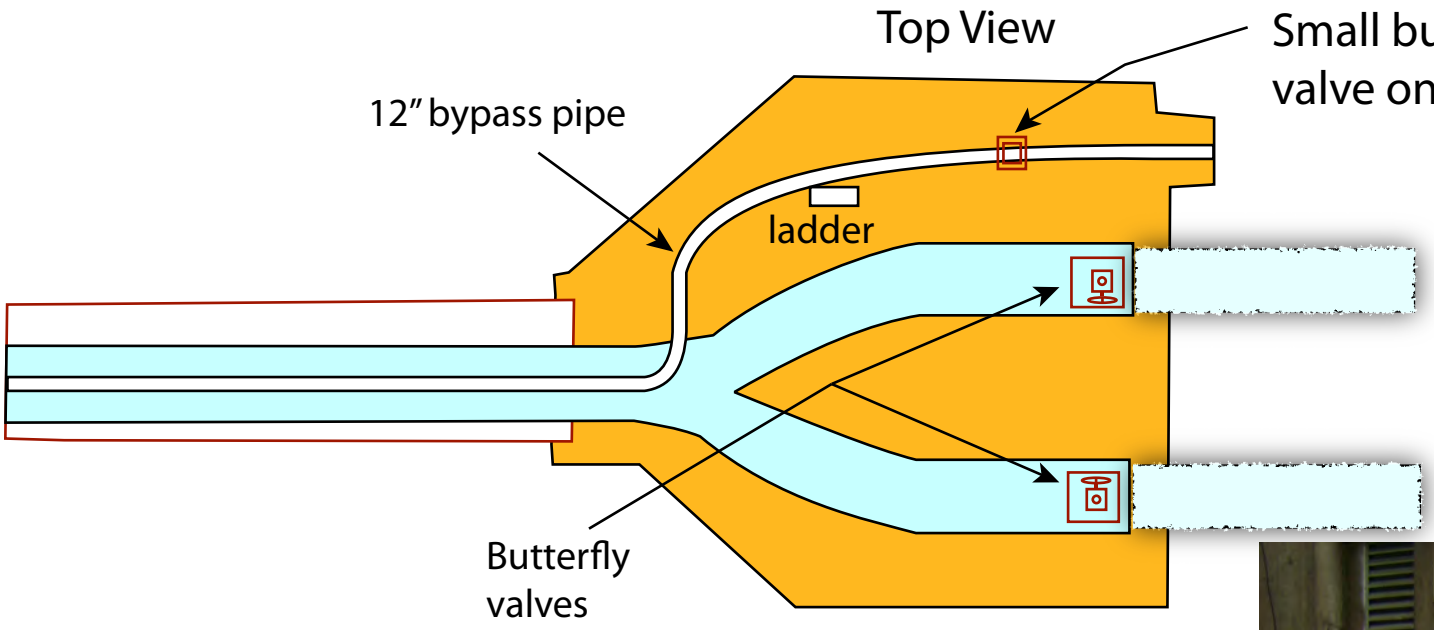
View looking towards the north

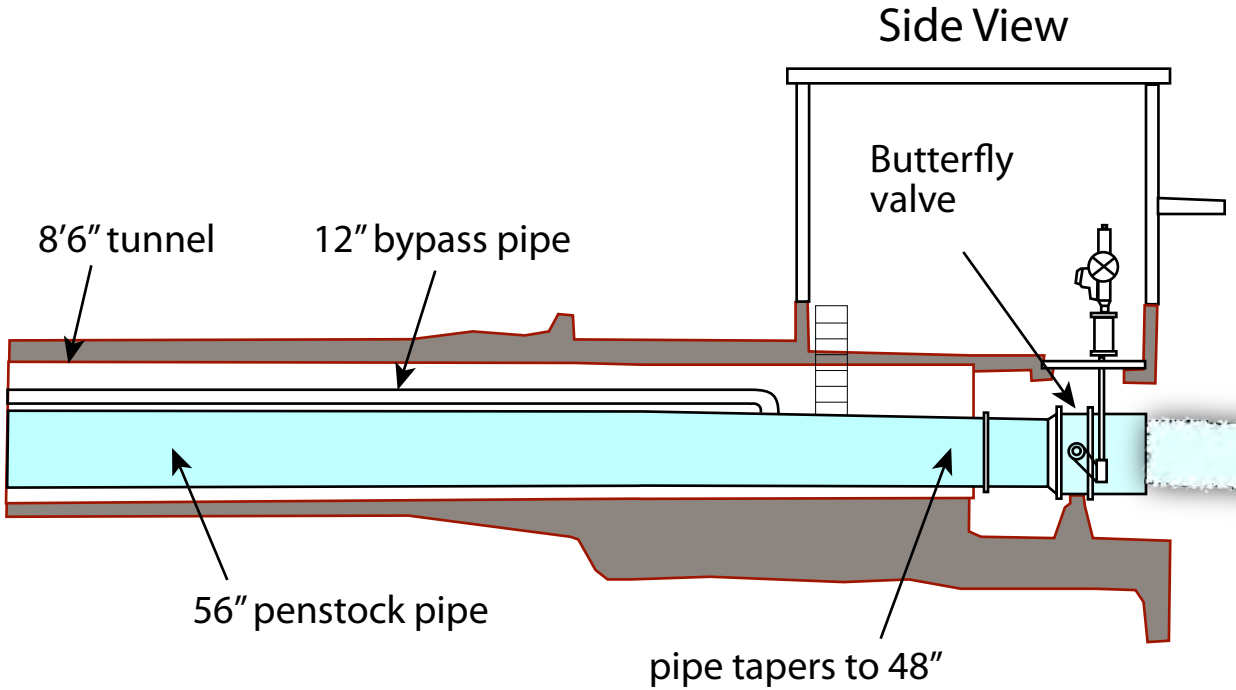
Scale = 1:200

Construction & maintenance costs for 2008

- A 12 inch bypass pipe was installed. Construction costs were $157,459, all of which was paid by the District.
- Interior of the 56 inch pipe was repainted. This cost $260,238 of which the Bureau provided $84,000 direct. They also spent a separate $16,000 for overhead fees.

Valve House


Top View
Small butterfly valve on 12″ pipe
12″ bypass pipe
ladder
Butterfly valves


Side View
Butterfly valve
8′6″ tunnel
12″ bypass pipe
56″ penstock pipe
pipe tapers to 48″

Maintenance & Inspections divided between pre and post 1994.

There are fourteen components to the dam/reservoir system that can be considered major.
These are listed in the left column.
The dam is inspected every 3 years.
Comments in red recommend action.

Component	Comments & Recommendations	Work Performed
Reservoir itself Pre 1994	Reservoir has no silting problems. Potential avalanche shows no high risk areas (1980, 1983, 1992). In 1986, it was recommended that a siesmotectonic study regarding potential earthquake damage be conducted.	
Post 1994	Usual inspections have found nothing noteworthy.	Siesmotectonic equivalence study was completed in 2001 (paid for by the Bureau).
Dam & Dike Pre 1994	Dam & Dike appear to be in excellent condition (1983). Rip-rap protection has worn some but is still adequate (1983). Seepage below the dam is considered to be from surface run-off and not from the reservoir itself (1980 & 1983). Continued monitoring is advise.	Seepage is continuously monitored.
Post 1994	Rip-rap has worn but is still adequate.	Seepage is continuously monitored and has not increased in 25 years.
Spillway Pre 1994	Concrete at spillway bridge is in excellent condition. However, some minor cracking on left abutment should be repaired (1980). A new Probable Maximum Flood (PMF) was approved in 1985. The spillway can only accommodate 55% of this flow. It is recommended that a study as to how to modify the dam & spillway be conducted (1986).	Dam & spill-way modification study complete (1989). No immediate action is recommended.
Post 1994	Usual inspections have found nothing noteworthy.	Completed in 2007

Component	Comments & Recommendations	Work Performed
Trash Rack Pre 1994	Inspected in 1956. No Problems. Advised that it be inspected again in 1984 & 1992.	None
Post 1994		Inspected in 2001 & 2009 No problems.
Log-Stop Gate	Never installed	None
Upstream Tunnel	Never inspected because without the logstop gate, it is permanently flooded.	None
Dome Room	Cement is in good condition except for some minor cracks.	None
Emergency Gate Valve Pre 1994	Slight bend (2" over 5') in upper control is not considered to be a problem (1980-1983). It is recommended that a remote control of the high pressure emergency gate be provided (1989).	None
Post 1994	The Bureau recommends fixing the emergency gate stem (2" over 5') lean though nothing has changed, and for the past 30 years it was not considered significant (2001).	None
8" air relief valve Pre 1994	Old air vent (2") is considered inadequate in 1980 and wouldn't work in 1983. Recommend that it be replace by an 8" vent.	New 8" combination air-vacuum/ air release valve was installed in 1984.
Post 1994	Working good on all inspections	Vent holes are cleaned yearly during inspections.
8" bypass filler-pipe and valve. Pre 1994	Gate valve on the 8" pipe is considered inadequate to gage 10 cfs of flow. A butterfly valve is recommended; (1980).	Butterfly valve added in Dome House (1983).
Post 1994	Valve working good but 8 inch pipe is good as a filler pipe for the 56" penstock and not for a continual 7cfs winter time flow. New Jet-Flow valves will replace this need.	Work scheduled for 2011.

Component	Comments & Recommendations	Work Performed
12" bypass pipe & valve Pre 1994	Not installed or thought of. The purpose of this pipe is to allow the 7 cfs of winter flows to continue while the 56" penstock is being repaired.	
Post 1994	In order to clean and paint the 56" valve, a 12" bypass pipe must be installed. This is scheduled for 2008.	Completed in 2008.
Down Stream Tunnel	Concrete is in good shape with a few minor seeps from joints and cracks.	None
56" Penstock Pre 1994	Exterior of pipe is good. Some spot painting on interior is recommended. Also, a thorough examination of pipe interior is recommended. The interior coating of the exposed steel areas at the bifurcation, the downstream access hole, and the transition of the 56 inch conduit should be repaired (1986). Exterior coating is stated to be in good condition (1992).	None Complete (1989)
Post 1994	Recommend that the interior be cleaned and all corroded areas be re-coated (1998). In 2001 it is counter-recommended that it only be inspected. Year 2004 inspection determined that the pipe needs cleaned and repainted.	Detailed examination of the interior was conducted in 2004. Interior of pipe is completely cleaned and repainted in 2008.
Butterfly Valves Pre 1994	Both valves vibrate and even pound when opened more than 92% (1980). Advised to repair interior & exterior of butterfly valves in 1980. Both valves seemed okay in 1983 when opened to 92%. There is an abrupt increase in cavitation-induced vibration between 80 & 90%. open. Advised to repair interior and exterior of 48" butterfly valves at outlet works. It is advised that valves not be opened more than 70%.	None Interior and exterior of 48" butterfly valves are repaired (1989) & cavitation problems are fixed by limiting valve opening.
Post 1994	Concrete pedestals supporting butterfly valves should be repaired (2001). Butterfly valves are to be replaced with Jet-Flow valves in 2010.	Pedestals were repaired in 2008.

Maintenance Summary

It appears that all aspects of the dam were in working order when the Conejos Water Conservancy took over O&M operations in 1994. However there are a few items of note:

- It was recommended that a detailed siesmotectonic study regarding potential earthquake damage be conducted as long ago as 1986. This wasn't done until 2001.
- The trash-rack was not inspected from 1956 until 2000. The District just inspected it again in 2009.
- A remote control of the high pressure emergency gate was advised in 1986 but wasn't installed.
- The butterfly valves are in working order but with a reduced rate of only 70% with elevation pressures over 9,980 feet and 80% when less.

In 2007 a major maintenance & construction program was initiated which consisted of six parts. |it would require a lot of money and effort. The next pages deal with the progress of that program.

Year 2007 --- Six major maintenance & construction projects needing done.

1- Install a 12" bypass pipe & valve so that the winter time 7cfs flow can bypass the 56" penstock. This is so the penstock can be repaired. Completed

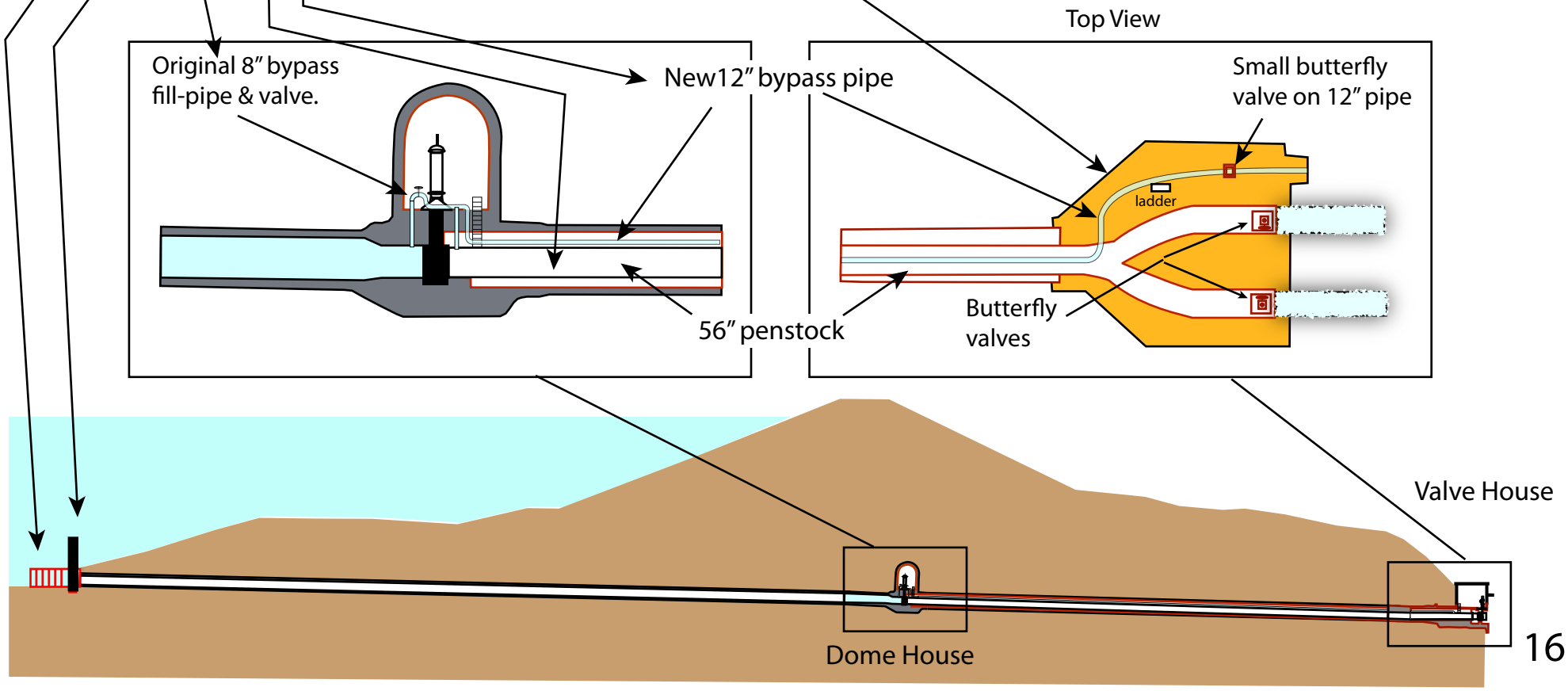
2- Repair the interior of the 56" penstock by removing the rust and painting it. Completed

3- Inspect trash-rack and possibly repair it. Completed

4- Install Log-Stop gate.

5- Install a new valve and 12 inch pipe to replace the 8" filler pipe bypass. Eight inches is not enough to handle 7cfs winter flow rates without cavitation, and the butterfly valves ice over when directing that small of flow.

6- Replace the two butterfly valves.



December 2009 Status of these Six Projects

1- Completed — A 12 inch bypass pipe & valves were installed. Costs were $157,459 - all of which was paid by the District.

2- Completed — The 56 inch penstock was repaired & painted. This cost $260,238. The District paid $177,038. The Bureau had $100,000 for the project. They paid $83,200 of the original $260,238 cost, and used the remainder ($16,800) for their overhead costs.

3- Completed — Trash-rack was inspected and found to be in good condition. This cost $10,548 which came as part of the $600,000 Federal appropriation through Congressman Salazar as shown on the next page.

4- for 2010 — Log-Stop gate is to be designed, purchased and installed in 2010. Private contractors will do this for $175,000 to $250,000. Bureau started on this project and want $575,000. They have been asked to stop work until a meeting with the Regional Director on January 20th.

5- Cancelled — Install new valves and 12 inch pipe to replace the 8 inch pipe & valves at the fill pipe. An 8 inch pipe requires a flow of 20.2 linear feet per second in order to handle 7 cfs of flow. This far exceeds the recommended 12 linear feet per second cavitation maximum and would be far worse if 10 cfs were someday required. The Bureau projected this to cost from $450,000 to $500,000.

6- for 2010 — The butterfly valves have outlived their useful life span and are to be replaced. These are to cost between $150,000 and $175,000 installed. See comments on next page about the change in this activity.

January 2010 Funding Status

Funding	Amount
Conejos Water Conservation District	$334,497 (actual)
Bureau of Reclamation	$83,200 (actual) -- Bureau also incurred $16,800 for "in house" costs.
Federal money through Congressman John Salazar	$600,000
State Fund money	$250,000
Federal money through BLM	$50,000
Total	$1,317,697

Item	Expense	Original Projected Costs
1-	12 inch bypass pipe and valves installed.	$157,459 (actual cost)
2-	56 inch penstock repaired and painted.	$260,238 (actual cost)
3-	Inspect trash-rack. No repair is needed.	$10,548 (actual cost)
4-	Construct & install Log-Stop gate.	$250,000 (possibly $175,000)
5-	Install a new valve and 12 inch pipe to replace the 8 inch pipe at the emergency bypass.	$500,000 (possibly $450,000)
6-	Purchase & install the two butterfly valves.	$175,000 (possibly $150,000)
	Total	$1,353,245 *

* $35,548 overflow is accepted because items 4-6 are considered to be maximum & not probable costs.

In January 2010, some new situations developed.

A Bureau insisted that butterfly valves without the rubber seal be installed. Such valves are no longer manufactured. The Bureau then recommended Jet-Flow valves which cost between $410,000 and $510,000 as apposed to the original projected cost of $175,000 for the butterfly valves.

B The good news is that with these Jet-Flow valves, the replacement of the 8" fill-pipe bypass system would not be required, thus saving $500,000.

C The Bureau spent $50,000 of BLM money to design the Jet-Flow valves. $40,000 went to design and $10,000 went to Bureau overhead. They informed us that this actually cost them $120,000.

D The Bureau priced out the Log-Stop gate and declared that design, manufacture and installation will cost $575,000 (private contractors quote about $250,000).

E Bureau refuses to allow any of the $600,000 to be used for valves because it designates this work to be Operations and Maintenance (O&M).

F In the Bureau's scenario, nearly all of the original $600,000 is to be used for the Log-Stop gate; leaving nothing for work on the Jet-Flow valves. Even if the Conejos Conservancy District installed the Log-Stop gate using a private contractor (thus freeing $325,000), the Bureau will not let the District use this money for valves because of their O&M definition.

→ By going with the Conejos Water Conservancy's revised plan, the total project would save **$165,000** from the initial projected cost. There will also be **$129,452** left over from the original $600,000 grant.

→ By going with the Bureau's revised plan, the total project will cost **$160,000** more than the initial projected cost and **$210,000** more than their own revised plan.

See next two pages for a diagram of these scenarios.

Project Completion Diagram (Bureau of Reclamation Projection)

Report shows Bureau of Reclamation figures along with cost projections of new Jet-Flow valves.

Item	Description	Original Projected Costs	Revised Bureau of Reclamation Projection[3]	Costs	From $600,000 grant	From State	From BLM	Bureau of Reclamation	Conejos Water Conservancy
1-	12" Bypass pipe	$157,459	Project Completed	$157,459	$0	$0	$0	$0	$157,459
2-	56" Penstock repair	$260,238	Project Completed	$260,238	$0	$0	$0	$83,200[1]	$177,038
3-	Inspect trash-rack.	$10,548	Project Completed	$10,548	$10,548	$0	$0	$0	$0
4-	Install Log-Stop gate.	$250,000	(Other $25,000 of the original $600,000 is not allowed to be used)	$575,000	$575,000	$0	$0	$0	$0
5-	Replace fill pipe and valves with 12 inch.	$500,000	(Cancelled because of Jet-Flow valves.)	$0	$0	$0	$0	$0	$0
6-	Purchase & install butterfly valves. Now - design, purchase and install Jet-Flow valves.	$175,000	(possibly as low as $410,000)	$510,000	$0	$250,000	$50,000	See note 2	$0
	Total	**$1,353,245**		**$1,513,245**	**$585,548**	**$250,000**	**$50,000**	**$83,200**	**$334,497**

This is $160,000 more than the original projection

Total of all Funding Sources = $1,303,245

We would need this.

When we max-out our funding sources we have this.

Difference is that we would need an additional $210,000.

Note 1 - Bureau also spent an additional $16,800 for internal overhead expense. This is not counted here as it was not in the original projection.
Note 2 - Bureau informed us that they spent an additional $70,000 internally for this study. This is also not counted here as it was not in the original projection.
Note 3 - This Bureau Projection comes from revised figures that are not in dispute, and was put together by G. Miller and not the Bureau of Reclamation.

Project Completion Diagram (Conejos Conservancy Projection)

Item	Description	Original Projected Costs	Revised Conejos Conservancy Projection		From $600,000 Fund	From State (see note 1)	From BLM	Bureau of Reclamation	Conejos Water Conservancy
1-	12" Bypass pipe	$157,459	Project Completed	$157,459	$0	$0	$0	$0	$157,459
2-	56" Penstock repair	$260,238	Project Completed	$260,238	$0	$0	$0	$83,200	$177,038
3-	Inspect trash-rack.	$10,548	Project Completed	$10,548	$10,548	$0	$0	$0	$0
4-	Install Log-Stop gate.	$250,000	Private Contractor	$250,000	$250,000	$0	$0	$0	$0
5-	Replace fill pipe and valves with 12 inch.	$500,000	(Cancelled because of Jet-Flow valves.)	$0	$0	$0	$0	$0	$0
6-	Purchase & install butterfly valves. Now - design, purchase and install Jet-Flow valves.	$175,000	(possibly as low as $410,000)	$510,000	$210,000	$250,000	$50,000	$0	$0
	Total	**$1,353,245**		**$1,188,245**	**$470,548**	**$250,000**	**$50,000**	**$83,200**	**$334,497**

<u>This is $165,000 less</u> than the original projection

Total used from Funding Sources = $1,188,245

We would need this. When we use what we need of our funding sources we have this.

Difference is that we would need an additional $0.00, but would <u>have $129,452 left over</u> in the $600,000 grant fund.

Note 1 - These Funds must be spent before the end of December 2010 or they will revert back to the State.

Values

The Conejos Conservancy is resolved to act according to principle.
Three of these are:

- Fiscal responsibility and getting the most bang for the buck.
- Making sure of operational safety and infrastructure conditions.
- Creating and maintaining the integrity and sustainability of the environment.

Why we must act quickly.

→ It is unsafe to continue to use the 8" fill-pipe to handle the 7cfs of winter time flow --- a job it was never designed for. In fact, we want to work with the BLM and others to possibly increase this flow to 10cfs. However, since the butterfly valves on the penstock freeze up and cannot be used to regulate this flow; we must continue this unwise practice -- or -- cease this winter flow and risk damaging the fragile environment and fishery on the upper Conejos River. Our desire is to help the BLM, Forest Service and DOW as much as possible to protect, regenerate, and sustain this environment, but we need the resources to do so.

→ The 8" fill-pipe inlet portion from the cement tunnel (and its associated gate-valve) have existed under decades of cavitation and abuse. It will not last. Bureau engineers agree with this. Alternative to this is to return the 8" fill-pipe to its designated use and install the proposed Jet-Flow valves.

→ The 720 foot cement inlet tunnel has never been inspected in the 59 year history of the reservoir. It is unwise for us to remain in the dark as to its condition.

→ There is urgency in that the State $250,000 must be spent before the end of 2010 or it reverts back to government coffers.

In Summary

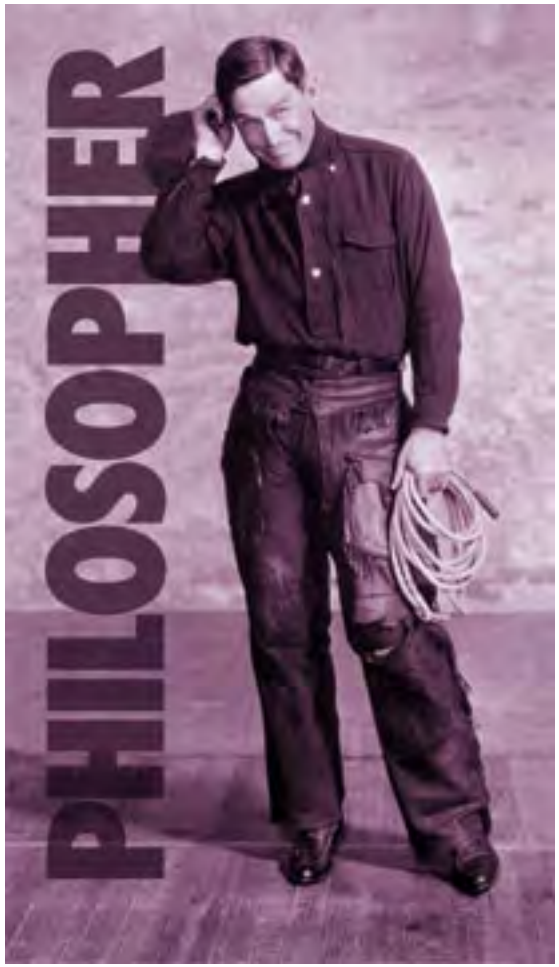
In reviewing the history of the Conservancy District, this writer noticed years (actually decades) of on-going conflict between the District and the Bureau.

Will Rogers stated that he had given a lot of thought as to what it means to be a Gentleman. He concluded that "a Gentleman cares deeply about the feelings of others." I'm sure it is the same with a Lady.

Though often difficult, as frustrations arise, all whom I know in the Conservancy are committed to being gentleman. This means trying to understand the values and obligations of others (specifically the Bureau), not just as a superficial bit of play-acting, but sincerely.

So in the spirit of this ethic, it must be accepted that perhaps the Bureau is doing, and has done all it can. Perhaps it has gone above the call of duty; perhaps it has worked to reduce and simplify obstacles and not create or amplify them. Perhaps we have not seen or appreciated this. If so, then speaking on behalf of the gentlemen in the Conservancy District, I apologize.

In the future, perhaps we can come to an accord regarding our situation, and perhaps we cannot. The important thing in the end is how we treat each other as men.



Thank You for viewing this slide-show.

Glen Miller (Conejos Conservancy Director)