LITTLE SNAKE RIVER
WATER MANAGEMENT PROJECT

EXAMINATION
OF
ALTERNATIVES

PRELIMINARY REPORT

WYOMING
WATER DEVELOPMENT COMMISSION

OCTOBER 1981
LITTLE SNAKE RIVER
WATER MANAGEMENT PROJECT

EXAMINATION OF ALTERNATIVES

PREPARED BY
WYOMING WATER DEVELOPMENT COMMISSION

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INTRODUCTION

The 1979 Wyoming Legislature passed Enrolled Act No. 49 which called for a water management study of the Little Snake River, authorized Stage II of the Cheyenne Water Project, and defined Stage III. The Enrolled Act defines "Stage III" as:

"... a transbasin diversion of water from the headwater of the Little Snake River and its tributaries on the western side of the Continental Divide north and west of stage I and stage II. Stage III proposes to construct storage structures to increase storage for in-basin use and to construct interception lines and diversion and collection structures to increase availability of water for transportation of water across the Continental Divide from the Little Snake River drainage into the North Platte River system, and increase storage and availability of water for use by cities, towns, and other water users located in Carbon, Albany, Natrona, Converse, Niobrara, Goshen, Platte, and Laramie Counties. . . ."

In 1980 the Wyoming Legislature appropriated monies and directed the Wyoming Water Development Commission to prepare a feasibility study and preliminary engineering plans for Stage III of the Little Snake River Water Management Project. Pursuant to these objectives, the Wyoming Water Development Commission selected the firm of Banner Associates, Inc. to conduct a feasibility study of a system to provide water for transbasin diversion as well as providing in-basin storage sufficient to meet projected demands. The Wyoming Water Development Commission also contracted the services of the Wyoming Game and Fish Department to supplement the Banner study by identifying and enumerating populations of fish inhabiting the various streams within the study area.

Under the coordination of WWDC, the Banner report entitled "Little Snake River Water Management Project - Feasibility Study" was completed in November, 1980. The timing made it impossible to digest the contents of the report, hold public hearings, and formulate recommendations to the legislature when it convened in 1981.

The 1981 Wyoming Legislature approved a footnote on the appropriation bill identifying $5,000,000 to be used by the WWDC to prepare final plans and specification for the Stage III project defined in W.S. 41-2-204(a)(iv). The exact items to be pursued by expenditures of these funds are more particularly defined as follows:

An additional five million dollars ($5,000,000.00) is appropriated from the Water Development Account under W.S. 39-6-305(g) to be expended by the Wyoming Water Development Commission to obtain water permits, plan methods of funding, develop plans and specifications and perform geological and other studies and investigation necessary to expedite the Stage III project defined in W.S. 41-2-204(a)(iv). The plans and specifications shall be developed for the Battle Creek to Jack Creek Collection System and Pipelines, Jack Creek Reservoir and Jack Creek to North Platte River Pipeline and Upper Savery Reservoir. Any city, town or special district contributing to the costs under this section shall be included within the option.
to purchase Stage III water as described by Section 2, Chapter 72, Session Laws of Wyoming 1980.

In April, 1981 the WWDC held public hearings in Casper, Rawlins, Baggs, and Rock Springs for the purpose of receiving input from those citizens affected by the proposed projects. Many objections, corrections, and alternative recommendations were voiced as well as support for the proposed projects. In an effort to comply with the enacted legislation and to respond to comments from the affected public, the Wyoming Water Development Commission has prepared this supplementary report. In this report WWDC has attempted to outline all of the Stage III alternatives by identifying the system recommended in the Banner report and those alternatives which have been developed by WWDC in response to public input.

Embodied in this report are summaries of four alternatives, each of which will comply with legislative directive in that all provide in-basin storage as well as out-of-basin transfer of water. The costs, amounts of water produced, and environmental involvement vary from alternative to alternative. The WWDC will hold another set of public hearings before formulating any recommendations to the legislature.

In analyzing these alternatives, please keep in mind that the projected costs for water in this report do not reflect the following items:

. The final cost to each consumer is dependent upon the amount of State assistance and on the actual type of financing utilized in developing the project.

. Those alternatives with the capacity to provide for municipal as well as industrial and agricultural water contain no price disparity for industry. Industrial users could pay an increased rate for water and thus lessen the cost to municipalities and agriculture.

Any questions or comments should be directed to the Wyoming Water Development Commission, 4th Floor, Barrett Building, Cheyenne, Wyoming 82002. Extra copies of this report are available upon request.
ALTERNATIVE A

The elements composing this alternative are those recommended in the "Little Snake River Water Management Project - Feasibility Study." The main elements involved are:

. Battle Creek to Jack Creek Collection System -
   This system is a pipeline thirty-eight (38) miles in length. It begins near the old town site of Rambler with a 24-inch diameter concrete pipe. The system then continues in a northwesterly direction accumulating collected water and increasing in size until it reaches the proposed tunnel through the Continental Divide.

. Upper Jack Creek Reservoir -
   This reservoir would be located on Jack Creek within the National Forest. As proposed, the dam would have an active storage capacity of 38,160 acre-feet. The high water level would inundate about 735 acres including much of Jack Creek Park.

. Jack Creek to North Platte River Pipeline -
   This pipeline would intercept water released from Jack Creek Reservoir and transmit it 17.5 miles to the North Platte River. This is necessary to minimize erosion on the lower reaches of Jack Creek.

. Upper Savery Reservoir -
   This reservoir which will be constructed on the upper end of Savery Creek will not provide water for out-of-basin transfer in this alternative, but rather will provide a supplemental supply of water for in-basin needs.

If it is developed, this alternative will collect 30,000 acre-feet of water per year and deliver it to Jack Creek Reservoir by way of the Battle Creek to Jack Creek Collection System. Water would be released from Jack Creek Reservoir and into the North Platte River where it will be available to project participants.
ALTERNATIVE A

Battle Creek to Jack Creek Collector with Upper Jack Creek Reservoir Site

Construction Costs

1) Collection System and Tunnel $ 77,199,124
2) Jack Creek Reservoir 19,000,000
3) Reservoir to North Platte Pipeline 7,300,000
4) EIS 500,000

SUBTOTAL $103,999,124

5) Upper Savery Reservoir 31,163,000

TOTAL $135,162,124

Annual Costs

- Annual Yield -- 30,000 acre-feet export, 22,450 acre-feet in-basin
- Conveyance Loss of 15% for 19,000 acre-feet
- Financing at 8½% interest for 40 years

1) Annual Debt Service¹ $ 9,191,442
2) O & M (2%) 2,079,982
3) In-Basin Storage (Agriculture & Municipal)² 751,666

Total Annual Cost $ 12,023,090

Annual Cost per acre-foot export (27,150) $442.84

Annual Cost per 1,000 gallons export $ 1.36

Cost to Rawlins:

a) Collector System, Tunnel, Reservoir, EIS $ 24,174,781
b) Pipeline from Jack Creek to Sage Creek $ 3,603,600
c) Pipeline from Sage Creek to Atlantic Rim $ 6,411,407

Total $ 34,189,788
### Annual Cost

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<tr>
<td>In-Basin Storage</td>
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<td><strong>Total Annual Cost</strong></td>
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<tr>
<td>Annual Cost per Acre-foot (7,500)</td>
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<td>Annual Cost per 1,000 gallons</td>
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### Cost to In-Basin Users

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<tr>
<td>Annual Cost</td>
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<tr>
<td>O &amp; M (2%)</td>
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<tr>
<td><strong>Total Annual Cost</strong></td>
<td><strong>$2,625,780</strong></td>
</tr>
<tr>
<td>Annual Cost per Acre-foot (16,323)</td>
<td><strong>$160.86</strong></td>
</tr>
<tr>
<td>Annual Cost per 1,000 gallons</td>
<td><strong>$.49</strong></td>
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1. Annual Debt Service payment is the total project cost ($103,999,124) multiplied by the capital recovery factor (.08838).

2. This is the cost of providing storage to compensate existing Wyoming agricultural and municipal use on Savery Creek and the Little Snake River.
ALTERNATIVE B

The key elements and general method of operation under this alternative are essentially the same as those for Alternative A. However, based upon input from the public hearings held in April, 1981, WWDC decided to consider replacing the reservoir identified in Alternative A with a reservoir which would be out of the National Forest and which would not inundate Jack Creek Park, a prominent recreation area.

To safeguard against erosion, a pipeline will be introduced to deliver water from the proposed tunnel to the backwaters of the Lower Jack Creek Reservoir. As it is proposed, the pipeline will traverse Jack Creek Park but should be less offensive than the reservoir originally proposed for this site.

This alternative, as Alternative A, would deliver 30,000 acre-feet per year to out-of-basin use, as well as provide for in-basin needs.
ALTERNATIVE B

Battle Creek to Jack Creek Collector with Lower Jack Creek Reservoir Site

Construction Costs

1) Collection System and Tunnel $ 77,199,124
2) Tunnel to Reservoir Pipeline 17,629,920
3) Lower Jack Creek Reservoir 13,297,513
4) Reservoir to North Platte River Pipeline 4,320,000
5) EIS 500,000

SUBTOTAL $112,946,567

6) Upper Savery Reservoir $ 31,163,000

TOTAL $144,109,567

Annual Costs

- Annual Yield -- 30,000 acre-feet export, 22,450 acre-feet in-basin
- Conveyance Loss 15% for 19,000 acre-feet
- Financing at 8.5% interest for 40 years

1) Annual Debt Service $ 9,982,217
2) O & M (2%) 2,258,931
3) In-Basin Storage 751,666

Total Annual Cost $ 12,992,814

Annual Cost per acre-foot (27,150) $478.56
Annual Cost per 1,000 gallons $ 1.47

Cost to Rawlins:

a) Collector System, Tunnel, Reservoir, EIS $ 27,156,639
b) Pipeline from Jack Creek to Sage Creek $ 3,088,800
c) Pipeline from Sage Creek to Atlantic Rim $ 6,411,407

Total $ 36,656,846
### Annual Cost

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<td><strong>Total Annual Cost</strong></td>
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<td>Annual Cost per Acre-foot (7,500)</td>
<td>$559.75</td>
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<td>Annual Cost per 1,000 gallons</td>
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**Cost to In-Basin Users:**

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<th>Description</th>
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<tr>
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<tr>
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<tr>
<td>Annual Cost per Acre-foot</td>
<td>$160.86</td>
</tr>
<tr>
<td>Annual Cost per 1,000 gallons</td>
<td>$0.49</td>
</tr>
</tbody>
</table>

<sup>1</sup>Annual Debt Service payment is the total project cost ($112,946,576) multiplied by the capital recovery factor (.08838).
The most inexact portion of Alternative A and Alternative B is the cost of tunneling under the Continental Divide to provide a passage where water can pass from the collector system into Jack Creek. The problems, costs, and hazards of tunneling are never completely identified until the task is underway. To alleviate this uncertainty, the WWDC considered alternate routes where water could flow by gravity from the collector system across the Continental Divide without requiring a tunnel. The route chosen in this alternative accomplishes this purpose.

During the course of this project it has been brought to the attention of the Commission that the City of Rawlins not only requires additional water but that an existing supply is in jeopardy due to the condition of an old wooden supply line. The routing selected here will deliver the water from the collector system to the North Platte River and will allow Rawlins the option of replacing its old line by paying the cost of enlarging the delivery line in this alternative.

More specifically, this alternative would deliver water by gravity from the collector system to the upper end of Sage Creek. A regulating reservoir would be constructed just downstream of the existing Rawlins Reservoir which would be inundated by the new impoundment. A second delivery line would be constructed from the new reservoir northward along the Sage Creek Road to near the Atlantic Rim Reservoir. This section of pipe has been designed and priced either to accommodate the projected Sage Creek supply available to Rawlins or to carry only the imported water. From the Rawlins Reservoir the delivery line would continue northeasterly past Sinclair and on to the North Platte River near the confluence of Sugar Creek.
ALTERNATIVE C

Modified Battle Creek to Jack Creek Collector with Sage Creek Delivery

**Construction Costs**

1) Modified Collector System $42,517,400
2) Collector to Sage Creek Pipeline 21,989,840
3) Sage Creek Reservoir 16,402,306
4) Reservoir to Atlantic Rim Pipeline 15,127,409
5) Atlantic Rim to North Platte Pipeline 6,007,570
6) EIS 500,000

**SUBTOTAL** $102,544,525

7) Upper Savery Reservoir $31,163,000

**TOTAL** $133,707,525

**Annual Costs**

. Annual Yield Collector System -- 30,000 acre-feet
. Annual Yield In-Basin -- 22,450 acre-feet
. Conveyance Loss 5% for 11,500 acre-feet
. Annual Yield of Sage Creek System -- 6,000 acre-feet
. Financing at 8½% interest for 40 years

1) Collector System (30,000 acre-feet) $42,517,400
   $1,417.25/acre-foot
   Rawlins: 7,500 x $1,417 = $10,629,350
   Other Users: 22,500 x $1,417 = $31,888,050

2) Collector to Sage Creek Pipeline $21,989,840
   $732.99/acre-foot
   Rawlins: 7,500 x $732.99 = $5,497,460
   Other Users: 22,500 x $732.99 = $16,492,380

3) New Rawlins Reservoir (36,000 acre-feet) $16,402,306
   $455.62/acre-foot
   Rawlins:
   a) Sage Creek Storage
      6,000 x $455.62 = $2,733,717
   b) Import Storage
      7,500 x $455.62 = $3,417,147
   Other Users: 22,500 x $455.62 = $10,251,442
4) Reservoir to Atlantic Rim Delivery System  $15,127,409
(82 cfs)
$184,481/cfs

Rawlins:
  a) Sage Creek Delivery
    9 cfs x $184,481 = $1,660,325
  b) Import Delivery
    31.3 cfs x $184,481 = $5,774,243

Other Users:
  41.7 cfs x $184,481 = $7,692,841

5) Rawlins to Platte River Delivery System  $6,007,570
22,500 acre-feet
$267/acre-foot

6) EIS (30,000 acre-feet)

$16.67/acre-foot

Rawlins: 7,500 x $16.67 = $125,000
Other Users: 22,500 x $16.67 = $375,000

Cost Totals

Rawlins:
  a) Sage Creek Water $4,394,042
  b) Import Water $25,443,200

Other Users: $72,707,283

Annual Costs

Rawlins:
  a) Sage Creek Water
     $4,394,142 x .08838
     + 4,394,042 x .02
     $476,225 Total Annual Cost $476,225
     Annual Cost per Acre-foot $476,225 : 6,000 $79.37
     Annual Cost per 1,000 gallons $79.37 : 325.8 $ .24

Note: The projected cost for Rawlins to replace their existing line to deliver 6,000 acre-feet per year is $6,411,407 plus reservoir enlargement costs.

b) Imported Water
     $25,443,200 x .08838
     + 25,443,200 x .02
     + 751,666 x 7500/30,000
     $2,945,451 Total Annual Cost $2,945,451
     Annual Cost per Acre-foot $2,945,451 : 7500 $392.73
     Annual Cost per 1,000 gallons $392.73 : 325.8 $1.21
Other Users:
$72,707,283 \times 0.08838$
$72,707,283 \times 0.02$
$751,666 \times 22,500/30,000$
$8,443,765 \text{ Total Annual Cost}$
$8,443,765 \div 21,925$\$385.12$
$8,443,765 \div 325.8$\$1.18$

Total Combined Cost for Rawlins
$0.24 \times 6,000 + 1.21 \times 7,500 = 1440 + 9,075 = 10,515 = \$0.78/1,000 \text{ gallons}$
$13,500 \div 13,500 \div 13,500$

In-Basin Users:

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<th>Description</th>
<th>Amount</th>
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<tr>
<td>Annual Cost</td>
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<tr>
<td>O &amp; M (2%)</td>
<td>$623,260</td>
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</tbody>
</table>

Total Annual Cost $2,625,780$
Annual Cost per Acre-foot (16,323) $160.86$
Annual Cost per 1,000 gallons $0.49$
Due to the many variations inherent in this alternative it has been separated into four subalternatives; I, II, III, and IV, based upon the amount of water made available by each proposal. Every proposal offered under Alternative D consists of the same basic elements. Assumptions as to the management of the system results in the four variations. The basic segments outlined in these alternatives are as follows:

. Upper Savery Reservoir -
   As proposed, this reservoir would be built on Savery Creek at the confluence of Bird Gulch and would have an average annual yield of 30,400 acre-feet. Storage would be used to supplement all permitted agriculture on Savery Creek below the dam, on the Little Snake River below the confluence of Savery Creek, and the excess, (approximately 18,600 acre-feet annually), would remain in the stream to the Town of Baggs where it would be diverted and pumped into a delivery line.

. Three Forks Reservoir -
   Located high on the Little Snake River near the confluence of the Roaring Fork, this reservoir is in an advantageous position to provide supplemental water for agriculture, industrial, and municipal needs along the Little Snake River. The projected yield from this reservoir is 102,800 acre-feet per year. Assumptions made as to the distribution of this water are the elements which dictate the four options to be discussed.

. Pump Stations -
   Three pump stations have been located to boost the water from the Little Snake River near Baggs to the Continental Divide. The pump stations will vary in cost and capacity from one option to another. The options of powering with electricity or natural gas have been explored under each alternative.

. Pipeline -
   The pipeline routing has been selected to follow the corridor established by the Exxon Pipeline Company for its proposed "LaSal Oil Line". The route begins at Baggs and proceeds north along the west side of Highway 789 to a point near the Overland Stage Monument. From this point the alignment crosses the highway, proceeds northeasterly across the Continental Divide, then northerly to Interstate 80 near the Riner Interchange. The pipeline will then turn eastward in an established corridor, past Rawlins to Sinclair and then to the North Platte River near Sugar Creek.

It should be noted here that since these alternatives are energy intensive, their feasibility is dependent on a maximum efficiency design. The pipeline sizes have been selected in conjunction with pump capacities and energy costs to provide the most cost effective system for the life of the project. These pipe sizes will not be universally applicable to all pumping quantities but rather are restricted to a range of quantities. However, this does not mean that a given system can only deliver the
specifically mentioned target quantity in each option. The system will be efficient with quantities higher and lower than those specified.

Though these alternatives are energy intensive and are unique by comparison to the aforementioned alternatives, they have been explored because they offer several amenities to both in-basin and out-of-basin users alike. These options do eliminate several points of controversy due to the location of the key elements of the system.

Unlike the other alternatives, the elements composing this proposal will all be located outside of the Medicine Bow National Forest. This will eliminate the requirement of an environmental impact statement to address the effects on the National Forest. By virtue of utilizing two lower basin reservoirs to regulate the delivery of water, those small tributaries and headwaters of the basin will remain in a virgin state, while yearlong releases from the reservoirs will enhance streamflows and provide flood protection in Savery Creek and the Little Snake River.

This system has the capability of producing hydroelectric power from both reservoirs as well as from the pipeline on the east side of the Continental Divide. Revenues from the sale of such power could be used to offset the pumping costs associated with the operation of the system.

The management of this type of system will develop a surplus of available water which need not be committed to either in-basin or out-of-basin use until such time as an established need is identified. It is believed that when all aspects of these options are examined that the merits of the system deem it worthy of consideration.

ALTERNATIVE D-I

This alternative is intended to provide 30,000 acre-feet annually to serve as a means of comparison with Alternatives A, B, and C. The system will generate 115,900 acre-feet per year; 85,500 acre-feet from Three Forks Reservoir and 30,400 acre-feet from Upper Savery Reservoir. After supplying 18,768 acre-feet to supplement permitted agricultural rights and projected municipal growth, 30,000 acre-feet for out-of-basin transfer and 3,000 acre-feet for conveyance losses; there remains 64,132 acre-feet available for use within the drainage. If this alternative was fully developed there would still remain in excess of 20,000 acre-feet of water to be developed by Wyoming appropriators in the Little Snake River drainage at a future time.

ALTERNATIVE D-II

This option offers the management of 93,146 acre-feet of water annually. The amount is composed of 30,400 acre-feet from Upper Savery Reservoir, 51,400 acre-feet (½ the capacity of Three Forks Reservoir), and a direct flow diversion from the Little Snake River at Baggs during periods of high runoff.

After providing for existing in-basin permits and allowing for
conveyance losses, this option could provide 68,000 acre-feet per year for transbasin diversion. According to the Little Snake River Compact, Wyoming would be allowed to develop in excess of 43,000 acre-feet in addition to the amount suggested by this plan.

**ALTERNATIVE D-III**

This proposal can generate 133,200 acre-feet of storage per year. Upper Savery Reservoir would provide 30,400 acre-feet and Three Forks can provide 102,800 acre-feet. By management of this system toward maximum yield, it is possible to provide for existing permitted agricultural use within the Little Snake River drainage, assess conveyance losses, and deliver 102,989 acre-feet for demands outside the basin.

Although there would remain undeveloped water in the Little Snake River drainage available under the compact, this alternative would more nearly approach total development of Wyoming's allocation than would the other alternatives.

**ALTERNATIVE D-IV**

This alternative, as proposed, would completely allocate Wyoming's allotment under the Little Snake River Compact. A total of 156,616 acre-feet would be developed by securing 30,400 acre-feet from Upper Savery Reservoir. Three Forks would be built 10 feet higher than that used in Alternatives D-II and D-III. This excess capacity and the assumption that the Stage II collection system would not be built would raise the yield of Three Forks Reservoir to 126,216 acre-feet.

The proposed operation of the system would provide 18,768 acre-feet for existing agricultural permits and extended municipal needs. There would be 27,848 acre-feet available for unspecified in-basin uses, 10,000 acre-feet for conveyance losses, and 100,000 acre-feet for transbasin delivery.
ALTERNATIVE D
LITTLE SNAKE RIVER AQUEDUCT

OPTION I
YIELD 115,900 ACRE-FEET PER YEAR

(Upper Savery Reservoir and 85,500 acre-foot Three Forks Reservoir)

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<td>Out-of-Basin</td>
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<td>In-Basin Use</td>
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<td>Excess in System</td>
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<td>Remaining Compact Allocation</td>
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1. Upper Savery Reservoir                           $31,163,000
2. Three Forks Reservoir                           42,000,000
3. Hydroelectric Generation                        1,524,181
4. Pipeline                                        68,964,720
5. Pump Stations (Electric)                        4,239,840
6. Electric Hook-up                                7,345,808
7. Gaging Station (Baggs)                          25,000
8. Gaging Station (North Platte)                   50,000
9. EIS                                             250,000

Total                                              $155,562,549

Annual Cost

- Annual Yield 30,000 acre-feet
- Conveyance Loss 3,000 acre-feet
- Financing at 8½% interest for 40 years
- Municipal Demand Only

1. Annual Debt                                      $13,748,618
2. Manager                                          79,500
3. Assistant Manager                               53,000
4. Hydrographer                                     53,000
5. Power Costs (Electric)                           2,319,063
6. Pump Station Repairs                             28,039
7. General O&M (2%)                                 311,125
8. Hydropower Revenues                              (1,152,839)

Total                                               $15,439,506

PRICING

Construction Costs

IN-BASIN
- Upper Savery and Three Forks
  73,163,000 x 18,768/115,900
  $11,847,482
- EIS
  250,000 x 18,768/115,900
  40,483
Total                                               $11,887,965
Annual Costs

. Debt
11,887,965 x .08838 $ 1,050,658

. Management
(79,500 + 53,000 + 53,000) x 18,768/115,900
Total Annual Cost 30,039 $ 1,080,697
Annual Cost per Acre-foot (18,768) $57.58
Annual Cost per 1,000 gallons $ .18

RAWLINS

Construction Costs

. Upper Savery and Three Forks
73,163,000 x 7,500/115,900 $ 4,734,448

. Hydroelectric
1,524,181 x 7,500/30,000 381,045

. Pipeline
68,964,720 x 71.5/86.5 x 7,500/30,000 14,251,380

. Pump Stations, Gaging, Electricity, EIS
11,910,648 x 7,500/30,000 2,977,662
Total $22,344,535

Annual Costs

. Debt
22,344,535 x .08838 $ 1,974,810

. Management
(79,500 + 53,000 + 53,000) 7,500/115,900 12,004

. Power, Pump Repairs, O&M
(2,319,063 + 28,039 + 311,125) 7,500/30,000 664,557

. Power Revenue
(1,152,839)(7,500/30,000) (288,210)
Total Annual Cost $ 2,363,161
Annual Cost per Acre-foot (7,500) $315.08
Annual Cost per 1,000 gallons $ .97

OTHERS

Construction Costs

. Upper Savery and Three Forks
73,163,000 x 22,500/115,900 $14,203,343

. Hydroelectric
1,524,181 - 381,045 1,143,136
. Pipeline
  $68,964,720 - 14,251,380
  $54,713,340

. Pump Stations, Gaging, Electricity, EIS
  $11,910,648 x 22,500/30,000
  $8,932,986
  Total
  $78,992,805

Annual Costs

. Debt
  $78,992,805 x .08838
  $6,981,384

. Management
  $(79,500 + 53,000 + 53,000) 22,500/115,900
  36,012

. Power, Pump Repairs, O&M
  $(2,319,063 + 28,039 + 311,125) 22,500/30,000
  1,993,670

. Power Revenues
  $(1,152,839) 22,500/30,000
  $(864,629)
  Total Annual Cost
  $8,146,437
  Annual Cost per Acre-foot (22,500)
  $362.06
  Annual Cost per 1,000 gallons
  $1.11

CONSUMER PRICES

NATURAL GAS

<table>
<thead>
<tr>
<th>Component</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Stations</td>
<td>$12,430,440</td>
</tr>
<tr>
<td>Electric</td>
<td>$4,239,840</td>
</tr>
<tr>
<td>Increase</td>
<td>$8,190,600</td>
</tr>
<tr>
<td>Hook-up</td>
<td>$475,200</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>$475,200</td>
</tr>
<tr>
<td>Hydroelectric</td>
<td>525,000</td>
</tr>
<tr>
<td>Electric</td>
<td>7,345,808</td>
</tr>
<tr>
<td>Decrease</td>
<td>$6,345,608</td>
</tr>
</tbody>
</table>

IN-BASIN

. No Change
  $0.18/1,000 gal.

RAWLINS

. Capital Costs
  $4,734,448 + 381,045 + 14,251,380 +
  (11,910,648 + 1,844,992) 7,500/30,000
  $22,805,782

Annual Costs

. Debt
  $22,805,782 x .08838
  $2,015,575

. Management
  12,004
. Power, Pump Repairs, O&M
  (1,576,939 + 78,811 + 311,125) 7,500/30,000 $ 491,719

. Power Revenues
  Total Annual Cost (288,210)
  Annual Cost per Acre-foot (7,500) $297.48
  Annual Cost per 1,000 gallons $ .91

OTHERS

. Capital Costs
  14,203,343 + 1,143,136 + 54,713,340 + (11,190,648 + 1,844,992) 22,500/30,000 $79,836,549

Annual Costs

. Debt
  79,836,549 x .08838 $ 7,055,954

. Management
  36,012

. Power, Pump Repairs, O&M
  (1,576,939 + 78,811 + 311,125) 22,509/30,000 1,475,156

. Power Revenues
  Total Annual Cost (864,629)
  Annual Cost per Acre-foot (22,500) $342.33
  Annual Cost per 1,000 gallons $ 1.05

CONSUMER PRICES
NATURAL GAS–STATE ROYALTIES

IN-BASIN

. No Change $ .18/1,000 gal.

RAWLINS

. Pumping Cost Reduction
  1,303,603 x 7,500/30,000 = ($325,901)
  Total Annual Cost 2,231,088 - 325,901 $ 1,905,187
  Annual Cost per Acre-foot (7,500) $254.02
  Annual Cost per 1,000 gallons $ .78

OTHERS

. Pumping Cost Reduction
  1,303,603 x 22,500/30,000 = ($977,702)
  Total Annual Cost 7,702,493 - 977,702 $ 6,724,791
  Annual Cost per Acre-foot (22,500) $298.88
  Annual Cost per 1,000 gallons $ .92
ALTERNATIVE D
LITTLE SNAKE RIVER AQUEDUCT

OPTION II
YIELD 93,146 ACRE-FEET PER YEAR

(Upper Savery Reservoir, One-Half the Yield of Three Forks Reservoir, Direct Flow Diversion)

Out-of-Basin 68,000 acre-feet
Conveyance Loss 6,378 acre-feet
In-Basin Use 18,768 acre-feet
Remaining Compact Allocation 42,975 acre-feet

1) Upper Savery Reservoir $31,163,000
2) Three Forks Reservoir ($\frac{1}{2}$) 28,500,000
3) Hydroelectric Generator 1,824,323
4) Pipeline (66 inch) 56,308,560
5) Pipeline (48 inch) 38,269,440
6) Pump Stations (Electric) 9,390,764
7) Electrical Hook-up 3,548,096
8) Gaging Station (Baggs) 25,000
9) Gaging Station (North Platte) 50,000
10) EIS 250,000

**Total** $169,329,183

**Annual Cost**

- Annual Yield 68,000 acre-feet
- Conveyance Loss 1,700 acre-feet
- Financing at 8\% interest for 40 years
- Municipal and Industrial Use

1) Annual Debt $14,965,313
2) Manager 79,500
3) Assistant Manager 53,000
4) Hydrographer 53,000
5) Power Cost (Electric) 15,982,336
6) Pump Station Repairs 107,250
7) General O&M (2%) 338,658
8) Hydropower Revenues (621,795)

**Total** $30,957,262

**PRICING**

**Construction Costs**

**IN-BASIN**

- Upper Savery and $\frac{1}{2}$ Three Forks
  59,663,000 x 18,768/93,146 $12,021,506

- EIS
  250,000 x 18,768/93,146 50,373

**Total** $12,071,879
Annual Costs

. Debt
   12,071,879 x .08838 $1,066,913

. Management
   185,500 x 18,768/93,146
   Total Annual Cost
   Annual Cost per Acre-foot (18,768) $58.84
   Annual Cost per 1,000 gallons $.18

RAWLINS

Construction Costs

. Upper Savery and 1⁄2 Three Forks
   59,663,000 x 7,500/93,146 $4,803,991

. Hydroelectric
   1,824,323 x 7,500/68,000 201,212

. Pipeline (66 inch)
   56,308,560 x 7,500/68,000 6,210,503

. Pipeline (48 inch)
   38,269,440 x 15/48.5 x 7,500/68,000 1,305,431

. Pump Stations, Gaging, Electric
   (9,390,764 + 3,548,096 + 75,000) 7,500/68,000 1,435,352

. EIS
   250,000 x 7,500/93,146 20,130
   Total $13,976,619

Annual Costs

. Debt
   13,976,619 x .08838 $1,235,254

. Management
   185,500 x 7,500/93,146 14,936

. Power, Pump Repairs, O&M
   (15,982,336 + 107,250 + 338,658) 7,500/68,000 1,811,939

. Power Revenues
   (621,795) (7,500/68,000) (68,580)
   Total Annual Cost $2,993,549
   Annual Cost per Acre-foot (7,500) $399.14
   Annual Cost per 1,000 gallons 1.23
OTHERS

Construction Costs

. Upper Savery and 1/3 Three Forks
   59,663,000 x 60,500/93.146                      $38,752,190

. Hydroelectric
   1,824,323 x 60,500/68,000                      1,623,111

. Pipeline (66 inch)
   56,308,560 x 60,500/68,000                      50,098,057

. Pipeline (48 inch)
   38,269,440 - 1,305,431                         36,964,009

. Pump Stations, Gaging, Electricity
   13,013,860 x 60,500/68,000                      11,578,508

. EIS
   250,000 x 60,500/93,146                         162,379
   Total                                           $139,178,250

Annual Costs

. Debt
   139,178,250 x .08838                           $12,300,574

. Management
   185,500 x 60,500/93,146                         120,486

. Power Pump Repairs, O&M
   (15,982,336 + 107,250 + 338,658) 60,500/68,000   16,390,892

. Power Revenues
   (621,795)(60,500/68,000)                        (553,215)
   Total Annual Costs                              $28,258,737
   Annual Costs per Acre-foot (60,500)             $467.09
   Annual Costs per 1,000 gallons                 $  1.43

CONSUMER PRICES

NATURAL GAS

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Stations Natural Gas</td>
<td>$45,530,976</td>
</tr>
<tr>
<td>Electric</td>
<td>$9,390,764</td>
</tr>
<tr>
<td>Increase</td>
<td>$36,140,212</td>
</tr>
<tr>
<td>Hook-up Natural Gas</td>
<td>$475,200</td>
</tr>
<tr>
<td>Hydroelectric</td>
<td>$525,000</td>
</tr>
<tr>
<td>Electric</td>
<td>$3,548,096</td>
</tr>
<tr>
<td>Decrease</td>
<td>$2,547,896</td>
</tr>
</tbody>
</table>
IN-BASIN

. No Change

$ .18/1,000 gal.

RAWLINS

. Capital Costs

\[
\begin{align*}
4,803,991 + 201,212 + 6,210,503 + 1,305,431 + \\
(13,013,860 + 33,592,316) 7,500/68,000 + 20,130
\end{align*}
\]

$17,681,654

Annual Costs

. Debt

\[17,681,654 \times .08838\]

$ 1,562,705

. Management

14,936

. Power, Pump Repairs, O&M

\[
\begin{align*}
(10,942,142 + 310,050 + 338,658) 7,500/68,000
\end{align*}
\]

1,278,403

. Power Revenues

\[
\begin{align*}
\text{Total Annual Costs} & \quad \$ 2,787,464 \\
\text{Annual Costs per Acre-foot (7,500)} & \quad \$371.66 \\
\text{Annual Costs per 1,000 gallons} & \quad \$ 1.14
\end{align*}
\]

OTHERS

. Capital Costs

\[
\begin{align*}
38,752,190 + 1,623,111 + 50,098,057 + 36,964,009 + \\
(13,013,860 + 33,592,316) 60,500/68,000 + 162,379
\end{align*}
\]

$169,065,530

Annual Costs

. Debt

\[169,065,530 \times .08838\]

$14,942,012

. Management

120,486

. Power, Pump Repairs, O&M

\[
\begin{align*}
(10,942,142 + 310,050 + 338,658) 60,500/68,000
\end{align*}
\]

10,312,447

. Power Revenues

\[
\begin{align*}
\text{Total Annual Costs} & \quad \$24,818,730 \\
\text{Annual Costs per Acre-foot (60,500)} & \quad \$410.23 \\
\text{Annual Costs per 1,000 gallons} & \quad \$ 1.26
\end{align*}
\]

CONSUMER PRICES
NATURAL GAS-STATE ROYALTIES

IN-BASIN

. No Change

$ .18/1,000 gal.
RAWLINS

. Pumping Cost Reduction
(9,058,065) 60,500/68,000 = ($999,051)
  Total Annual Cost 2,787,464 - 999,051 $1,788,413
  Annual Cost per Acre-foot (7,500) $238.46
  Annual Cost per 1,000 gallons $0.73

OTHERS

. Pumping Cost Reduction
(9,058065) 60,500/68,000 = ($8,059,014)
  Total Annual Cost 24,818,730 - 8,059,014 $16,759,716
  Annual Cost per Acre-foot (60,500) $277.02
  Annual Cost per 1,000 gallons $0.85
### ALTERNATIVE D
### LITTLE SNAKE RIVER AQUEDUCT

**OPTION III**

**YIELD 113,200 ACRE-FEET PER YEAR**

(Upper Savery Reservoir and Three Forks Reservoir)

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out-of-Basin</td>
<td>102,989 ac. ft.</td>
</tr>
<tr>
<td>Conveyance Loss</td>
<td>11,443 ac. ft.</td>
</tr>
<tr>
<td>In-Basin Use</td>
<td>18,768 ac. ft.</td>
</tr>
<tr>
<td>Remaining Compact Allocation</td>
<td>2,921 ac. ft.</td>
</tr>
</tbody>
</table>

| 1) Upper Savery Reservoir            | $31,163,000 |
| 2) Three Forks Reservoir             | 53,000,000  |
| 3) Hydroelectric Generation          | 3,648,646   |
| 4) Pipeline (66 inch)                 | 56,308,560  |
| 5) Pipeline (48 inch)                 | 38,269,440  |
| 6) Pump Stations (Electric)          | 14,021,760  |
| 7) Electrical Hook-up                 | 2,346,000   |
| 8) Gaging Station (Baggs)            | 25,000      |
| 9) Gaging Station (North Platte)      | 50,000      |
| 10) EIS                               | 250,000     |

**Total** $199,082,410

#### Annual Cost

- Annual Yield 102,989 acre-feet
- Conveyance Loss 4,774 acre-feet
- Financing at 8½% interest for 40 years
- Municipal and Industrial Use

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Annual Debt</td>
<td>$17,594,903</td>
</tr>
<tr>
<td>2) Manager</td>
<td>79,500</td>
</tr>
<tr>
<td>3) Assistant Manager</td>
<td>53,000</td>
</tr>
<tr>
<td>4) Hydrographer</td>
<td>53,000</td>
</tr>
<tr>
<td>5) Power Costs (Electric)</td>
<td>41,594,147</td>
</tr>
<tr>
<td>6) Pump Station Repairs</td>
<td>240,900</td>
</tr>
<tr>
<td>7) General O&amp;M</td>
<td>3,981,648</td>
</tr>
<tr>
<td>8) Hydropower Revenue</td>
<td>(1,243,590)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$62,535,508</td>
</tr>
</tbody>
</table>

#### PRICING

**Construction Costs**

**IN-BASIN**

- Upper Savery and Three Forks
  - $11,858,643

- EIS
  - 35,225
  - Total $11,893,868

29
Annual Costs

. Debt
  11,893,868 x .08838 $ 1,051,180

. Management
  185,500 x 18,768/133,200  26,137
  Total Annual Cost $ 1,077,317

  Annual Cost per Acre-foot (18,768) $ 57.40
  Annual Cost per 1,000 gallons $ .18

RAWLINS

Construction Costs

. Upper Savery and Three Forks
  84,163,000 x 7,500/133,200 $ 4,738,908

. Hydroelectric
  3,648,646 x 7,500/114,432  239,136

. Pipeline (66 inch)
  56,308,560 x 7,500/114,432  3,690,525

. Pipeline (48 inch)
  38,269,440 x 7,500/114,432 x 15/48.5  775,739

. Pump Stations, Gaging, Electric
  (14,021,760 + 2,346,000 + 75,000) 7,500/114,432  1,077,677

. EIS
  250,000 x 7,500/133,200  14,077
  Total $10,536,062

Annual Costs

. Debt
  10,536,062 x .08838 $ 931,177

. Management
  185,500 x 7,500/133,200  10,445

. Power, Pump Repairs, O&M
  (41,594,147 + 240,900 + 3,981,648) 7,500/114,432  3,002,877

. Power Revenues
  1,243,590 x 7,500/114,432 (81,506)
  Total Annual Cost $ 3,862,993

  Annual Cost per Acre-foot (7,500) $515.06
  Annual Cost per 1,000 gallons $ 1.58
Construction Costs

. Upper Savery and Three Forks
  84,163,000 \times 106,932/133,200 \quad $67,565,450

. Hydroelectric
  3,648,646 \times 106,932/114,432 \quad 2,929,107

. Pipeline (66 inch)
  56,308,50 \times 106,932/114,432 \quad 45,215,774

. Pipeline (48 inch)
  38,269,440 \times 106,932/114,432 \quad 30,730,360

. Pump Station, Gaging, Electric
  (14,021,760 + 2,346,000 + 75,000) 106,932/114,432 \quad 13,203,536

. EIS
  250,000 \times 106,932/133,200 \quad 200,698
  Total \quad $159,844,930

Annual Costs

. Debt
  159,844,930 \times 0.08838 \quad $14,127,094

. Management
  185,500 \times 106,932/133,200 \quad 148,918

. Power, Pump Repairs, O&M
  (41,594,147 + 240,900 + 3,981,648) 106,932/114,432 \quad 42,813,818

. Power Revenues
  1,243,590 \times 106,932/114,432 \quad (1,162,084)
  Total Annual Cost \quad $55,927,746
  Annual Cost per Acre-foot (106,932) \quad $523.02
  Annual Cost per 1,000 gallons \quad $ 1.61

CONSUMER PRICES

NATURAL GAS

| Pump Stations | Natural Gas | $46,008,900 |
|              | Electric    | 14,021,760  |
|              | Increase    | $31,987,140 |
| Hook-up      | Natural Gas | $ 475,200  |
|              | Hydroelectric | 525,000   |
|              | Electric    | 2,346,000   |
|              | Decrease    | $ 1,345,800 |
IN-BASIN

. No Change

$ .18/1,000 gal.

RAWLINS

. Capital Costs
\[
4,738,908 + 239,136 + 3,690,525 + 775,739 + \\
(44,663,100 + 1,200,000 + 75,000) \times \frac{7,500}{114,432} + 14,077
\]

\[= \frac{12,469,219}{7,500/114,432} \]

Annual Costs

. Debt
\[12,469,219 \times 0.08838\]

$ 1,102,030

. Management

10,445

. Power, Pump Repairs, O&M
\[24,587,835 + 696,420 + 3,981,648 \times \frac{7,500}{114,432}\]

1,918,120

. Power Revenues
\[\text{(81,506)}\]

\[\frac{\text{Total Annual Cost}}{7,500} = \frac{2,949,089}{7,500}\]

\[\frac{\text{Annual Cost per Acre-foot (7,500)}}{7,500} = 393.21\]

\[\frac{\text{Annual Cost per 1,000 gallons}}{1,000} = 1.21\]

OTHERS

. Capital Costs
\[67,565,450 + 2,929,107 + 45,214,774 + 30,730,360 + (46,008,900 + 1,200,000 + 75,000) \times \frac{106,932}{114,432} \]

\[= \frac{190,625,550}{106,932/114,432} \]

Annual Costs

. Debt
\[190,625,550 \times 0.08838\]

$ 16,847,486

. Management

148,918

. Power, Pump Repairs, O&M
\[24,587,835 + 696,420 + 3,981,648 \times \frac{106,932}{114,432}\]

27,347,783

. Power Revenues
\[\text{(1,162,084)}\]

\[\frac{\text{Total Annual Cost}}{106,932} = \frac{43,182,103}{106,932}\]

\[\frac{\text{Annual Cost per Acre-foot (106,932)}}{106,932} = 403.83\]

\[\frac{\text{Annual Cost per 1,000 gallons}}{1,000} = 1.24\]

CONSUMER PRICES

NATURAL GAS-STATE ROYALTIES

IN-BASIN

. No Change

$ .18/1,000 gal.
### RAWLINS

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumping Cost Reduction</td>
<td></td>
</tr>
<tr>
<td>(20,354,168) (7,500/114,432) = ($1,334,035)</td>
<td>($1,615,054)</td>
</tr>
<tr>
<td>Total Annual Cost (2,949,089 - 1,334,035)</td>
<td></td>
</tr>
<tr>
<td>Annual Cost per Acre-foot (7,500)</td>
<td>($215.34)</td>
</tr>
<tr>
<td>Annual Cost per 1,000 gallons</td>
<td>($0.66)</td>
</tr>
</tbody>
</table>

### OTHERS

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumping Cost Reduction</td>
<td></td>
</tr>
<tr>
<td>(20,354,158) (106,932/114,432) = ($19,020,133)</td>
<td>($24,161,970)</td>
</tr>
<tr>
<td>Total Annual Cost (43,182,103 - 19,020,133)</td>
<td></td>
</tr>
<tr>
<td>Annual Cost per Acre-foot (106,932)</td>
<td>($225.96)</td>
</tr>
<tr>
<td>Annual Cost per 1,000 gallons</td>
<td>($0.69)</td>
</tr>
</tbody>
</table>
ALTERNATIVE D
LITTLE SNAKE RIVER AQUEDUCT

OPTION IV
YIELD 156,616 ACRE-FEET PER YEAR

(Upper Savery Reservoir and Enlarged Three Forks Reservoir Without Stage II Diversion)

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out-of-Basin</td>
<td>100,000 acre-feet</td>
</tr>
<tr>
<td>Conveyance Loss</td>
<td>10,000 acre-feet</td>
</tr>
<tr>
<td>In-Basin Use</td>
<td>18,768 acre-feet</td>
</tr>
<tr>
<td>Excess for In-Basin Use</td>
<td>27,848 acre-feet</td>
</tr>
<tr>
<td>Remaining Compact Allocation</td>
<td>0 acre-feet</td>
</tr>
</tbody>
</table>

1) Upper Savery Reservoir                     $31,163,000
2) Enlarged Three Forks Reservoir            56,800,000
3) Hydroelectric Generation                  3,648,646
4) Pipeline (66 inch)                        56,308,560
5) Pipeline (48 inch)                        38,269,440
6) Pump Stations (Electric)                  14,021,760
7) Electrical Hookup                         2,346,000
8) Gauging Station (Baggs)                   25,000
9) Gaging Station (North Platte)             50,000
10) EIS                                       250,000

Total                                        $202,882,241

Annual Cost

- Annual Yield 100,000 acre-feet
- Conveyance Loss 10,000 acre-feet
- Financing at 8½% interest for 40 years
- Municipal and Industrial Use

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tbody>
<tr>
<td>1) Annual Debt</td>
<td>$17,930,732</td>
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<td>2) Manager</td>
<td>79,500</td>
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<td>3) Assistant Manager</td>
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<td>4) Hydrographer</td>
<td>53,000</td>
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<td>5) Power Costs (Electric)</td>
<td>41,594,147</td>
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<tr>
<td>6) Pump Station Repairs</td>
<td>240,900</td>
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<tr>
<td>7) General O&amp;M</td>
<td>4,057,645</td>
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<td>8) Hydropower Revenues</td>
<td>(1,693,393)</td>
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<tr>
<td>Total</td>
<td>$65,702,317</td>
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</tbody>
</table>

PRICING
Construction Costs

IN-BASIN
- Upper Savery and Three Forks
  87,963,000 x 46,616/156,616  $26,181,764
· EIS
  250,000 x 46,616/156,616
  Total

  Annual Costs

· Debt
  26,256,175 x .08838

· Management
  185,500 x 46,616/156,616
  Total Annual Cost

  Annual Cost per Acre-foot (46,616)
  Annual Cost per 1,000 gallons

RAWLINS

Construction Costs

· Upper Savery and Three Forks
  87,963,000 x 7,500/156,616

· Hydroelectric
  3,648,646 x 7,500/110,000

· Pipeline (66 inch)
  56,308,560 x 7,500/110,000

· Pipeline (48 inch)
  38,269,440 x 7,500/110,000

· Pump Stations, Gaging, Electric
  (14,021,760 + 2,346,000 + 75,000) 7,500/110,000

· EIS
  250,000 x 7,500/156,616
  Total

  Annual Costs

· Debt
  10,240,411 x .08838

· Management
  185,500 x 7,500/110,000

· Power, Pump Repairs, O&M
  (41,594,147 + 240,900 + 4,057,645) 7,500/110,000

· Power Revenues
  1,693,393 x 7,500/110,000
  Total Annual Cost

  Annual Cost per Acre-foot (7,500)
  Annual Cost per 1,000 gallons

$74,411
$26,256,175

$2,320,521

$55,213
$2,375,734
$50.96
$0.16

$11,972
$10,240,411

$905,048

$12,648

$3,129,047

(115,459)
$3,931,284
$524.17
$1.61

35
OTHERS

Construction Costs

. Upper Savery and Three Forks
  87,963,000 x 102,500/156,616 $57,568,879

. Hydroelectric
  3,648,646 x 102,500/110,000 3,399,875

. Pipeline (66 inch)
  56,308,560 x 102,500/110,000 52,469,340

. Pipeline (48 inch)
  38,269,440 x 102,500/110,000 35,660,160

. Pump Stations, Gaging, Electric
  (14,021,760 + 2,346,000 + 75,000) 102,500/110,000 15,321,663

. EIS
  250,000 x 102,500/110,000 163,617
  Total $164,583,534

Annual Costs

. Debt
  164,583,534 x .08838 $14,545,893

. Management
  185,500 x 102,500/156,616 121,404

. Power, Pump Repairs, O&M
  (41,594,147 + 240,900 + 4,057,645) 102,500/110,000 42,763,645

. Power Revenues
  1,693,393 x 102,500/110,000 (1,577,934)
  Total Annual Cost $55,853,008
  Annual Cost per Acre-foot (102,500) $544.91
  Annual Cost per 1,000 gallons $ 1.67

CONSUMER PRICES

NATURAL GAS

Pump Stations Increase $31,987,140
Power Hook-up Decrease $ 1,345,800

IN-BASIN

. No Change $ .16/1,000 gal
RAWLINS

· Capital Costs
  4,212,357 + 248,771 + 3,839,220 + 806,994 +
  (46,000,900 + 1,000,200 + 75,000) x 7,500/110,000 +
  11,972
  $12,329,584

Annual Costs

· Debt
  12,329,584 x .08838
  $ 1,089,690

· Management
  12,648

· Power, Pump Repairs, O&M
  (24,587,835 + 696,420 + 4,057,645) 7,500/110,000
  2,000,584

· Power Revenues
  $ (115,459)
  Total Annual Cost
  $ 2,987,463
  Annual Cost per Acre-foot (7,500)
  $398.33
  Annual Cost per 1,000 gallons
  $ 1.22

OTHERS

· Capital Costs
  57,568,879 + 3,399,875 + 52,469,340 + 35,660,160 +
  (46,008,900 + 1,000,200 + 75,000) x 102,500/110,000 +
  163,617
  $193,135,690

Annual Costs

· Debt
  193,135,690 x .08838
  $17,069,332

· Management
  121,404

· Power, Pump Repairs, O&M
  (24,587,835 + 696,420 + 4,057,645) 102,500/110,000
  27,341,316

· Power Revenues
  $ (1,577,934)
  Total Annual Cost
  $42,954,118
  Annual Cost per Acre-foot (102,500)
  $419.06
  Annual Cost per 1,000 gallons
  $ 1.29

CONSUMER PRICES
NATURAL GAS-STATE ROYALTIES

IN-BASIN

· No Change
  $.16/1,000 gal.
. Pumping Cost Reduction

\[(20,354,168) \times \frac{7,500}{110,000} = (\$1,387,784)\]

Total Annual Cost: \[2,987,463 - 1,387,784\] $1,599,679

Annual Cost per Acre-foot (7,500): $213.29

Annual Cost per 1,000 gallons: $0.65

OTHERS

. Pumping Cost Reduction

\[(20,354,168) \times \frac{102,500}{110,000} = (\$18,966,384)\]

Total Annual Cost: \[42,954,118 - 18,966,384\] $23,987,734

Annual Cost per Acre-foot (102,500): $234.03

Annual Cost per 1,000 gallons: $0.72
## ALTERNATIVE COMPARISON CHART

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<thead>
<tr>
<th>Alternatives</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D-I</th>
<th>D-II</th>
<th>D-III</th>
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<td>$144,109,567</td>
<td>$133,707,525</td>
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<td>68,000</td>
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<td>(Acre-Feet)</td>
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