UPPER GREEN LEVEL II
STORAGE DEVELOPMENT
PROJECT

REPORT TO THE GOVERNOR
AND

LEGISLATIVE SELECT WATER COMMITTEE

WATER DEVELOPMENT COMMISSION
ACTION REPORT
April 15, 1983
The Honorable Ed Herschler  
Governor, State of Wyoming

Members of the Select Legislative Water Committee  

Gentlemen:

Under the provisions of Chapter 60, Section 12, (1982 Session Laws), the Wyoming Water Development Commission shall make a recommendation for each project based on the following alternatives:

1. Proceed with next level of activity;
2. Continue study at the present level of activity,
3. Terminate consideration of the project.

For reasons enunciated in this report, the Wyoming Water Development Commission has moved to discontinue the storage studies for the Upper Green River Project, authorized by Section 4(d) of Chapter 60, 1982 Session Laws.

Respectfully Yours,

Nelson E. Wren,  Jr.
Chairman
Walter J. Pilch  
Vice Chairman
Lewis Freudenthal  
Secretary
Lee Coffman  
Kenneth Kennedy
William J. Kirven, Jr.
J.W. Wes Myers  
James Noble
Willard C. Rhoads

Nelson E. Wren,  Jr.
Chairman, Wyoming Water Development Commission

NEW/mrr

Enclosure
Feasibility Results
Upper Green Level II Storage Development Project

INTRODUCTION

On March 23, 1983 the Wyoming Water Development Commission unanimously approved a motion to "Cease All Work" on the Level II Upper Green River Storage Development Project. This action was based on the results of the pre-feasibility study completed January 12, 1983 and subsequent meetings with the project sponsor, The Big Piney Conservation District.

The purpose of the document is to provide a brief explanation and justification for the above described Commission action.

BACKGROUND

In February 1982 the Wyoming Legislature's Forty-Sixth Session authorized the "Upper Green River" storage development project. "To store early spring runoff for late season supplemental irrigation water supplies." The legislation identified thirteen (13) potential storage sites in the Upper Basin, however after a series of public meetings, the Project Sponsor developed a final list of eight (8) sites to be studied. These sites included:

1. Sixty-Seven Reservoir enlargement or replacement,
2. McNinch Wash,
3. Fish Creek,
4. Snider Basin,
5. South Cottonwood,
(6) LaBarge Meadows,
(7) Sand Hill,
(8) North Piney

* See Figure I

The Wyoming Water Development Commission, then contracted with the firm of ARIX, a professional corporation, of Riverton, Wyoming, on August 9, 1982 as the prime consultant for the Upper Green River Study. As directed by their contract the ARIX firm then initiated a pre-feasibility study of the above sites, in hopes of further narrowing the list of 8 to those sites with the greatest project potential for final feasibility analysis.
UPPER GREEN STORAGE
DEVELOPMENT RESERVOIR
SITES

1. South Cottonwood
2. McNinch Wash
3. 67 Res. Enlargement
4. Sand Hill
5. Fish Creek
6. Snider Basin
7. LaBarge Meadows
8. North Piney

LEGEND

Forest boundary
County Boundary
Creek or River
Paved Road
Potential Dam Site

WYOMING RANGE
POTENTIAL STORAGE
SITES
GREEN RIVER BASIN
Wyoming

FIGURE I
PRE-FEASIBILITY STUDY RESULTS

The final pre-feasibility study was completed and distributed to the project sponsor and Sublette County Libraries the week of January 10, 1983 and all interested parties were given approximately four (4) weeks to review the document and prepare comments prior to meetings held in the basin the week of February 7, 1983. The Commission staff then met with the Big Piney Conservation District the evening of February 9, 1983 to discuss study results and formulate recommendations as to how the final feasibility study should proceed.

In analyzing the evaluation criteria matrix, shown on Table 1, the Big Piney Conservation District found the task of selecting the best sites, for further study, a very difficult one. Perhaps the most disappointing aspect associated with all eight sites are the average annual yields. After allowing for the 1/3 average daily instream flow requirement, recommended by the Game & Fish Commission, none of the eight sites could produce an average yield much over 2,000 acre-feet per year, resulting in $/acre-foot costs in excess of $1,500.00. Given the above situation, the pre-feasibility study did not address instream flows until such time as the Game & Fish Commission had more accurate site specific data and as a result the average yields listed in Table 1 are at best, unrealistically high.

At this point it is also important to point out that most of irrigators in the upper basin do not currently pay for water and that the need for supplemental water does not occur every year.

The Big Piney Conservation District spent approximately one week, through discussions with their membership and others, formulating their decision on how to proceed. This decision was forwarded to the
TABLE I

Evaluation Criteria Matrix

<table>
<thead>
<tr>
<th>Site</th>
<th>Average Available</th>
<th>Minimum Available</th>
<th>Embankment Storage</th>
<th>Geotechnical Considerations</th>
<th>Engineering Considerations</th>
<th>Environmental Considerations</th>
<th>Total Est. Project Costs</th>
<th>Cost Per Acre-ft of Storage</th>
<th>Overall Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixty Seven</td>
<td>E 1/2 8417-30-112</td>
<td>6,000</td>
<td>5,200</td>
<td>800</td>
<td>42/5050</td>
<td>3,600</td>
<td>No local riprap source</td>
<td>Critical mule deer winter range</td>
<td>$3,514,000</td>
</tr>
<tr>
<td>Sand Hill</td>
<td>E 1/2 36-30-113</td>
<td>23,000</td>
<td>14,100</td>
<td>10,300</td>
<td>72/1550</td>
<td>18,100</td>
<td>No local riprap source</td>
<td>Sage grouse nesting area - mule deer winter range</td>
<td>$3,002,700</td>
</tr>
<tr>
<td>McNinch Reservoir</td>
<td>E 1/2 10-30-113</td>
<td>6,000</td>
<td>5,200</td>
<td>800</td>
<td>58/2700</td>
<td>3,600</td>
<td>Moderate seepage conditions - Low riprap costs - exten- sive conveyance works required - low road costs</td>
<td>Critical mule deer winter range</td>
<td>$3,950,000</td>
</tr>
<tr>
<td>Fish Creek</td>
<td>SE 1/4 26-30-115</td>
<td>5,500</td>
<td>3,500</td>
<td>1,000</td>
<td>83/670</td>
<td>1,400</td>
<td>Good material sources - Sheldon - shallow Alluvium - good but costly spillway conditions</td>
<td>Core trench - grout and toe drain - 3:1 zoned dam - on channel - Indian Creek diversion and conveyance - Elk calving area - Lander cutoff and graves - Popular fishing area</td>
<td>$1,493,000</td>
</tr>
<tr>
<td>Soldier Basin</td>
<td>SW 1/4 11-29-115</td>
<td>13,200</td>
<td>11,600</td>
<td>2,700</td>
<td>80/550</td>
<td>4,300</td>
<td>A better site - Good material sources - Sheldon - shallow Alluvium - good but costly spillway conditions</td>
<td>Core trench and toe drain - 3:1 zoned if clays avail. - on-channel moderate costs, low riprap costs - high road costs</td>
<td>$1,941,800</td>
</tr>
<tr>
<td>South Cottonwood Creek Reservoir</td>
<td>W 1/2 12-32-115</td>
<td>9,400</td>
<td>6,000</td>
<td>3,200</td>
<td>97/1460</td>
<td>6,000</td>
<td>Gravel &amp; limestone seepage Conditions - possible thrust fault and instability - uncertainty</td>
<td>Gravel &amp; limestone seepage Conditions - possible thrust fault and instability - uncertainty</td>
<td>$3,289,000</td>
</tr>
<tr>
<td>Lusarre Creek</td>
<td>W 1/2 14-29-116</td>
<td>7,900</td>
<td>4,800</td>
<td>2,100</td>
<td>105/1620</td>
<td>4,800</td>
<td>Complex foundation cond. - requires much investigation Faults - glacial deposits - No riprap - many problems - Lens and uncertainty</td>
<td>Complex foundation cond. - requires much investigation Faults - glacial deposits - No riprap - many problems - Lens and uncertainty</td>
<td>$3,358,000</td>
</tr>
<tr>
<td>North Piney Creek Reservoir</td>
<td>See Note 5,200 See Note 5,200 See Note 5,600 See Note 5,600</td>
<td>15,700</td>
<td>802,000</td>
<td>264 acres</td>
<td>Historical landslide area Unknown conditions</td>
<td>Good but costly spillway - Materials on site</td>
<td>High foundation prep. costs</td>
<td>Probable grouting - deep Core and toe drain 4:1 zoned dam - high on-channel costs - high road costs</td>
<td>$4,501,440</td>
</tr>
</tbody>
</table>

(1) Based on LRCM values which are average annual flows reduced by 100% of known water rights, (2) No adjustment made for silt storage or permanent storage. (3) Does not include embankment replacing stripplings and core trench, quantity and cost is included in cost estimate. (4) Does not include undetermined costs for relocation of gas and oil wells, pipelines and misc. rights and installations. (5) Value not developed, not part of original contract.
Commission in a letter dated February 17, 1983, (see Appendix A), asking that the Commission proceed to investigate further the North Piney, Snider Basin, and South Cottonwood sites, (see figure II). In their letter they also felt it important to point out to the Commission that they "did not feel they could bare any cost on the project other than operation and maintenance". Based on the previous statement, "Public Benefits" would, of course, have to be extremely valuable. However, according to the Game & Fish Commission's analysis, mitigation would be involved at all three sites, either fishery or terrestrial and not wildlife enhancement.

There area approximately twenty (20) direct beneficiaries associated with each of the three sites according to Sublette County land ownership records. In talking with some of these potential beneficiaries, and as indicated by the many storage site investigations prepared in years past, there is clearly a desire for storage. However, as in years past, their desire has certainly waned when confronted with the economics associated with storage in this portion of the Upper Green River drainage.

The Wyoming Water Development Commission, after taking all the above factors into consideration i.e., number of project beneficiaries, extremely high cost of water, very low average annual yields, very minimal public benefits and the inability of the project sponsors to repay any Capital Construction Costs, felt that in the State's best interest this project should be discontinued.
Water Development Commission
Barrett Building
Cheyenne, Wyoming 82002

UPPER GREEN RIVER BASIN WATER STORAGE PROJECT

The Big Piney Conservation District has considered the recommendations made by Arix concerning a water storage project in the Upper Green River Basin. We propose that the following sites be investigated further: North Piney, Snider Basin, South Cottonwood.

The next step should be to see if the water users that would benefit from the proposed project would be willing to cooperate in such a venture. If they are not interested in the project this criteria could be used to further narrow the list of sites. Do this before spending any more funds to investigate the projects further.

Also, explain to the cooperators the fact that existing water rights will not be affected by this project. It is believed by many that the project would put all water rights on an equal basis. No project will succeed unless the facts are known to all concerned parties.

According to Mike O'Grady the Wyoming Water Development Commission would handle the matter of making the above determination.

We do not feel that we can bare any cost on the project other than operation and maintenance.

John J. Chrisman
Chairman