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EXECUTIVE SUMMARY
FOR
NOWOOD RIVER STORAGE / WATERSHED STUDY
LEVEL I

Prepared For:

Wyoming Water Development Commission
6920 Yellowtail Road
Cheyenne, WY 82002

Prepared By:

Anderson Consulting Engineers, Inc.
375 E. Horsetooth Rd. Bldg 5
Fort Collins, CO 80525

ANDERSON CONSULTING ENGINEERS, INC.
Civil • Water Resources • Environmental

March 9, 2010

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(ACE Project No. WYWDC29)

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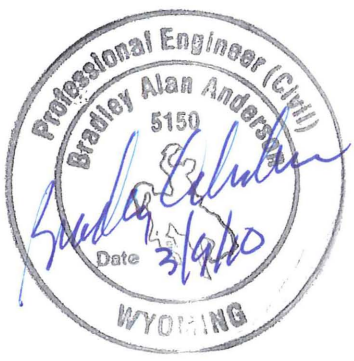

1.0 INTRODUCTION

On June 5, 2008 Anderson Consulting Engineers, Inc. (ACE) entered into a contract with the Wyoming Water Development Commission (WWDC) to provide professional services for the Nowood River Storage / Watershed Level I Study.

In a proactive effort to evaluate their watershed, a group of interested landowners joined together to approach the WWDC in request of funding for a watershed investigation involving the Nowood River watershed. That group, now referring to itself as the Proponents of Nowood Drainage Storage, or PONDS, was successful in its application and funding was awarded to the project. ACE was retained to evaluate and describe the Nowood River watershed and specifically develop a watershed management plan.

Opportunities and issues within the watershed are to be identified and practical economic solutions proposed. This report documents the results of all tasks associated with this effort.

2.0 BACKGROUND

The Nowood River watershed is generally located on the western slope of the Big Horn Mountains in Big Horn and Washakie Counties, Wyoming, covering approximately 2,020 square miles. The Nowood River is tributary to the Big Horn River and joins it at the Town of Manderson. The watershed encompasses the Towns of Hyattville and Tensleep. Elevations range from less than 4,000 feet above mean sea level at its mouth to over 13,000 feet in the Big Horn Mountains, resulting in overall relief of over 9,000 feet. The eastern portion of the watershed consists of the west slope of the Big Horn Mountains. Precipitation ranges with elevation from 15 to 22 inches per year on the east side of the basin compared to 11 to 13 inches per year on the drier and lower west side of the basin.

The majority of the basin is federally managed public land. The largest portion of these lands is managed by the Bureau of Land Management (approximately 49.18%), followed by United States Forest Service (National Forest plus Wilderness Area are approximately 16.16%). The remainder of the basin is primarily either privately owned (26.56%), owned by the State of Wyoming (6.73 %). The Nature Conservancy (private) owns an additional 0.78% and 0.60% is administered by the Wyoming Department of Game and Fish**.**

Land owners and stakeholders within the study area face several key issues related to water within the basin and utilization of resources:

Runoff Quantity and Timing Issues: The Nowood River generates a significant amount of runoff. Consequently, the problem with streamflow is not one of quantity but of timing. Shortages occur during late season low flow periods but spring runoff sees large amounts of water running out of the watershed. Flooding, while not a frequent problem, has caused damages historically.

Grazing Issues: Grazing of livestock is one of the primary land uses within the study area; the livestock industry has played an important role in the economy and character of the area. **I**n general, water available for livestock and wildlife consumption within the watershed is limited to riparian corridors. Consequently, livestock and wildlife tend to focus on those areas where water is available for consumption. Those areas where water is available for livestock/wildlife consumption also support riparian vegetation.

Channel Stability Issues: Channel stability issues are evident in certain locations of the watershed. Magnitude of degradation problems vary, but include bed and bank degradation, channel incision, degradation of riparian vegetation, etc. There are numerous causes of channel degradation instability and degradation, including encroachment by land use activities (agriculture, grazing), alteration of channel alignment (i.e., straightening), loss of riparian vegetation, etc.

Irrigation Issues: Total irrigated acreage is estimated to be on the order of 20,000 acres based upon available mapping. The ditches typically range in size from those servicing individual land owners with less than 20 acres to several ditches conveying water to irrigate several hundred acres of land. Irrigation ditches in the watershed are commonly in need of improvement in some form. Typical structures in need of rehabilitation include drop structures, siphons and headgates. Late season irrigation is frequently curtailed with the shortage of water in the streams. During recent drought conditions, irrigators had to frequently choose which field to let 'burn' (i.e., not irrigate). Reservoir storage coupled with improvements to the irrigation conveyance facilities or on-farm irrigation methods may conserve water and create opportunities that would benefit irrigators and other water users within the watershed.

3.0 LEVEL I PROJECT PURPOSE AND SCOPE

The primary purposes of the Nowood River Storage and Watershed, Level I Study are to:

- Inventory all conditions in the watershed relevant to identification and characterization of issues and opportunities related to water resource**.**
- Develop a watershed management and rehabilitation plan describing potential alternative projects and management strategies to address water resource related issues and potential water development opportunities identified in the watershed inventory.
- Assess the potential environmental issues or constraints that may affect the projects/strategies identified in the watershed management and rehabilitation plan, and identify and characterize the permits/clearances and any associated environmental studies and/or mitigation that may be required.
- Develop conceptual-level estimates of the costs of the potential projects identified in the watershed management and rehabilitation plan.
- Perform preliminary economic analyses of major project alternatives (i.e., dams and reservoirs), including assessment of project benefits and sponsor ability to pay, and identify and describe potential funding sources for all potential project types identified in the watershed management and rehabilitation plan.
- Compile and collate all of the spatial data available into a comprehensive Geographic Information System (GIS) to facilitate the completion of this project and also to be available as a resource for future studies.

4.0 WATERSHED MANAGEMENT PLAN

A watershed management plan was developed which incorporates recommended projects in each of the various disciplines investigated:

- Project Components "I": Irrigation system rehabilitation components
- Project Components "U": Livestock / wildlife upland watering opportunities
- Project Components "S": Surface water storage opportunities

- Project Components “G“: Grazing management opportunities
- Project Components “C”: Stream channel stability components
- Project Components “O”: Other management opportunities

These improvements focus on potential mitigation of several key issues that presently exist within the watershed. The plan is summarized in Table 1 Included in the table are the various project components, estimated project costs, and other pertinent information.

5.0 CONCLUSIONS AND RECOMMENDATIONS

A multidisciplinary inventory of the Nowood River watershed was conducted in an effort to identify and evaluate key resource issues and concerns. A comprehensive Geographic Information System (GIS) was completed in conjunction with the inventory. The GIS incorporates the data collected and results generated during the study and collates it with information collected from a wide variety of sources. The GIS will be a valuable resource for the community and future studies which will likely be conducted in the watershed.

5.1 Conclusions

Upon completion of the watershed inventory phase of the project, the project team developed the watershed management plan. The plan was developed based upon findings of the inventory phase, a series of public meetings, questionnaires, and interaction with the project steering committee. The key issues and problems were identified and ultimately, project goals and objectives were formulated to address them. Specifically, plans were developed to address issues associated with the following broad categories:

- *Irrigation System Conservation and Rehabilitation,*
- *Livestock/Wildlife Upland Watering Opportunities,*
- *Surface Water Storage Opportunities,*
- *Stream Channel Condition and Stability,*
- *Grazing Management Opportunities, and*
- *Other Upland Management Opportunities.*

In summary, the following conclusions are provided .

5.1.1 Irrigation System Components

1. Potential solutions to the primary issues and problems associated with irrigation system infrastructure were identified for 10 individual ditch systems. Conceptual level cost estimates were completed for the recommended improvements.

2. Of the irrigation systems inventoried and evaluated during this study, several structures are in immediate need of rehabilitation. Several improvements have been identified to reduce potential seepage and conserve water.

3. Individual improvements range from rehabilitating a small check structure at a cost of approximately $500 to lining 1,500 feet of a ditch at a cost of about $120,000.

Table 1. Nowood river Watershed Plan (Part 1)

Watershed Plan Component: Irrigation System Rehabilitation							
Watershed Component	**Description**	**Priority**	**Estimated Project Cost**	**Watershed Component**	**Description**	**Priority**	**Estimated Project Cost**
Anita Supply Ditch/Anita Ditch System Improvements (I-01)				**Highland Ditch System Improvements (I-06)**			
I-01.1	Replace/install 6 farm turnouts	3	$ 21,000	I-06.1	Replace canal headgate	2	$ 35,000
	Replace concrete channel - see Mercer for			I-06.2	Replace/install 6 farm turnouts and clean 1	3	$ 21,000
I-01.2	Replace failing drop structure	1	NA (1)	I-06.3	Replace 60-inch diameter CMP	3	$ 4,700
I-01.3	Install 6-foot drop structure	2	$ 28,700	I-06.4	Replace 24-inch diameter CMP	3	$ 1,800
I-01.4	Install check structure	3	$ 9,000	I-06.5	Rehabilitate wasteway	3	$ 3,200
I-01.5	Replace wasteway with pipe drop structure	2	$ 45,000	**Melley Ditch System Improvements (I-07)**			
I-01.6	Replace 36-inch pipe over Alkali Creek	1	$ 10,000	I-07.1	Install 12-inch PIP, (Approx. 3,800 lf with 6	2	$ 40,200
I-01.7	Install four 6-foot drop structures	2	$ 115,000	I-07.2	Install ditch headgate and diversion	2	$ 45,000
Avent Ditch System Improvements (I-02)				**Shafer Ditch System Improvements (I-08)**			
I-02.1	Replace wasteway structure	2	$ 10,000	I-08.1	Remove existing headgate	2	$ 5,000
I-02.2	Rehabilitate pipe drop structure	2	$ 15,000	I-08.2	Install new headgate with sediment sluice	1	$ 45,000
I-02.3	Replace/install 8 farm turnouts	3	$ 28,000	I-08.3	Replace/install 6 farm turnouts	3	$ 21,000
I-02.4	Replace check structure	2	$ 8,000	I-08.4	Replace/install new check structure	2	$ 9,000
Green Spot Ditch System Improvements (I-03)				I-08.5	Rehabilitate check structure	3	$ 500
I-03.1	Replace ditch headgate	1	$ 12,000	I-08.6	Clear vegetation in and along ditch	2	$ 3,000
Hardscrabble / Williams Ditch System Improvements (I-04)				I-08.7	Install liner (1,500 lf)	2	$ 120,000
I-04.1	Replace Williams Ditch Headgate	2	$ 8,000	**Victoria Ditch System Improvements (I-09)**			
I-04.2	Install NRCS tubulent fountain/valves/connect ions at pipeline inlet	1	$ 4,000	I-09.1	Replace canal headgate and diversion structure	2	$ 28,000
Harmony Ditch System Improvements (I-05)				I-09.2	Install / replace 3 farm turnouts	3	$ 10,500
I-05.1	Replace 3-ft Parshall flume	3	$ 8,700	I-09.3	Install 100 feet 12-inch RCP and surface inlet	2	$ 5,000
I-05.2	Install check structure	2	$ 9,000	I-09.4	Rehabilitate check structure	1	$ 4,500
I-05.3	Install new drop structure with check	1	$ 30,000	**West Ditch System Improvements (I-10)**			
I-05.4	Replace/install new check structure	2	$ 9,000				
I-05.5	Replace/install 9 farm turnouts	3	$ 35,000	I-10.1	Replace ditch headgate	2	$ 45,000
I-05.6	Replace culvert with check structure	2	$ 9,000	I-10.2	Replace splitter/wasteway	2	$ 15,800
I-05.7	Install new drop structure	2	$ 29,000	I-10.3	Replace 5' Parshall flume	1	$ 15,800
I-05.8	Install new check structure	2	$ 8,000	I-10.4	Rehabilitate siphon	1	$ 20,800
I-05.9	Install new check structure	2	$ 9,000	I-10.5	Replace/install 8 farm turnouts	3	$ 10,500
I-05.10	Install new check structure	2	$ 10,000	I-10.6	Install check structure	2	$ 4,000
I-05.11	Install new wasteway structure	2	$ 18,000	I-10.7	Replace 2’ Parshall flume	2	$ 7,500

Table 1. Nowood river Watershed Plan (Part 2)

Watershed Plan Component: Upland Wildlife / Livestock Water Projects								
Watershed Component	**Project Name**	**Allotment Directly Benefitted**	**Pipeline (lineal feet)**	**Stock Tanks (number each)**	**Storage tanks (Number each)**	**Stock Ponds (Number Each)**	**Guzzlers (Number Each)**	**Estimated Project Cost**
U-01	Wildhorse Draw Pipeline Project	Torchlight, East Flats, Weber , Lower Nowood	54,500	6	1	0	0	$151,853
U-02	McDermott Draw Pipeline Project	Airport, West Alkali, Weber Lower, Lower Nowood	48,800	5	0	0	0	$132,703
U-03	Eask Alkali Pipeline Project	East Alkali, West Alkali	27,500	3	0	0	0	$64,795
U-04	Weber Lower Pipeline Project	Weber Lower	12,800	3	0	1	0	$28,492
U-05	Myers Spring Pipeline Project	Meyers Spring, Weber Lower	37,500	5	0	0	0	$95,661
U-06	Cold Spring Pipeline Project	Mathews Ridge, Cold Spring	24,300	3	0	1	0	$123,886
U-07	Rannell's Pipeline Project	Rannell's	3,300	1	0	0	0	$22,509
U-08	Gapen Hyatt Pipeline Project	Renner Individual, Gapen Hyatt	67,500	7	0	0	0	$147,779
U-09	Brokenback No. 1 Pipeline Project	Brokenback	26,200	3	0	0	0	$51,207
U-10	West Side Regional Pipeline Project	Blue Ridge, West Nowood, Hidden Dome, Little Cottonwood, Castle Gardens, Kimball, Bud Kimball, North Butte, Cedar Ridge, Joe Henry, Big Cedar, Gordon, and Buffalo Creek	410,000	29	2	0	0	$941,465
U-11	Duncan Pipeline Project	Duncan	2,500	3	0	1	0	$41,171
U-12	Hidden Dome Pipeline Project	Hidden Dome	35,900	6	1	0	0	$120,324
U-13	Brokenback No. 2 Pipeline Project	Brokenback	11,600	2	0	0	0	$40,373
U-14	Brokenback No. 3 Pipeline Project	Brokenback	7,100	1	0	0	0	$22,625
U-15	Brokenback No. 4 Guzzler	Brokenback	100	1	0	0	1	$21,410
U-16	Big Cottonwood Pipeline Project	Big Cottonwood, North Blue Ridge, Sand Creek,	36,000	5	0	0	0	$132,030
U-17	Schoolhouse Gulch Pipeline Project	Schoolhouse	6,150	2	0	0	0	$26,707
Watershed Plan Component: Surface Water Storage Opportunities								
Watershed Component	**Project Name**	**On-Channel / Off-Channel**	**Capacity (acre-feet)**	**Surface Area (acres)**	**Dam Height (feet)**	**Embankment (feet)**	**Total Dam Volume (cy)**	**Estimated Project Cost**
S-2	Big Trails	On Channel	16,850	623	80	765	650,000	$13,800,000
S-3	Bruner Gulch	Off Channel	7,700	557	45	650	164,742	$12,200,000
S-10	Meadowlark Lake Enlargement	On Channel	4,150	324	23	580	26,074	$8,300,000
S-18	Taylor Draw	Off Channel	5,050	160	80	1,050	827,852	$11,100,000
S-19	Upper Nowood	On Channel	5,250	321	80	1,260	927,585	$15,900,000
S-25	Deep Creek	On Channel	9,600	147	100	1,085	672,000	$13,000,000
S-26	Nowood - Crawford	On Channel	1,100	118	70	1,100	695,139	$9,800,000
Watershed Plan Component: Grazing Management Opportunities								
G-1	Expansion of grazing distribution / limited reliance on riparian areas.							
G-2	Fencing to create pastures of similar ecological condition to enable a rest-rotation grazing system.							
G-3	Strategic salting and herding are other tools that can be used to enhance grazing distribution.							
G-4	Consideration of wildlife needs in upland water source development (escape ramps, wildlife watering facilities, etc).							
G-5	Utilization of Ecological Site Description State and Transition Modeling to optimize range conditions.							
G-6	Use of prescribed fire to assist in the restoration of range health areas benefitting by this treatment according to the state and transition models.							
Watershed Plan Component: Stream Channel Restoration Projects								
C-1	Installation of stream channel degradation/incision mitigation measures.							
C-2	Installation of stream bank erosion mitigation measures							
C-3	Rehabilitation/replacement of structures posing barriers to fish migration and / or entrainment							
Watershed Plan Component: Other Management Opportunities								
O-1	Continuaton of eradication efforts targeting tamarisk and Russian olive							
O-1	Continuation of noxious weed management programs currently being conducted by the weed and pest districts.							

4. The recommended improvements to each irrigation system can be implemented individually, in combination, or as a complete package depending on the needs, preferences and financial ability of the owner. Funding assistance is available from a number of sources, especially the WWDC Small Water Project Program and various programs administered by the NRCS.

Costs associated with irrigation system components of the watershed management plan were estimated based upon current itemized unit costs for individual improvements. NRCS EQIP cost data were used where feasible for typical design items.

5.1.2 Livestock/Wildlife Upland Watering Opportunities

1. There appears to be numerous opportunities to improve range and riparian conditions by means of increasing the availability of upland water sources for wildlife and livestock use.

2. Pipeline/tank systems appear to offer the most efficient and cost-effective means to provide adequate watering to large areas of rangeland. Water sources for these systems will depend on the location of the rangeland to be served and the available alternative sources. The most likely sources are wells or spring developments.

3. A total of 17 potential wildlife/livestock water supply projects were identified based upon evaluation of available water sources and input from local land owners and allotment permittees. Conceptual plans and conceptual level cost estimates were prepared for each project. Projects ranged from installation of a guzzler to a regional upland water supply project servicing 29 individual wildlife / livestock water tanks and approximately 77 miles of pipeline.

4. Any such improvements and practices must be fully implemented and maintained by the landowner to gain the maximum overall benefits to the watershed.

Table 1 included the estimated costs associated with each of the upland wildlife / livestock water source components of the watershed management plan.

5.1.3 Surface Water Storage Opportunities

1. The results of the flow availability investigation confirmed that water is available and flows out of the watershed during the spring runoff period, predominantly during May and June.

2. Based on the flow availability analysis and site-specific topography, 35 potential storage sites were evaluated. For each site, numerous attributes were assessed and collated in a reservoir evaluation matrix. Following completion of a screening process and meetings with the project steering committee, the list was reduced to seven sites recommended for further study.

3. Conceptual designs and cost estimates were completed for the seven Priority 1 reservoir sites. Table 2 summarizes pertinent information regarding this effort. Review of this table shows that reservoir capacity ranged from 1,100 acre-feet at Site Number 26 - Nowood – Crawford, to 16,850 acre-feet at Site Number 2 – Big Trails. Cost per acre foot of storage ranged from $819 at the Big Trails site to$8,900 at the Nowood – Crawford site. Table 1 also includes the cost estimates associated with the Priority 1 sites.

Table 2. Priority 1 Storage Site Information

Site #	2	3	10	18	19	25	26
Site Name	**Big Trails**	**Bruner Gulch**	**Meadowlark Lake**	**Taylor Draw**	**Upper Nowood**	**Deep Creek**	**Nowood - Crawford**
On-Channel / Off-Channel	On Channel	Off Channel	On Channel	Off Channel	On Channel	On Channel	On Channel
Direct Supply Source	Nowood River	Buffalo Creek	Ten Sleep Creek	Taylor Draw	Nowood River	Deep Creek	Nowood River
Capacity (acre-feet)	16,850	7,700	4,150	5,050	5,250	9,600	1,100
Surface Area (acres)	623	557	324	160	321	147	118
Maximum Water Depth (feet)	75	40	50	75	75	95	65
Average Water Depth (feet)	27.1	13.8	12.8	31.6	16.4	65.3	9.3
Dam Height (feet)	80	45	16	80	80	100	70
Capacity (acre-feet)	16,850	7,700	4,150	5,050	5,250	9,600	1,100
Embankment Length (feet)	765	650	580	1050	1260	1085	1100
Total Dam Volume (cy)	650,000	164,742	26,074	827,852	927,585	672,000	695,139
Method of Reservoir Fill	On channel	Diversion Structure / canal	On channel	Diversion Structure / canal	On channel	On channel	On channel
Key Appurtenances	NA	Nowood River Supply Canal	NA	Otter Creek Supply canal	NA	NA	NA
Size Category	Medium	Small	Small	Medium	Medium	Large	Medium

4. During a subsequent, and more detailed investigation of potential storage sites, several institutional constraints must be addressed. These include the release of water from storage and the administration of water rights associated with all downstream diversions, and cooperative agreements likely required to "shepherd" the water to reaches in need of supplemental flows. In addition, objectives of the recently completed Wind River/Big Horn River Basin Plan, which is currently being updated, must be considered and the impact of these storage sites evaluated in the context of the basin plan. Finally, stipulations and conditions in the Yellowstone River Compact should be more fully evaluated.

5. Permitting efforts and NEPA compliance associated with completion of reservoir projects will likely be complicated, lengthy, and involve coordination with several regulatory agencies.

6. The 'need' for reservoir storage and benefits accrued from completion of storage projects must be fully examined and documented. Based upon existing water availability modeling associated with the Wind / Bighorn Basin Planning Study, existing shortages associated with irrigation usage do not support the need for construction of reservoirs of the magnitude presented herein. However, the general consensus among landowners interviewed during the completion of this study indicates that late-season shortages are common and farmers must frequently make difficult decisions related to their farm management and irrigation practices which results in irrigation of less than the acreage associated with the individual water rights.

7. It is recommended that consideration be given to development of a StateMod (or equivalent) hydrologic model for the watershed during Level II so that appropriate exercise of water rights and reservoir operations can be included in the more detailed evaluations.

8. Irrigation needs and requirements may not support the construction of a reservoir on their own. In order for any reservoir to ultimately be constructed, it will have to demonstrate multiple benefits, including irrigation supply, flood mitigation, power generation, fish and wildlife habitat, recreation, etc.

5.1.4 Stream Channel Condition and Stability

1. Based on the geomorphic assessment, several impaired channel reaches were identified within the watershed. The categories of impairments identified include, but are not limited to degradation of riparian vegetation and degradation of riparian condition in the form of stream bank erosion and channel degradation.

2. Site-specific solutions should be developed to mitigate the channel impairment and ultimately included in the watershed management rehabilitation plan.

3. The WGFD is in the process of inventorying channel structures which pose threats to fish passage and allow capture by irrigation ditches. Upon completion of their study, the structures identified as being potential barriers should be considered for improvement or replacement.

4. Community-sponsored stream channel and habitat improvement projects could provide numerous benefits to the watershed. Potential projects would include efforts such as bank stabilization efforts using techniques such as willow plantings. In addition to providing direct benefits to the specific stream, ancillary benefits include education and community involvement.

5.1.5 Grazing Management Opportunities

1. Strategies, recommended in the state and transition models associated with NRCS descriptions of the ecological sites found within the watershed, should be adopted and employed to optimize range conditions through prescribed grazing management and best management practices.

2. Prescribed fire should be utilized as a tool to assist in the restoration of range health areas benefitting by this treatment according to the state and transition models. Delineation of specific areas potentially benefitting from this practice was beyond the scope of this Level I project. However, based upon input from landowners and land managers and observations made during the completion of this investigation, it is evident that there are areas which would likely benefit from prescribed fires.

5.1.6 Other Upland Management Opportunities

1. Eradication efforts targeting tamarisk and Russian Olive have been largely successful and continuation of these efforts is encouraged.

2. Noxious weed management programs currently being conducted by the respective weed and pest control districts of Washakie and Big Horn Counties should continue. Education opportunities for land owners and managers should continue to be made available.

5.2 Recommendations

Based upon the information presented throughout this report and the conclusions presented above, the recommendations listed below are presented for consideration:

1. Many of the irrigation rehabilitation alternatives and the livestock / wildlife upland watering alternatives fall within the constraints for funding eligibility of the WWDC's Small Water Project Program (SWPP).These projects should be reviewed and selected alternatives should be implemented as soon as is practical. Completion of one or more of these projects in the near future would serve to benefit those directly involved in the project and increase interest and awareness of the benefits associated with the watershed planning process***.***

   Funding through the SWPP does not require formation of a district. Consequently, individuals can seek funding through this program. Projects providing multiple benefits and for which total project cost are less than $100,000 are eligible for funding under this program. Grants are available for up to 50 percent of the total project cost or $25,000, whichever is less.

   Several alternative sources exist for funding of improvements within the watershed including on-farm improvements, irrigation rehabilitation projects, stream enhancements/restoration projects, and conservation and flood control projects. Creative strategies for funding/financing of projects should be more fully investigated following identification of projects worthy of additional evaluation and potential implementation. As an example, replacement of a failing ditch headgate and diversion which are also identified by WGFD as a barriers to fish passage, could potentially be eligible for funding through SWPP (if total project cost meets SWPP criteria). Additional funding could also be attained through WGFD, Trout Unlimited, and other sources because of the fisheries and stream habitat benefits achievable with completion of the project. *By combining funding sources, the owner could conceivably obtain grants for most, if not all, of the project costs.*

2. PONDS should continue investigation of potential entity formation requirements and alternatives. Larger projects listed included in the watershed management plan will require formation of a district or entity capable of incurring the debt required for construction. PONDS can move forward several steps, however, without the need for district formation. For reservoir projects to be completed, there are three phases of Level II investigations, each building upon the previous in terms of level of detail. Level II, Phases I and II investigations are eligible for funding through the WWDC without creation of an 'entity' in the form of a district.

3. Collection of stream gage data should continue for streams and tributaries within the watershed. State and Federal agencies should be contacted in an effort to determine the potential for re-establishment of permanent stream gages to assist in future planning efforts.

4. One of the most critical issues facing PONDS and the community, is the need for a concise consensus among the parties/entities within the watershed in order for larger projects (i.e., storage projects) to successfully move towards completion. PONDS and the community have made significant progress in this area through public meetings and the successful application for funding of this Level I project. It is anticipated that as small projects are successfully completed, awareness of the watershed management plan, its benefits, and opportunities presented with it, will increase and participation will increase accordingly.

5. Results of the investigation indicate that there is water available for storage and several potential storage sites have been identified. PONDS should proceed with an application to the WWWC for Level II, Phase I funding project for feasibility of storage sites. Work should include, but not be limited to:

    a. investigation of sites prioritized by the WWDC / PONDS committee and additional sites identified during the Level II project;
    b. determination of project purpose and need;
    c. refinement of hydrology information;
    d. revised design / cost information;
    e. permitting requirements; and
    f. economic / financial evaluation for ability to pay.