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EXECUTIVE SUMMARY
for
UPPER NORTH PLATTE RIVER 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 Road, Bldg. 5
Fort Collins, CO 80525
(ACE Project No. WYWDC36)

December 11, 2015

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

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1.0 INTRODUCTION

In 2013 the Saratoga Encampment Rawlins Conservation District (SERCD) requested funding from the Wyoming Water Development Commission (WWDC) for the completion of a watershed management plan for the Upper North Platte River watershed. The intent of the funding request was to have a comprehensive watershed inventory completed which identified issues related to land use and water resources and to then develop a plan addressing those issues. The WWDC approved funding for the project and Anderson Consulting Engineers, Inc. (ACE) was ultimately contracted in June, 2014 to complete the project.

2.0 BACKGROUND

The project study area is generally defined as the subbasin of the Upper North Platte River delineated by the boundaries of the North Platte River Watershed (HUC 10180002) and the Pathfinder Seminoe Watershed (HUC 10180002) eighth order Hydrologic Units as defined by the United States Geologic Survey. However, because the Medicine Bow River Watershed Study was being completed simultaneously and also funded by the WWWDC, the northern portion of the study area was adjusted to coincide roughly with the participating and sponsoring conservation districts. Figure 1 shows the general location of the watershed within the State of Wyoming.

The study culminates in the delivery of a Watershed Management and Rehabilitation Plan (the Plan). It is the goal and objective of the sponsors and the WWDC to generate a plan that is not only technically sound, but also one that is practical and economically feasible. The formulated plan also includes development of a database to facilitate the planning process and the evaluation/implementation of watershed improvements. In order to accomplish this task, the project sponsors, the WWDC, and the consultant address several key issues, including the following:

- *Utilization of grazing allotments*
- *Water availability*
- *Channel stability/riparian restoration/enhancement*
- *Irrigation system assessment (to promote rehabilitation of existing facilities and provide opportunities for water conservation that would support an increase in water availability)*
- *Public participation and acceptance (intent is to focus on solutions, not compliance issues)*

One of the purposes of this Level I watershed study is to provide the basis upon which the WWDC can make future decisions pertaining to State funding of water development projects. Upon completion of the Level I watershed study, landowners and stakeholders within the geographic boundaries of the project study area become eligible to apply for funding through the WWDC's Small Water Project Program, or SWPP. According to the operating criteria of the SWPP:

> "*The purpose of the Small Water Project Program (SWPP) is to participate with land management agencies and sponsoring entities in providing incentives for improving*

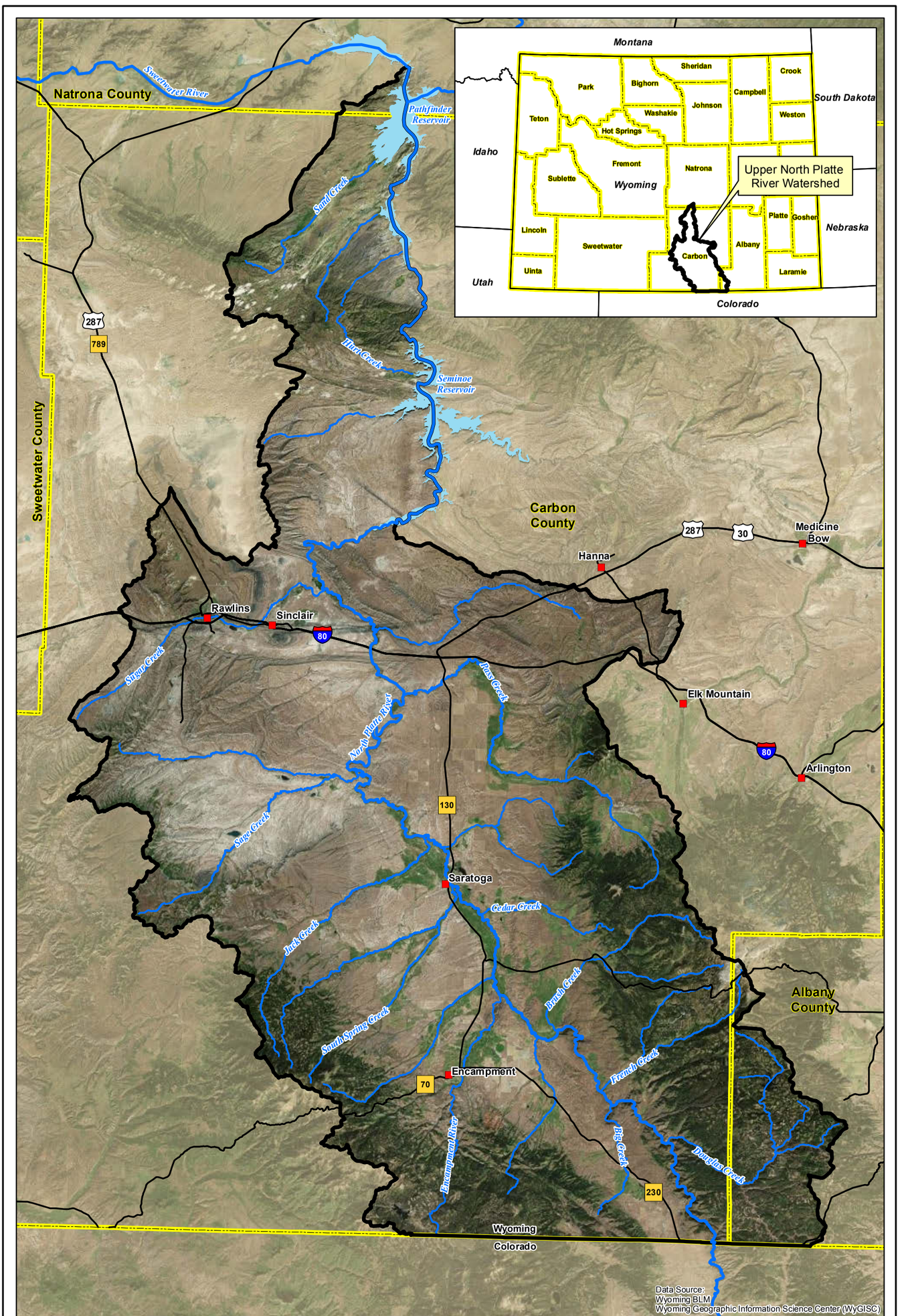

Figure 1 Upper North Platte River Watershed: Location Map

watershed condition and function. Projects eligible for SWPP grant funding assistance include the construction or rehabilitation of small reservoirs, wells, pipelines and conveyance facilities, springs, solar platforms, irrigation works, windmills and wetland developments. Projects should improve watershed condition and function and provide benefit for wildlife, livestock and the environment. Projects may provide improved water quality, riparian habitat, habitat for fish and wildlife and address environmental concerns by providing water supplies to support plant and animal species or serve to improve natural resource conditions".

Small projects are defined as projects where estimated construction of rehabilitation costs, permit procurement, construction engineering and project land procurement are $135,000 or less. Applicants can receive up to $35,000 towards these costs.

Individuals would apply for funding through the SERCD which would serve as the applicant's sponsor. Application deadlines are December 31st of the year for consideration. According to the WWDC's recently revised operating guidelines, project priorities are as follows:

1. Source water development
2. Storage
3. Pipelines, conveyance facilities, solar platforms and windmills
4. Irrigation
5. Environmental

In addition, projects that have completed permitting requirements, certified designs, agency notifications, land procurement and finalized other financial agreements (in other words, "shovel ready" projects) may be considered as a funding priority at the discretion of the WWDC.
During the completion of this level I investigation, efforts were made to meet with as many landowners and stakeholders as possible and to provide assistance defining their individual small water project. These projects are then outlined as components of the Watershed Management Plan.

3.0 PROJECT PURPOSE AND OBJECTIVES

The primary goal of this Level I Study is to combine all existing data with data collected and generated from this study to form a comprehensive Watershed Management and Rehabilitation Plan. The purpose and objectives of the project are itemized below:

- *Facilitate consensus building among the Conservation District, landowners and the Wyoming Water Development Commission.*
- *Facilitate public participation.*
- *Conduct an evaluation and description of the Upper North Platte River watershed, including quantity and quality of surface water resources, and riparian/upland conditions.*
- *Inventory and describe Irrigation systems, water storage, and flood control needs present within the watershed.*

- *Conduct a geomorphic assessment of the primary channels within the watershed and identify potential mitigation measures to improve impaired channel reaches.*
- *Conduct an irrigation system inventory and develop a rehabilitation plan for those ditches expressing an interest to participate.*
- *Conduct an evaluation of water storage needs and opportunities to augment water available for livestock and wildlife.*
- *Develop a watershed management plan which identifies problem areas within the watershed and proposes practical economic solutions.*
- *Identify permits, easements, and clearances necessary for plan implementation.*
- *Develop cost estimates for improvements.*
- *Complete an economic Analysis and evaluate alternative sources of funding.*

4.0 WATERSHED MANAGEMENT AND REHABILITATION PLAN

For the purposes of tracking individual components of the watershed management plan, each component was designated a unique project or "improvement" number. The prefixes used for each improvement describe the category of the watershed management plan it falls under. The prefixes are as follows:

- ***Project Components "IRR": Irrigation system rehabilitation components***
- ***Project Components "L/W": Livestock/wildlife upland watering opportunities***
- ***Project Components "G": Grazing management opportunities***
- ***Project Components "STO": Surface water storage opportunities***
- ***Project Components "STR": Stream channel stability components***
- ***Project Components "O": Other watershed management opportunities.***

The plan is summarized in Table 1.

5.0 CONCLUSIONS AND RECOMMENDATIONS

A multidisciplinary inventory of the Upper North Platte 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. In previous chapters, the key issues and problems were identified and ultimately, project goals and objectives were formulated to address them.

Table 1. Upper North Platte River Watershed Management Plan.

Watershed Plan Component: Irrigation Rehabilitation Projects (IRR)					
Watershed Management Plan Component	Project Type	Longitude	Latitude	Section, Township, Range	Priority
IRR-001	New Structure Construction	-106.6209760	41.3484970	S. 16 ,T. 16 N., R. 82 W.	4
IRR-002	New Structure Construction	-106.6091800	41.3483310	S. 16 ,T. 16 N., R. 82 W.	4
IRR-003	Structure Rehabilitation	-106.6125240	41.3174640	S. 33 ,T. 16 N., R. 82 W.	4
IRR-004	Structure Rehabilitation	-106.6115500	41.3177820	S. 33 ,T. 16 N., R. 82 W.	4
IRR-005	New Structure Construction	-106.6104380	41.3186820	S. 28 ,T. 16 N., R. 82 W.	4
IRR-006	New Structure Construction	-106.6101870	41.3157300	S. 33 ,T. 16 N., R. 82 W.	4
IRR-007	New Structure Construction	-106.6325180	41.3194090	S. 29 ,T. 16 N., R. 82 W.	4
IRR-008	New Structure Construction	-106.6337650	41.3204560	S. 29 ,T. 16 N., R. 82 W.	4
IRR-009	New Structure Construction	-106.6323160	41.3230590	S. 29 ,T. 16 N., R. 82 W.	4
IRR-010	Structure Rehabilitation	-106.5190500	41.3437030	S. 20 ,T. 16 N., R. 81 W.	4
IRR-011	Structure Rehabilitation	-106.5375150	41.3633250	S. 7 ,T. 16 N., R. 81 W.	4
IRR-012	New Structure Construction	-106.5343790	41.3663390	S. 7 ,T. 16 N., R. 81 W.	4
IRR-013	Structure Rehabilitation	-106.5320490	41.3681480	S. 8 ,T. 16 N., R. 81 W.	4
IRR-014	Structure Rehabilitation	-106.5632490	41.3756730	S. 12 ,T. 16 N., R. 82 W.	4
IRR-015	New Structure Construction	-106.5679120	41.3814190	S. 1 ,T. 16 N., R. 82 W.	4
IRR-016	Structure Rehabilitation	-106.5826580	41.3889300	S. 2 ,T. 16 N., R. 82 W.	4
IRR-017	New Structure Construction	-106.6687540	41.4320560	S. 19 ,T. 17 N., R. 82 W.	4
IRR-018	New Structure Construction	-106.5907710	41.3968840	S. 35 ,T. 17 N., R. 82 W.	4
IRR-019	New Structure Construction	-106.5382420	41.3460310	S. 18 ,T. 16 N., R. 81 W.	4
IRR-020	Structure Rehabilitation	-106.5393920	41.3545970	S. 18 ,T. 16 N., R. 81 W.	4
IRR-021	Structure Rehabilitation	-106.9223730	42.1079200	S. 30 ,T. 25 N., R. 84 W.	4
IRR-022	New Structure Construction	-106.9210560	42.1050400	S. 29 ,T. 25 N., R. 84 W.	4
IRR-023	Structure Rehabilitation	-106.9087000	42.1070230	S. 29 ,T. 25 N., R. 84 W.	4
IRR-024	Structure Rehabilitation	-106.9029840	42.1065460	S. 29 ,T. 25 N., R. 84 W.	4
IRR-025	New Structure Construction	-106.9087000	42.1070230	S. 29 ,T. 25 N., R. 84 W.	4
IRR-026	New Structure Construction	-106.9029840	42.1065460	S. 29 ,T. 25 N., R. 84 W.	4
IRR-027	New Structure Construction	-106.6722560	41.3758330	S. 12 ,T. 16 N., R. 83 W.	4
IRR-028	New Structure Construction	-106.6215880	41.1890680	S. 16 ,T. 14 N., R. 82 W.	4
IRR-029	New Structure Construction	-106.7168620	41.3026890	S. 3 ,T. 15 N., R. 83 W.	4
IRR-030	New Structure Construction	-106.8047860	41.4629670	S. 11 ,T. 17 N., R. 84 W.	4
IRR-031	New Structure Construction	-106.8057040	41.4673580	S. 2 ,T. 17 N., R. 84 W.	4
IRR-032	New Structure Construction	-106.8064990	41.4687020	S. 2 ,T. 17 N., R. 84 W.	4
IRR-033	New Structure Construction	-106.8067820	41.4693370	S. 2 ,T. 17 N., R. 84 W.	4
IRR-034	New Structure Construction	-106.8070910	41.4718430	S. 2 ,T. 17 N., R. 84 W.	4
IRR-035	New Structure Construction	-106.8087410	41.4711200	S. 2 ,T. 17 N., R. 84 W.	4
IRR-036	New Structure Construction	-106.7840830	41.2430610	S. 25 ,T. 15 N., R. 84 W.	4
IRR-037	New Structure Construction	-106.6537810	41.4762230	S. 6 ,T. 17 N., R. 82 W.	4
IRR-039	New Structure Construction	-106.6846170	41.3421800	S. 23 ,T. 16 N., R. 83 W.	4
IRR-041	Structure Rehabilitation	-106.5258070	41.3671800	S. 8 ,T. 16 N., R. 81 W.	4
IRR-042	Structure Rehabilitation	-106.4749770	41.2865320	S. 10 ,T. 15 N., R. 81 W.	4
IRR-043	New Structure Construction	-106.8768990	41.1384630	S. 31 ,T. 14 N., R. 84 W.	4
IRR-044	New Structure Construction	-106.4880910	41.3267210	S. 27 ,T. 16 N., R. 81 W.	4
IRR-045	New Structure Construction	-106.7097520	41.0863550	S. 22 ,T. 13 N., R. 83 W.	4
IRR-046	New Structure Construction	-106.7764740	41.2033630	S. 7 ,T. 14 N., R. 83 W.	4

Watershed Management Plan Component	Project Type	Spring Development	Well Construction / Rehabilitation	Solar Pump / Generator	Stock Tank	Storage Tank	Pipeline (ft)	Fencing (ft)	Stock Reservoir Rehabilitation	Stock Reservoir Construction	Longitude	Latitude	Section, Township, Range	Priority
L/W-001	Stock Tank		1	1	2		1,200				-106.4311	41.0588	T. 13 N., R.	3
L/W-002	Spring	1			1		200	500			-106.5592	41.1245	. 13 N., R.	1
L/W-003	Spring	1			1		200	500			-106.5820	41.1572	T. 14 N., R.	1
L/W-004	Spring	1			1		200	500			-106.5786	41.1444	T. 14 N., R.	1
L/W-005	Spring	1			1		200	500			-106.3993	41.0262	. 12 N., R.	1
L/W-006	Spring	1			2		2,700	500			-107.3507	41.6831	T. 20 N., R.	1
L/W-007	Spring	1			2		2,700	500			-107.3460	41.6562	. 19 N., R.	1
L/W-008	Stock Reservoir								1		-107.3367	41.6673	T. 20 N., R.	2
L/W-009	Well		1	1	1		2,700				-107.3479	41.6545	. 19 N., R.	1
L/W-010	Well		1	1	1		2,700				-107.3399	41.6695	T. 20 N., R.	1
L/W-011	Stock Reservoir									1	-106.6831	41.3596	T. 16 N., R.	2
L/W-012	Stock Reservoir									1	-106.6861	41.3590	T. 16 N., R.	2
L/W-013	Stock Reservoir									1	-106.6799	41.3915	. 16 N., R.	2
L/W-014	Spring	1			2		2,700	500			-106.6197	41.2119	. 14 N., R.	1
L/W-015	Spring	1			1		300	500			-106.6051	41.2277	T. 15 N., R.	1
L/W-016	Spring	1			2		2,700	500			-106.5985	41.2137	. 14 N., R.	1
L/W-017	Spring	1			1		230	500			-106.6446	41.3036	. 15 N., R.	1
L/W-018	Stock Reservoir									1	-106.7183	41.3698	T. 16 N., R.	2

Watershed Plan Component: Storage Opportunities (STO)						
Watershed Plan Component	Project name	Action	Source	Storage		Priority
				Existing	New Construcion /	
Large Reservoirs						
No Large Reservoir Projects Were Identified						NA
Medium Reservoirs						
STO-001	Beaver Dam Reservoir	New Reservoir Construction	Beaver Creek	NA	300	2
Small Reservoirs						
No Small Reservoir Projects Were Identified						NA

Watershed Plan Component: Stream Channel Opportunities (STR)				
Watershed Plan Component	Project name	Action	Source	Priority
STR-001	Cumberland Gulch Headcut stabilization	Stabilize Headcut	Cumberland Gulch	5
STR-002	Encampment River at Highway 230	Streambank Stabilization	Encampment River	5

5.1.1 Irrigation System Components

1. Potential solutions to the primary issues and problems associated with irrigation system infrastructure were identified. Consequently, forty six (46) individual projects were incorporated into the watershed management plan. Conceptual level cost estimates were completed for the recommended improvements.

2. Individual improvements range from installation of measurement devices on ditches where there currently are no means of measuring flows at a cost of approximately $5000 to construction of new diversion structures and headgates. These projects would be much more extensive with respect to costs, permitting, and construction.

3. 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.

4. Partnering opportunities may exist for construction of in-stream structures diversion. For example, Trout Unlimited (TU) is currently providing partial funding for projects within the study area in an effort to minimize their impacts upon fisheries and fish passage.

5. Many of the proposed irrigation system improvements would require minor involvement or permitting from regulatory agencies to be completed. However, work completed within stream channels (waters of the US) would require coordination with the USACE. Rehabilitation activities would likely be exempted from Section 404 permitting due to the USACE's exclusion of irrigation system maintenance efforts. Construction of new facilities would likely require Section 404 permitting.

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. Opportunities to improve range and riparian conditions require installing and operating well-distributed, reliable upland water sources and watering facilities for wildlife and livestock. Installing pipelines and stock tanks is the foundation of effective grazing management and can be an economical way to improve rangeland conditions.

3. 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.

4. Through discussion with local landowners and stakeholders, a total of 18 potential livestock / wildlife water supply projects were identified. Conceptual plans and conceptual level cost estimates were prepared for each project. Projects ranged from installation of stock tanks to well and pipeline construction.

5. Many of the livestock / wildlife projects could be completed entirely on private lands. Consequently permitting issues are greatly simplified. However, many would involve coordination with the Bureau of Land Management (BLM) through the Rawlins Office. BLM consultation will be necessary in order to obtain the requisite permits and cultural clearances.

6. Because of the existing regulatory environment and involvement of third-party interests, the proposed projects with portions of federal lands could be difficult and require additional review and planning efforts.

7. Several proposed projects and pipeline components could be rerouted or redesigned to involve only private or state lands, these might result in increased materials and construction costs but could avoid project delays and permitting issues.

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

5.1.3 Surface Water Storage Opportunities

1. Construction of new reservoirs within the project study area are controlled by two legal documents:

    a. The Modified North Platte Decree (MNPD) and,
    b. The Platte River Recovery and Implementation Program (PRRIP).

2. The two documents define constraints upon development of new storage facilities, however they do not prohibit them.

3. Construction of new surface water storage facilities or enlargement of existing facilities were not identified as vital components of the watershed management plan. Through the project Scoping Meeting and public outreach efforts, only one recommendation was brought to the project team.

4. The storage project recommended for inclusion in the plan (Beaver Meadow Reservoir) had originally been initiated by the Town of Encampment as a source of municipal water. Original water rights were cancelled by the WSEO because work on the proposed reservoir was not completed.

5.1.4 Stream Channel Condition and Stability

1. Based on the geomorphic assessment and input from the project Sponsor, 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. 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. Construction and operation of reliable water supply projects must be developed and implemented in areas with inadequate water sources before adjustments or alternatives in grazing management could be made on a particular area or allotment.

2. Development of reliable water sources and associated watering facilities can aid in distribution, timing, and frequency of grazing animals. However, additional measures such as cross-fencing, low-stress herding, mineral/salting, and grazing density should be evaluated as part of the site-specific, grazing management inventory and plan.

3. Available tools such as the ESD and the STM can be used by landowners and managers to become aware of the growth potential of desirable vegetation and predicted responses on a particular range site.

4. These tools could be used in developing appropriate rangeland treatments and grazing practices to begin the transition from an undesirable to a desirable plant community

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 by applying through a conservation district as their sponsor. As discussed in Chapter 6, projects providing multiple benefits and for which total project cost are less than $135,000 are eligible for funding under this program. Grants are available for up to 50 percent of the total project cost or $35,000, 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. Several of the irrigation projects identified involved costly repairs or replacement of existing facilities and would not be eligible for funding through the SWPP. For the projects listed below, landowners and ditch owners should consider district formation (where applicable) and application to the WWDC for level II evaluation and potential project funding:

    a. IRR-029: Encampment Platte Valley Ditch Diversion
    b. IRR-041: South Brush Creek Supply Ditch
    c. IRR-043: Kurtz-Chatterton Ditch
    d. IRR-045: Enlarged Encampment Range Ditch (Billie Creek Ditch)
    e. IRR-046: Wagoner Cherokee Ditch Diversion

3. Landowners or managers seeking to participate in the SWPP should consult and coordinate with the SERCD, which is the eligible sponsor of SWPP applications and project agreements.

4. The study's GIS and digital library should be used as a tool in planning and developing potential projects and should be updated as necessary from available information sources.

5. Potential funding opportunities exist for proposed and future improvement projects within the watershed including ranch and farm improvements, irrigation system rehabilitation, riparian/wetland enhancements, river corridor and stream channel restoration, and urban drainage and flood control projects. For example, the SERCD has been granted funding through the USDA ***Regional Conservation Partnership Program (RCPP)***. The funding is intended for

achieving resource management goals from improving water quality and wildlife habitat to streambank restoration. Where appropriate, partnering SWPP funding with RCPP funded projects could provide multiple benefits.

6. Innovative strategies for coordinated project funding and financing should be investigated and focus on local, collaborative endeavors that integrate more than one watershed issue or concern that could potentially result in achievement of multiple benefits.

7. Every effort was made to provide information within this document to support the application for SWPP funding from the WWDC with SERCD sponsorship. Project narratives, conceptual designs, cost estimates, and discussion of project benefits can all be incorporated directly into the SWPP application by the SERCD.

8. The public outreach portion of this project attempted to accommodate all interested parties. To the best of the project team's knowledge, all who expressed interested in participating were contacted. However, our experience has shown that additional "new" individuals will come forward wishing to participate after this Level I study is completed. These individuals must be made aware that they <u>are</u> eligible to apply for SWPP funding if they are within the geographic boundaries of the study area. They simply have not had the benefit of having met with the project team and having a portion of their application needs provided to them. They would be subject to the same application requirements and deadlines as those who did participate.

9. The Upper North Platte River Watershed Management plan was completed based primarily upon input obtained from the SERCD and participating landowners/stakeholders. The majority of the project recommendations involved rehabilitation or replacement of irrigation structures (IRR components) with a total of forty six (46) projects. Forty of these would be eligible for Small Water Project Program Funding as their total costs would be less than $135,000 each. Construction of all project eligible for SWPP funding would require approximately $1,179,000. The remaining four projects would like require Level II investigations and would potentially add over $1,000,000 to complete.

   A total of eighteen (18) livestock and wildlife water supply projects (L/W components) were included in the plan. Construction of all projects would require approximately $538,000 to complete and included the following itemized features:

   - Spring Developments 10
   - Well Construction / Rehabilitation 3
   - Solar Pumps / Generators 3
   - Stock Tanks 18
   - Pipeline (ft) 18,730
   - Fencing (ft) 5,000
   - Stock Reservoir Rehabilitation 1
   - Stock Reservoir Construction 3

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