FEASIBILITY OF THE UPPER WEST LATERAL PIPING AND WATER OPTIMIZATION PROJECT

Sponsored by the Crawford Clipper Ditch Company in conjunction with the Colorado Water Conservation Board

January 2023

Grand Mesa Natural Resource Consulting, LLC

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Purpose of the Project

The Upper West lateral piping implementation of 5700' will reduce 256 tons annually of salt from entering the Lower Gunnison and Colorado River Watershed's in support of Salinity Control. This project will eliminate ditch seepage and reduce Selenium from entering Cottonwood Creek as the project will pipe almost a mile of open earthen canal to a closed conduit system.

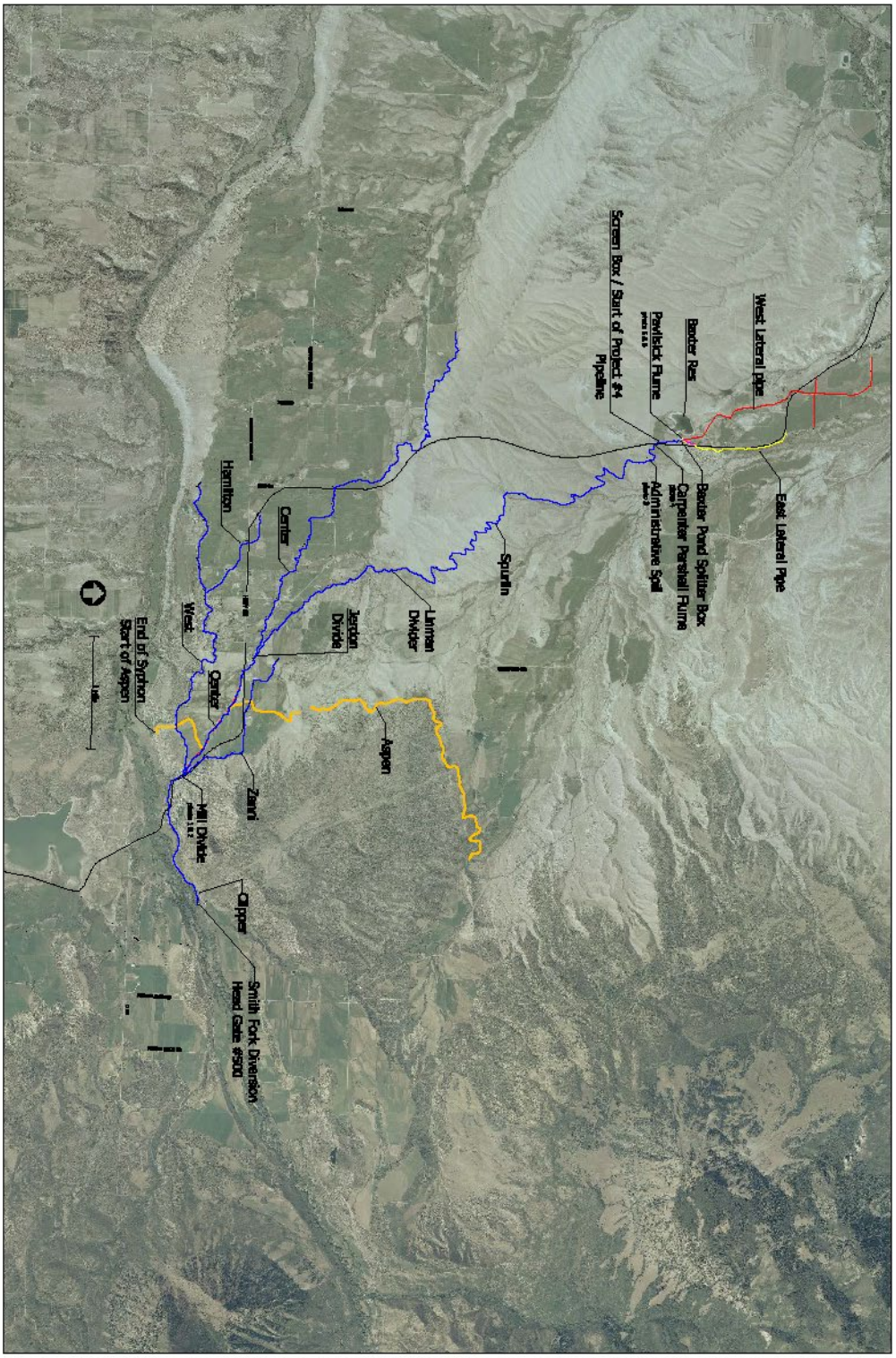
There will be a 6 ac-ft irrigation regulating reservoir and a 2 ac-ft sediment basin enlargement to 4ac-ft to assist with storage and sediment removal from the pipeline through settling of particulates. This Upper West Lateral portion of the Clipper Ditch is flatter in elevation and very susceptible to ditch erosion and subsequent soil particulates into the existing earthen canal create water quality issues and ditch maintenance problems. By installing a sediment basin and reservoir it will provide cleaner water flowing into the pipeline for the water users and alleviate inconsistent flow pressures providing a labor saving for the ditch companies as well as the agricultural users.

Basis of the Loan will be to provide costs for final engineering, design, construction and certification services.

Project Sponsor

The Crawford Clipper Ditch Company (CCDC) is a privately owned, non-profit mutually funded irrigation company that has been operating in Delta County since 1885. CCDC has several decreed water rights totaling 163.4 cubic feet per second (CFS) appropriated between 1884 and 1930. They also maintain a 10 cfs stock water right for use during the non-irrigation season. The CCDC supplies 3,480 acres of primarily hay land and pasture land with irrigation water. These on farm systems are largely traditionally irrigated with flood systems taken directly from the ditch lateral and gated pipe systems, although some sprinklers have been installed to a lesser extent. With the implementation of this pipeline, greater pressure will enable the stakeholders to invest in more efficient on-farm irrigation systems.

Project Service Area



UPPER SMITH FORK PRIORITIES

DITCH	WDID	ADMIN #	PRIORITY #	CFS	TOTAL IN DITCH	TOTAL IN CREEK	COMMENT
Preston	590	12088.00000	1	0.50	0.50	0.50	
Crisler	530	12088.00000	1	0.50	0.50	1.00	Transferred From Preston
Young	623	12677.00000	2	1.00	1.00	2.00	
Clipper	500	13076.00000	3	12.50	12.50	14.50	
Gove	554	13253.00000	1	1.00	1.00	15.50	
Pilot Rock	586	13255.00000	2	4.25	4.25	19.75	
Daisy	536	13798.00000	4	2.90	2.90	22.65	
Lone Rock	568	13868.00000	5	3.00	3.00	25.65	Can be taken at Needlerock Ditch
Wilson&Panky	619	13899.00000	6	1.50	1.50	27.15	
NR-Hice	1641	13904.00000	7	3.50	3.50	30.65	
Barnard	512	13904.00000	7	0.50	0.50	31.15	Transferred from NR-Hice
NR	501	14077.00000	8	4.20	7.70	35.35	
Shadeland	604	19413.12419	2	0.469	0.469	35.82	
Clipper	500	19413.12519	4	12.24	24.74	48.06	
Daisy	536	19413.13696	10	4.144	7.04	52.20	
Virginia	616	19413.13867	12	5.00	5.00	57.20	
NR	501	19413.13990	14	6.281	13.98	63.48	
Clipper	500	19413.15066	R19	1.034	25.77	64.52	
Pilot Rock	586	19413.15066	R19	0.150	4.4	64.67	
Virginia	616	19413.15066	19	1.019	6.02	65.69	
Clipper	500	19413.15432	R20	2.531	28.3	68.22	
Pilot Rock	586	19413.15432	20	0.375	4.78	68.59	
Virginia	616	19413.15432	20	0.582	6.6	69.18	
Clipper	500	19413.15797	24	1.275	29.58	70.45	
Pilot Rock	586	19413.15797	24	0.375	5.15	70.83	
Virginia	616	19413.15797	R24	0.601	7.2	71.43	
Clipper	500	19413.16162	27	3.187	32.77	74.61	
Daisy	536	19413.16162	R27	0.421	7.46	75.03	
Pilot Rock	586	19413.16162	27	0.188	5.34	75.22	
Virginia	616	19413.16162	27	0.356	7.56	75.58	
Clipper	500	19413.16527	28	3.393	36.16	78.97	
Daisy	536	19413.16527	28	0.225	7.69	79.20	
Gove	554	19413.16527	28	0.188	1.19	79.38	
NR	501	19413.16527	28	1.651	15.63	81.04	
Pilot Rock	586	19413.16527	28	0.188	5.53	81.22	
Virginia	616	19413.16527	R28	0.356	7.91	81.58	
Spring Brook Ditch	608	19413.16587	29	0.225	0.225	81.80	
Clipper	500	19413.16893	32	4.088	40.25	85.89	
Daisy	536	19413.16893	32	0.487	8.18	86.38	
NR	501	19413.16893	32	0.563	16.2	86.94	
Pilot Rock	586	19413.16893	R32	0.09	5.62	87.04	
Virginia	616	19413.16893	32	0.15	8.06	87.19	
Clipper	500	19413.17258	33	1.894	42.14	89.08	
Daisy	536	19413.17258	33	0.263	8.44	89.34	
NR	501	19413.17258	33	2.906	19.1	92.25	
Virginia	616	19413.17258	33	0.094	8.16	92.34	
Saddle Mtn.	502	19413.17288	34	0.60	0.6	92.94	Transferred from Montgomery Ditch
Clipper	500	19413.17623	35	1.987	44.13	94.93	
Daisy	536	19413.17623	35	0.094	8.53	95.02	
NR	501	19413.17623	35	0.563	19.66	95.59	
Pilot Rock	586	19413.17623	35	0.544	6.16	96.13	
Virginia	616	19413.17623	35	0.094	8.25	96.23	
Clipper	500	19413.17988	38	3.806	47.94	100.03	
Daisy	536	19413.17988	38	1.351	9.88	101.38	
Pilot Rock	586	19413.17988	38	0.750	6.91	102.13	
Virginia	616	19413.17988	38	0.263	8.52	102.40	
Clipper	500	19413.18353	39	3.638	51.57	106.03	
Daisy	536	19413.18353	39	0.15	10.04	106.18	
NR	501	19413.18353	39	0.881	20.55	107.06	

Project Description and Alternatives

The purpose of this project is to mitigate the impact of climate change and on-going drought in the Lower Gunnison Basin by utilizing existing resources efficiently and making available additional water previously lost to seepage and diurnal flows. CCDC has a master plan to pipe all of their open ditches. CCDC has previously completed Project 4, Zanni, and Project 3 pipelines of their master plan by winning Bureau of Reclamation (BOR) Salinity Control grants. CCDC currently has a BOR salinity grant to complete projects 1 and 2.

CCDC submitted the Upper West Lateral project but was not successful in obtaining a BOR salinity grant for this portion of the ditch, because the salt loading for this phase is not sufficient for CCDC to be competitive it the BOR Salinity Control program. For this reason CCDC looked and secured other grants (NRCS, CRWCD, WSRF) to complete this final portion of the master plan from the 3-way mill divider structure.

1. The no-action alternative.

2. Eliminate the Irrigation Reservoir and Sediment Basin portion.

3. Construct Upper West Lateral Projects A-D and cover unforeseen costs of the Jerdon BOR pipeline.

Alternative No. 1 was considered unacceptable since it would involve more water losses and less consistency in available water flow to stakeholders.

Alternative No. 2 was ruled out because this Upper West Lateral portion of the Clipper Ditch is flatter in elevation and very susceptible to ditch erosion and subsequent soil particulates into the existing earthen canal create water quality (Selenium and Salinity) issues and ditch maintenance problems.

Alternative No. 3 was selected. Although cost would be cheaper to get rid of the reservoir and sediment basin, By installing a sediment basin and reservoir it will provide cleaner water flowing into the pipeline for the water users and alleviate inconsistent flow pressures providing a labor saving for the ditch companies as well as the agricultural users.

Design Parameters

All construction plans (engineering deliverables) and construction practices will need to meet NRCS standards.

Practice 911 Engineering & Design by "TSP" Total Service Provider registered with the NRCS.
Practice 436 Irrigation Reservoir
Practice 430 Irrigation Pipelines
Practice 587 Structures for Water Control (concrete & valves)
Practice 912 Install Oversite & Inspection by TSP
Practice 913 Checkout Certification of practices by TSP

When the final plans are completed and stamped, they will be submitted to the NRCS office for engineering review. When the plans are approved materials acquisition, contractor selection and construction may begin. During construction the TSP will provide oversite and inspection which will be documented w/field notes & photos.

The Crawford Clipper Ditch Co. (CCDC) Smith Fork decree water flow rates are diurnal in the spring and early summer because they are based on snow melt. Later in the summer when CCDC shareholders call on their project (Crawford Reservoir) water the flows are more stable. However, This Upper West Lateral project only deals with decree water and is sized for anticipated high water flows. CCDC has determined that it may be possible to divert 94 cfs from their Smith Fork Creek diversion and then split that flow at the three way mill structure which would send close to 39 cfs to the upper west lateral. The pipelines, concrete structures, pond and sediment basin will be sized and designed to handle this high flow.

The pipe used for project A1&2 will be Advanced Drainage Systems (ADS) HP Storm pipe. This pipe is rated for 10 psi. Pipelines A1&2 will be open ended and will develop very little pressure.
Project B will use some HDPE pressure pipe to cross the Aspin gulch and then change to PVC pressure pipe. Project B pipeline also follows the elevation contour and develops very little pressure.

However, the shareholder users with outlets on Projects A1&2 and B are located north of the pipelines and can use the elevation drop to their farms for sprinkler irrigation. Project C (Drop Screen Pipeline) will be PVC pressure pipe and does have some elevation fall but is open ended so there is no chance for any water hammer/surging. The surplus head on this pipeline will be used for a drop self-cleaning screen before dumping into Project D Sediment Basin. At this point the decree water and or the project water enter the Sediment Basin. Project C (Dearmond Pipeline) will have two shareholder outlets with pressure available to the users.

Cost Estimate

Table 1: CCDC Upper West Lateral Pipeline and Water Optimization Project Estimate

PROJECT DESCRIPTION	MATERIAL AMOUNT	INSTALL/CONST AMOUNT	NEPA COMPLIANCE	TECHNICAL ASSISTANCE	PROJECT TOTAL
Project A1 (42" Pipeline & Appurtenances)	$ 132,084.45	$ 68,844.64	$ 9,671.05	$ 19,342.11	$ 229,942.25
Project A2 (42" Pipeline & Appurtenances)	$ 185,815.89	$ 95,517.91	NA	$ 27,148.08	$ 308,481.88
Project B (20" & 15" Pipeline & Appurtenances)	$ 152,035.01	$ 91,603.33	NA	$ 23,428.93	$ 267,067.27
Project C (30" & 10" Pipeline & Appurtenances)	$ 191,542.41	$ 106,759.04	NA	$ 28,746.05	$ 327,047.50
Project D (Regulating Reservoir)	$ -	$ 222,494.40	NA	$ 17,679.55	$ 240,173.95
Project D (Aspen Sediment Basin)	$ -	$ 46,989.70	NA	$ 3,639.18	$ 50,628.87
TOTAL MASTER PLAN COSTS	$ 661,477.76	$ 632,209.02	$ 9,671.05	$ 119,983.90	$ 1,423,341.73

Implementation Schedule

Harward Consulting is expected to complete the final design by end of 2023. Construction is expected to begin January 2024 and to be completed by End of 2024.

Permitting

All easements and rights of way have been arranged for. USDA-NRCS has cleared the project through the Environmental Evaluation Worksheet (CPA-52). The company holds all the contracts for the project and has the authority to enter into a loan. The Company expects to be exempt from 404 permitting by Statutory exemption, 33 CFR Section 323.4(a) 3. This will be confirmed with the Army Corps of Engineers.

Institutional Considerations

Entities that are, or may be, involved in the design, construction, and financing of the project include:

Crawford Clipper Ditch Company (CCDC); financing and project management. CCDC has hired Harward Engineering to complete the design and over-see construction.

Colorado Water Conservation Board (CWCB); Natural Resource Conservation Service (NRCS); Colorado River Water Conservation District (CRWCD); financing and construction.

The CCDC will be the lead for the financing, design, and construction of the project and will be the entity entering into contracts and agreements with the various entities for the services provided by each.

Financial Analysis

Several entities will be involved in financing the estimated total project cost of $1.4 million. The CCDC is applying for a loan from the CWCB in maximum amount of $500,000, to accommodate the project costs and increases that may occur in the construction time. The CCDC will need to cover any costs that exceed the estimated project cost. The actual or estimated amounts by entity are given in Table 2.

Table 2. Funds acquired by Entity

Funding Source	Funded Amount
USDA-NRCS Water Management Entity (WME)	$406,960
CRWCD Community Funding Partnership (CFP)	$150,000
CWCB-Gunnison Basin Roundtable and Statewide WSRF	$225,000
BOR -Salinity	$229,942
CWCB Loan Ask	**$500,000**
TOTAL	$1,511,902

The CCDC is requesting a 30-year loan from the CWCB. The standard agricultural lending rate would be 1.8%, resulting in annual payments of $21,581.88. Table 3 is a summary of the financial aspects of the project. Annual assessments will increase from $11 per share, up to $17.74 per share with a Loan of $500,000.

Table 3. Financial Summary

Project Cost	$1,423,341.73
Loan Amount	$500,000
CWCB Loan Amount including 10% loan reserve	$500,000
Number of shareholders	114
Number of shares of stock	3200
Current Assessment per share	11
Future Assessment of share	$17.74

Since all other funding for the project is in the form of grants, the Company would have no other debt service on this project. Operation and maintenance costs are expected to decrease with the new diversion structure, and can be accommodated by the Company's existing budget.

Credit worthiness

CCDC has no existing debt. Rates were increased in 2022 and 2023 annual meeting. Rates in general are set to cover anticipated annual normal operating costs and develop reserve cash in the January annual meeting. Financial Summaries attached and indicates average to strong ability to repay the project.

Financial summary: Losses have occurred when project cost expands and exceeds budget or emergency repairs are incurred that were not in the budget. Generally, those losses are covered in the next budget. CCDC books are submitted on a cash basis. It is important to read the last line of the P&L when CCDC has project work. All charges to project work are approved in advance. Other income net of expense usually covers ordinary net loss.

In 2022, the CCDC repaired a pond leak. When BOR funds were exhausted, the CCDC paid the difference. Additionally, in 2022 meters were replaced that failed out of warranty ($13,079). Those costs exceeded budgeted cost. Those meter purchases created an ordinary income loss of ($10,575.95). However, when all other income is included, the CCDC had income of $7,784. That income was used to pay down the mortgage of the new office. The final books have not been submitted by the CPA for review.

In 2021, depreciation and a GJ entry (12/31/2021) to account for BOR spending by our accounting firm accounting created $10,000 loss. Our books showed a $2400 income (12/30) prior to the CPA GJ entry on 12/31. However, the CCDC had other net income of $31,044.94. That profit was used to pay down our new building cost. That building is not carried on a P& L. It is carried on the balance sheet as an asset.

In 2020, the CCDC cleaned out the ditch from the head-gate to the mill the final cost was $26,151 151 vs a budget of $6,000. That cost overrun was paid by other income that is described in the P&L sheet. Additionally, CCDC supplied construction inspectors to oversee the project 3 pipeline. The cost of supplying inspectors was $24,696.06. That cost plus markup was covered by other income that was invoiced to the BOR project. When other income is read on the bottom line of the P&L sheet, CCDC had income of $8,404.79. That income was used to start construction on the CCDC office building. The balance sheet reflects that.

(Please see financial statements)

Alternative financing considerations

CCDC has obtained grants from the; BOR, NRCS, CWCB and CRWCD for approximately $1,011,902 in cost share (grant) to cover 71% of the construction costs. The NRCS has offered the CCDC “Post Inflationary Supplemental Payment” (PISP) that can potentially offer more grant funds for Projects A2-D upon their certified completion.

Collateral

As security for the CWCB loan the CCDC can pledge assessment income, and the project itself.

Social and Physical Impacts

The project will have no significant social impacts, since it will assure the continued operation of agriculture water to shareholders. The project will have minor physical impacts, once construction is complete. The piping will be in the same location as the ditch is currently. The landowners have already signed rights-of-way and shareholders approved the loan though an annual meeting.

Conclusions

1. The Crawford Clipper Ditch Company is an incorporated entity in the State of Colorado with the ability to enter into a contract with the CWCB for the purpose of obtaining a Construction Fund loan.

2. Rights-of Way easements are adequate for the construction of this project.

3. The project would provide for the continued delivery of irrigation water to 114 share-holders.

4. The total estimated cost of the project is $1.4 million and this will be financed, in part, by in house financing, in-kind services, and grants totaling $1,011,902.

5. Crawford Clipper Ditch Company is eligible for a loan from the CWCB and has the financial ability to be a low risk loan.

6. The project is technically and financially feasible.