



COLORADO WATER CONSERVATION BOARD



WATER SUPPLY RESERVE ACCOUNT 2007-2008 GRANT APPLICATION FORM

Ridgway Ditch and Lake Otonawanda Improvement Project

Name of Water Activity/Project

River Basin Location

\$50,000 Basin
\$59,500 Statewide

☒

Basin Account

☒

Yes

☒

Statewide Account

☐

No

Amount of Funds Requested

Please Check Applicable Box

Approval Letter Signed By
Roundtable Chair and
Description of Results of
Evaluation and Approval
Process

*** For the Basin Account, the Application Deadline is 60 Days Prior to the Bimonthly CWCB meeting. The CWCB meetings are posted at [Hwww.cwcb.state.co.us](http://www.cwcb.state.co.us)H and are generally the third week of the month.**

*** For the Statewide Account, the Application Deadline is 60 Days Prior to the March and September CWCB Board Meetings.**

* In completing the application you may attach additional sheets if the form does not provide adequate space. If additional sheets are attached please be sure to reference the section number of the application that you are addressing (i.e., A.1. etc.).

Instructions: This application form must be submitted in electronic format (Microsoft Word or Original PDF are preferred). The application can be emailed or a disc can be mailed to the address at the end of the application form. The Water Supply Reserve Account Criteria and Guidelines can be found at [Hhttp://cwcb.state.co.us/IWMD/H](http://cwcb.state.co.us/IWMD/H). The criteria and guidelines should be reviewed and followed when completing this application. You may attach additional sheets as necessary to fully answer any question, or to provide additional information that you feel would be helpful in evaluating this application. Include with your application a cover letter summarizing your request for a grant. If you have difficulty with any part of the application, contact Rick Brown of the Intrastate Water Management and Development (Colorado Water Conservation Board) for assistance, at (303) 866-3514 or email Rick at [Hrick.brown@state.co.us](mailto:rick.brown@state.co.us)H.

Generally, the applicant is also the prospective owner and sponsor of the proposed water activity. If this is not the case, contact the Rick Brown before completing this application.

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Part A. - Description of the Applicant (Project Sponsor or Owner);

1.	Applicant Name(s):	Town of Ridgway, Colorado	
	Mailing address:	P.O. Box 10 Ridgway, CO 81432	
	Taxpayer ID#:	846000714	Email address: <i>gclifton@town.ridgway.co.us</i>
	Phone Numbers: Business:	(970) 626-5308 x12	
	Home:		
	Fax:	(970) 626-3962	

2. Person to contact regarding this application if different from above:

Name:	Greg Clifton
Position/Title	Town Manager

3. Provide a brief description of your organization below: see “Description of Applicant” in Part 2 of Criteria and Guidance for required information.

The Town of Ridgway is a home rule municipality located in Ouray County, Colorado, and first incorporated in 1891.

Address: 201 N. Railroad Street, P.O. Box 10, Ridgway, Colorado 81432

Phone: (970) 626-5308

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4. If the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here.

Part B. - Description of the Water Activity – Please Refer to Criteria and Guidance Document for Eligibly Requirements

1. Name of water activity/project:

Ridgway Ditch and Lake Otonawanda Improvement Project

What is the purpose of this grant application?

☐

Environmental compliance and feasibility study

☒

Technical Assistance regarding permitting, feasibility studies, and environmental compliance

☒

Studies or analysis of structural, nonstructural, consumptive, nonconsumptive water needs, projects

Study or Analysis of:

☒

Structural project or activity

☐

Nonstructural project or activity

☐

Consumptive project or activity

☐

Nonconsumptive project or activity

☐

Structural and/ or nonstructural water project or activity

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2. Describe how the water activity meets these **Threshold Criteria**.

1. The water activity meets the eligibility requirements outlined in Part 2 of the Criteria and Guidelines.

This application requests technical assistance regarding design, cost estimates and permitting associated with enlargement of municipal reservoir.

2. The water activity is consistent with Section 37-75-102 Colorado Revised Statutes. The requirements/language from the statute is provided in Part 3 of the Criteria and Guidelines.

This project will fully comply with the Prior Appropriation Doctrine of the State of Colorado, and specifically the decreed water storage rights held by the Town of Ridgway.

3. The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRT's evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s) if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair simply reference that letter.

4. The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes. The requirements/language from the statute is provided in Part 3 of the Criteria and Guidelines.

As provided in Section 10.1.6 of the Statewide Water Supply Initiative report (SWSI Phase I), and specific to the Gunnison Basin, numerous M&I projects within the basin have been identified to reasonably meet projected 2030 water demands. The report specifically provides that

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[k]ey activities related to water supply planning and basin specific issues raised throughout the meetings and SWSI process with respect to Gunnison Basin M&I and SSI demands include the following:

- Growth in the headwaters regions of Ouray and Gunnison Counties will require additional water management strategies.
- Augmentation supplies are needed for existing and future M&I growth in Ouray County and UGRWCD.

The Ridgway Ditch / Lake Otonawanda Improvement Project will help meet projected growth in the Town of Ridgway in Ouray County and provide augmentation supplies that are needed to meet calls by senior users. While water contracts are available out of Ridgway Reservoir to supply augmentation water for downstream users on the Uncompaghre River, the Town's water supply can be called by senior users above the Reservoir (the most recent call occurred in 2002). The need for the project is paramount.

The Gunnison Basin Roundtable is currently developing its Consumptive and Nonconsumptive Needs Assessments for submittal to the IBCC. Within this process, the M&I needs of Ouray County are again being emphasized.

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3. For Applications that include a request for funds from the Statewide Account, describe how the water activity meets the **Evaluation Criteria**. See Part 3 of Criteria and Guidelines.

The Project will affect interbasin needs at the municipal level. While the project is primarily municipal, some collaboration will occur with affected landowners near the involved water infrastructure, other water rights holders utilizing water from Beaver Creek and Cottonwood Creek.

Receiving funding from the Account will make a significant difference in the implementation of the collection, diversion and storage of the Town's municipal water supply. The urgency couldn't be greater. The Town's water rights were subject to a call in 2002, and making improvements to the ditch collection system and raw water storage will greatly enable the Town to withstand future calls on the river that place its municipal water supply at risk.

The length of time needed to perform the study is less than one year. Upon completion of the feasibility study, immediate measures will be pursued to start securing the necessary funding and permitting to perform the improvements. The applicant is a municipal government with significant experience in water resources, and has the ability to properly oversee and administer this project.

The Town of Ridgway is providing a 20% cash match. The Town's water enterprise fund is sufficient to provide the necessary cash match, but leveraging outside dollars is absolutely critical to the success of the project.

The study will help complete a water rights analysis and needs assessment, including consumptive and/or non-consumptive needs, specific to the Ridgway community. The study will meet one or more of the water management objectives identified in the Statewide Water Supply Initiative as more specifically identified in Item 2 above.

The Ridgway Ditch / Otonowanda improvement project will help promote water conservation and efficiency, notably through the identification of improvements to the Town's system that will reduce seepage and evaporative losses, and increase efficiency within the diversion and collection systems. The Town of Ridgway has a Conservation Plan.

The study will provide a high level of benefit to Colorado in relationship to the amount of funds requested. Notably, the funding provided will provide critical information and data needed to proceed in the most effective manner toward the improvement and protection of the Town's water supply.

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4. Please provide an overview of the water project or activity to be funded including – type of activity, statement of what the activity is intended to accomplish, the need for the activity, the problems and opportunities to be addressed, expectations of the participants, why the activity is important, the service area or geographic location, and any relevant issues etc. Please include any relevant TABOR issues that may affect the Contracting Entity. Please refer to Part 2 of Criteria and Guidance document for additional detail on information to include.

Background & Need

The Town of Ridgway service area includes the current service area within the corporate boundaries of the Town, and that area identified with the Urban Growth Boundaries as established in 2000. This is not a formal service area but would represent the likely are for service now and projected into the future. The Town does not provide extraterritorial water service, although there are limited residential uses within the Town that are served by Tri-County Water Conservancy District.

Growth in Ouray County is directed primarily within the two municipalities, the Town of Ridgway and the City of Ouray, by operation of mirroring intergovernmental with the County of Ouray and both municipalities. Growth outside the municipal urban growth areas is largely limited to one unit per 35 acres. With these land use policies in place, Ridgway has seen healthy growth in recent years, and its growth rate has been twice that of Ouray County. In 2000, the Region 10 League for Economic Assistance and Planning prepared a study detailing demographic projections in the region. The report concluded that Ridgway's growth rate will continue to outpace Ouray County's rate by two to one, with a projected Town population of 1668 by 2025, a near-doubling the current population. The Colorado State Demographer's Office projects an overall 65% growth in Ouray County by 2030. It is anticipated that the Town of Ridgway will exceed this estimate. The population in July, 2006, was estimated to be 979.

In terms of water demand, a joint study concerning water treatment, as conducted by the Town of Ridgway and Tri County Water Conservancy District in November, 2005, ("Tri County Study"), Ridgway's 2005 population had an average annual demand of 156.23 acre feet, and an average daily demand of 140,000 gpd. The peak day demand ratio was estimated to be 2.2. The Tri County Study was performed by Carter Burgess, Wright Water Engineers and Del-Mont Consultants.

The Town's principle water rights are diverted from Beaver Creek and conveyed through the Ridgway Ditch. The headgate and diversion structure are archeic in design and function, and are in desperate need of an engineered and designed structure that will enable a reliable and low – maintenance operation.

The diverted water can be stored in Lake Otonawanda (a reservoir). The Town has some vulnerability to senior calls on the river. While Ridgway Reservoir has available contract augmentation water for senior downstream users, the Town is subject to calls above the reservoir and below the Town's headgate on Beaver Creek. Such was the case in 2002. The Division Engineer has been anxious to see the Town augment its water source.

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Additionally, the Lake is significantly under its decreed storage right. The reservoir is decreed for 746 AF with an 1890 appropriate date. Based on some assumptions, the estimated volume currently ranges from 75 to 150 AF. Increasing the volume would greatly enable the Town to deal with augmentation issues and increase its stored volume for increased demands. Notably, there is no pumping or siphoning of storage water out of Lake Otonwanda. Rather, water diverted through the Ridgway Ditch bypasses the reservoir and feeds the Town's water treatment plant by direct flow, while storage waters within the reservoir are not directly used for municipal purposes. This was noted in the 2005 Tri County Study:

The reservoir is being used primarily for aesthetic purposes. Otonwawand Reservoir is an important component of the Town's water system and could possibly be used for future augmentation or a direct source of supply. (p.1-5).

In 2008, the Town completed construction of a new water treatment plant utilizing micro-membrane filtration, which has increased the Town's treatment capacity and ability to handle increased direct flows from Ridgway Ditch and eventually from Lake Otonwanda.

Project Activity

The project would provide an initial engineering study to determine the feasibility and scoping of dredging and enlargement of Lake Otonawanda, with bentonite amendment, so that the Town could utilize storage water and meet future growth demands and augmentation needs during periods of call on the river. The study will include an analysis of needed outflow infrastructure to provide for direct releases of stored water from Lake Otonawanda to the Town's water treatment plant. The study would identify permitting and environmental clearances, preliminary concept design, and preliminary engineer's cost for the eventual project construction. Should funding allow, the study would also include analysis of the Town's diversion and head gate structure above the reservoir. The Tri County Study concluded that seepage loss from this ditch is in the area of 35 to 40 percent. (p. 1-5).

The scope of services for the study is provided below.

The Town of Ridgway will be the entity that is involved with this project, and will provide match funding out of its water utility fund. This fund is an enterprise fund under TABOR, and does not receive more than 10% of its revenue from government sources. It is sustained by user rates and connection fees. Funding for the project will comply with TABOR and all other applicable laws and regulations.

Attachments include a map of (1) the Town, project site and diversion point; (2) Town corporate boundaries and urban growth boundaries; (3) pictures of Lake Otonwawanda; (4) brief summary of task descriptions; and (5) matrix of scope of services and estimated costs.

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5. Please summarize the proposed scope of work. Please refer to Part 2 of the Criteria and Guidance document for detailed requirements. On the following page there is an example format for the Scope of Work. You can use the example format or your own format, provided that comparable information is included.

The scope of work should outline by task how the water activity will be accomplished. It is important that the scope of work detail the specific steps, activities/procedures that will be followed to accomplish the water activity and the specific products/deliverables that will be accomplished. The scope of work should include but not be limited to: task description, key personnel, budget, schedule and deliverables and the final report/project documentation upon completion of the water activity.

Scope

The table as attached includes a breakdown of tasks, with associated work billings and other expenses. In general, the project will include the following tasks:

1. Update of Town overall water needs (update existing information and reports as referenced)
2. Evaluation of Existing Water rights
3. Analysis of Alternatives
4. Reservoir Feasibility and Scope
5. Identificaion of Permit Requirements and Issues
6. Ridgway Ditch & Diversion Structure
7. Estimation of Costs
8. Evaluation of Financing Sources
9. Project Coordination and Meetings
10. Report Preparation

Budget

The line item projected costs are outlined in the attached matrix. **The estimated cost of this initial study is \$136,880. The Town of Ridgway is seeking \$50,000 in Basin funding, \$59,500 in Statewide funding, and will provide the remaining \$27,380 in matching cash. The cash match represents a 20% match.**

Timeline

It is anticipated that the project upon funding, the Town will seek a request for proposals for the report, followed by award of the work and performance of the study. The entire study is projected to be concluded within a six-month time frame.

Suggested Format for Scope of Work

The scope of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the scope of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. Summarized below is a suggested format for the Scope of Work.

I. Task 1

- Description of task:
- Method or procedure that will be used or followed to accomplish the task and identify who will undertake the task:
- Description of the major deliverables/products that will be produced upon successful completion of the task:

Task 2 (Repeat the above format for each task)

II. Personnel

Provide a list of key water activity/project participants and their qualifications to accomplish the water activity/project. If specific individuals or firms have not yet been identified indicate the types of expertise that will be sought (i.e. professional engineering firm, registered land surveyor, aquatic biologist etc.).

III. Budget

A detailed budget by task, which includes the level of effort (hours) and rates. Any unit costs or other direct costs must be specified (i.e. mileage, number of miles, dollars per mile). For an example budget format – See Attachment 1 at the end of this application.

If applicable, the budget should also detail the source and amount of matching funds and/or in-kind contributions, if any. If applicable, the budget should also include any other outstanding or previously applied for funding that also supports the water activity:

IV. Schedule

A detailed project schedule including key milestones and the dates these are expected to be completed.

NOTE: Costs incurred prior to execution of a contract or purchase order are not subject to reimbursement.

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6. Water Availability and Sustainability – this information is needed to assess the viability and effectiveness of the water project or activity. Please provide a description of each water supply source to be utilized for, or the water body to be affected by, the water activity. For water supply sources being utilized, describe its location, yield, extent of development, and water right status. For water bodies being affected, describe its location, extent of development, and the expected effect of the water activity on the water body, in either case, the analysis should take into consideration a reasonable range of hydrologic variation.

Water Rights and Locations

The water supply for this project would involve the direct diversions of surface water from Beaver Creek through the Ridgway Ditch. The Town owns water rights for both the direct flow and storage of water from Beaver Creek. The water rights owned by the Town related to this structure and diversion are listed in the below table:

Water Right Name	Adjudication Date	Appropriation Date	Admin No.	Case No. (Priority)	Decreed Use	Rate / volume (absolute)	Source
Ridgway Ditch	5/15/1897	6/1/1882	11840	(72)	Storage, Domestic	2 cfs	Beaver Creek
Ridgway Ditch	5/15/1897	6/1/1890	14762	(131)	Irrigation, Storage	25 cfs	Beaver Creek
Ridgway Ditch	8/2/1905	6/1/1890	19904, 14762	CA 1286	Domestic	5 cfs	Beaver Creek
Lake Otonawanda*	8/2/1905	6/1/1890	20269, 14762	CA 1286	Domestic	746 af	Beaver Creek

* Lake Otonawanda is located within the Cottonwood Creek Drainage Basin

The source of water for the project is Beaver Creek within the Dallas Creek drainage basin. The basin is tributary to the Uncompahgre River. The diverted water is transported through Ridgway Ditch into the Cottonwood Creek Drainage, where Lake Otonawanda is located. Lake Otonawanda is owned by the Town. Please refer to the attached map depicting location of headgate diversion, ditch and reservoir.

Yield

In terms of yield, data modeling that was performed during the Tri-County Study produced the following findings as detailed within the final report:

The daily output from the model over the 10-year study period averaged approximately 1,800 AF/yr of flow (1.52 AF/acre of drainage area) in Beaver Creek above the Ridgway Ditch headgate. Based on streamflow equations set forth in the USGS publication, *Estimation of Natural Stream flow in Western Colorado*, 1985, the estimated average annual streamflow in Beaver Creek at the Ridgway headgate is 2,364 AF/yr (2.0 AF/acre of drainage area). Given the relative dryness of the 1992 through 2002 period, the GUNMOD model estimate appears reasonable and conservative.

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The flow in Beaver Creek available for diversion by the Ridgway Ditch under the senior 2 cfs and 5 cfs water rights is calculated by review of the call records for the Uncompahgre River. During periods when the Ridgway Ditch senior 2 cfs was in priority, the available flow for diversion by the Ridgway Ditch was 2 cfs, or the modeled flow in Beaver Creek whichever is less. When the Ridgway Ditch was not in priority, no flow was available for the Ridgway Ditch. The same approach was used for the Ridgway Ditch 5 cfs water right. The 25 cfs water right for irrigation was not included in the analysis since it does not include domestic use.

It is important to note, that historically, the Water Commissioner has deemed a call on the Ridgway Ditch as a “futile call.” However, to provide a conservative preliminary approximation of the firm yield of the Ridgway Ditch 2 cfs senior right, the possibility of a futile call scenario was not included in the analysis. This might be a conservative approximation since the 1994 and 1996 calls may not have affected the Ridgway Ditch to the extent used in the analysis.

* * *

The Ridgway Ditch 2 cfs senior water right was out-of-priority from calls emanating from the Dallas Creek drainage 37 days out of the 3,650 days over the 10-year study period. The Ridgway Ditch was out-of-priority from calls on the lower Uncompahgre River during 297 days over the 3,650-day study period.

Projected Water Demands

In terms of meeting projected water demands the Tri-County Study concluded that the first alternative -- a joint treatment facility located at the existing Ridgway plant site, utilizing water exclusively from Beaver Creek -- would meet combined needs of both Tri-County and the Town of Ridgway in 2025 with some improvements to Lake Otonawanda.

The calculated storage required for both Ridgway and Tri-County water demands under Alternative 1 ranges from 310 AF/yr in 2005 to 440 AF/yr in year 2025. Lake Otonawanda is a likely candidate for the storage under this scenario. Since its decreed amount is 746 AF, it appears to have adequate legal capacity. However, the physical capacity would most likely require expansion and the outlet works and pipeline would require replacement.

It is noteworthy that Ridgway’s demands, exclusive of Tri-County, would be significantly less than the range identified. Increasing Lake Otonawanda’s capacity, even in an incremental amount, would enable the Town to meet future water projections and provide needed augmentation water during periods of call on the river.

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7. Please provide a brief narrative of any related or relevant previous studies.

Ridgway/Tri-County Water Feasibility Study (Carter Burgess, Inc., Del-Mont Consultants, Inc., and Wright Water Engineers, Inc., May 15, 2004).

As referenced above, the Town of Ridgway and the Tri-County Water Conservancy District partnered on a feasibility study related to the treatment of M&I water. Tri-County currently pumps treated water from Project 7 in Montrose to its service area south of Ridgway Reservoir, and is exploring a new treatment facility in the Ouray County area. This study focused on the possibility of a joint treatment facility, which ultimately was not pursued.

Town of Ridgway Water Treatment Plant Upgrade (Consolidated Consulting Services, February 8, 2006).

The Town conducted an engineering study related to water treatment capacity and upgrade to its existing water treatment plant, which was operating at full capacity. The study provided the basis for the eventual replacement of the plant which was concluded in 2008.

Ouray County Housing Needs Assessment (Economic & Planning Systems, May 9, 2008)

While the Study was conducted for purposes of evaluating housing needs, it was used to substantiate demographic trends and population statistics as referenced herein.

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8. Additional Information – If you feel you would like to add any additional pertinent information please feel free to do so here.

This project represents an urgent and quite relevant undertaking to secure the municipal water supply for existing and future populations. The project will provide the framework and cost analysis to precede the actual improvements which will be pursued with due diligence.

The above statements are true to the best of my knowledge:

Signature of Applicant:



Print Applicant's Name: Greg Clifton

Project Title: Ridgway Ditch and Lake Otonawanda Improvement Project

Date: 11/13/08

Return this application to:

Mr. Todd Doherty
Intrastate Water Management and Development Section
COLORADO WATER CONSERVATION BOARD
1580 Logan Street, Suite 600
Denver, CO 80203

To submit applications by Email, send to: todd.doherty@state.co.us

To submit applications by Fax, send to: (303) 894-2578

For questions, call Telephone No.: (303) 866-3426

Reference Information

The following information is available via the internet. The reference information provides additional detail and background information regarding these criteria and guidelines and water policy issues affecting our state.

Sample Contract and Purchase Order – <http://cwcb.state.co.us/TWMD/RelatedInformation/ToolsResources/>

Colorado Water Conservation Board Policies

Loan and Grant policies and information are available at – <http://cwcb.state.co.us/Finance/>

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Water Supply Reserve Account Criteria and Guidelines –

<http://cwcb.state.co.us/TWMD/RelatedInformation/ToolsResources/>

Interbasin Compact Committee and Basin Roundtables

Interbasin Compact Committee By-laws and Charter (under Helpful Links section) –

<http://ibcc.state.co.us/Basins/IBCC/>

Legislation

House Bill 05-1177 - Also known as the Water for the 21st Century Act –

<http://cwcbweblink.state.co.us/DocView.aspx?id=105662&searchhandle=28318>

House Bill 06-1400 – Adopted the Interbasin Compact Committee Charter –

<http://cwcbweblink.state.co.us/DocView.aspx?id=21291&searchhandle=12911>

Senate Bill 06-179 – Created the Water Supply Reserve Account –

<http://cwcbweblink.state.co.us/DocView.aspx?id=21379&searchhandle=12911>

Statewide Water Supply Initiative

General Information – <http://cwcb.state.co.us/TWMD/>

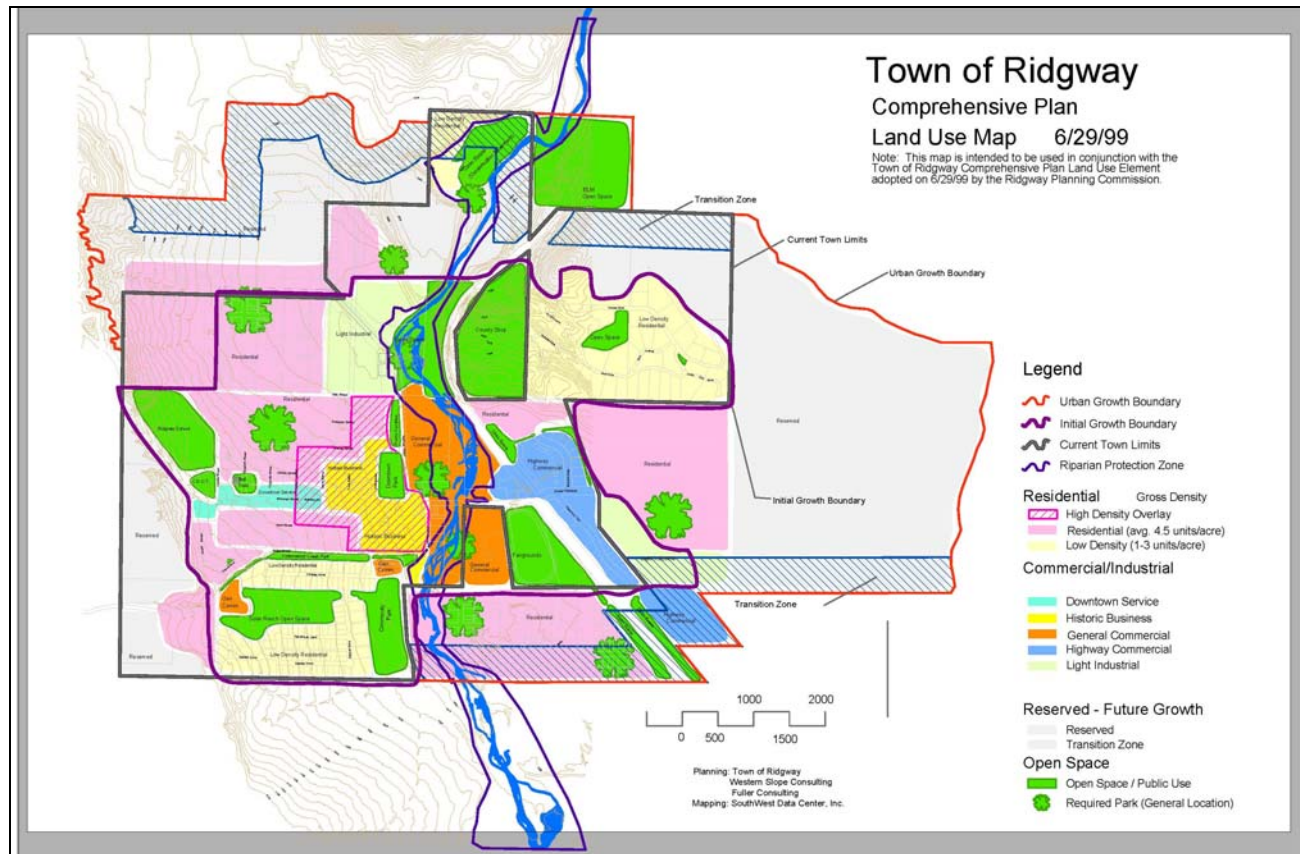
Phase 1 Report – <http://cwcb.state.co.us/TWMD/SWSITechnicalResources/SWSIPhaseIReport/>

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Attachment 1



Attachment 2



Attachment 3



Lake Otonawanda on southwest side, looking east



Dam on east side of Lake

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Close up of Lake Otonawanda looking south (from north shore)



Beaver Creek Diversion with “grizzly” ... this the alluvium fills this headgate frequently during high runoff and storm events, requiring regular maintenance and considerable travel

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Ridgway Ditch paralleling access road; the ditch requires significant maintenance and frequently overtops during storm events; some residential development in the area is also presenting issues of source water protection

Attachment 4

Brief Task Descriptions

Task 1: Town Water Needs

This task entails updating the Town's water needs as originally analyzed in the Tri-County – Town of Ridgway Feasibility study prepared by Carter Burgess in 2005 (2005 Study). The study will start with reevaluation of the town population and water demands under current and future demand scenarios in relation to storage requirements from Otonowanda Reservoir, utilizing existing data and necessary refinement.

Task 2: Existing Water Rights

This task entails reviewing the Town's existing water rights as provided in the 2005 Study. The consultant will review any additional water rights procured by the town from recent annexations, and provide an average year and dry year yield analysis to assess deliveries to the reservoir. The consultant will also analyze reservoir operations based on water rights yields, evaporation, seepage, and water demand scenarios. Finally, the consultant will analyze exchange potential to meet downstream water rights calls from leases of water from Ridgway Reservoir and deliveries from Otonowanda Reservoir.

Task 3: Alternatives Analysis

Based on the yield and exchange analysis performed in Task 2, the consultant will provide alternatives analysis to assess use of Otonowanda Reservoir releases, versus purchasing additional water rights, or leases from Ridgway Reservoir to meet downstream calls.

Task 4: Reservoir Feasibility and Scope

The consultant will provide both topographical and bathometric surveys to provide an estimate of the existing and potential capacity of Otonowanda Reservoir. Project components and a conceptual design for reservoir improvements will follow.

Task 5: Identifying Permitting Issues

The consultant will conduct a wetland delineation of the project area and outline potential permitting issues including but not limited to; Section 404 Permitting, Clean Water Act, Threatened and Endangered Species, etc. In addition, the consultant will work closely with the Colorado State Engineers Office, Dam Safety Division, on dam safety regulatory issues.

Task 6: Ridgway Ditch—Diversion Structure and Ditch Conveyance System

The Ridgway Ditch serves as the sole supply for Otonowanda Reservoir. The existing diversion structure is old and is in need of repair. Given the remoteness of the diversion structure, the consultant will provide conceptual plans for a diversion structure that would require minimal maintenance. The ditch conveyance system is also remote and of considerable length. Given seepage issues, the consultant will provide alternatives including conceptual costs for either lining or piping the ditch conveyance system.

Task 7: Cost Estimates

The consultant will provide conceptual cost opinions on the construction of Otonowanda Reservoir improvements as determined in the conceptual design as identified in Task 4. In addition, conceptual cost estimates would be provided for the permitting issues identified in Task 5.

Task 8: Sources of Funding

The consultant will provide a list of potential funding entities. In addition, requirements for each funding entity would be delineated. Lastly, an economic analysis would be provided to put forth the framework for financing the reservoir improvements.

Task 9: Project Coordination and Meetings

At least two onsite meetings will be conducted during the project and presentation of the findings of the project. In addition coordination with permitting entities including Army Corps of Engineers and the Colorado Division of Water Resources, Dam Safety Engineer.

Task 10: Report Preparation

Based on the tasks identified above, the consultant will provide a report, with applicable tables, calculations, and figures based on the findings of the analysis.