

Colorado Water Conservation Board

CONSTRUCTION FUND
AND
SEVERANCE TAX TRUST FUND
PERPETUAL BASE ACCOUNT

WATER PROJECT LOAN PROGRAM GUIDELINES



Colorado Water Conservation Board
Department of Natural Resources

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WATER PROJECT LOAN PROGRAM - GUIDELINES

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1.0 Introduction

1.1 Use of Guidelines

These Guidelines for the CWCB Water Project Loan Program provide an overview of steps for obtaining a CWCB loan, including preparation of the Loan Feasibility Study. They are based upon generally accepted practices for sound planning, design, and construction of water resource projects. The consulting firms or individuals responsible for the planning, design, and construction activities are expected to develop specific analytical procedures that are appropriate for a particular project analysis. The Guidelines have been written to assist the project sponsor and the consultant with the loan application process and with planning and implementing a cost-effective project for the maximum benefit to Colorado water users. Project sponsors and their consultants are encouraged to consult frequently with the CWCB staff during planning, design, and construction. The process and procedures outlined here are intended to be as flexible as possible and to be responsive to the needs of the project sponsor.

Adopted CWCB Policies and Procedures pertaining to the operation of the Water Project Loan Program are available on the CWCB website at www.cwcb.state.co.us. Loan applicants are encouraged to review these during the preparation of a loan request.

1.2 Steps to Obtain a CWCB Loan

The basic steps to follow to obtain a CWCB loan are as follows:

1. Staff Contact – The project sponsor should contact the CWCB staff to discuss the scope of the proposed project, the schedule, applicable interest rates, etc. The CWCB staff may meet with the applicant to discuss the Loan Feasibility Study and Loan Application process, and any planning or engineering work already completed or underway. Typically a field meeting will be set up to look at the proposed project site during the loan review process.
2. Loan Feasibility Study - The Loan Feasibility Study and Loan Application are submitted by the 1st day of the month preceding the month of the CWCB meeting. (i.e. February 1st for the March Board meeting.) Loans in excess of \$10,000,000 must be submitted by August 31st, for consideration at the November CWCB meeting. A Loan Feasibility Study is required for any funding request from the CWCB. Loan Feasibility Studies are generally conducted by consultants or consulting firms selected by the applicant, with the advice and assistance of the CWCB staff.
3. Loan Review Recommendation - The CWCB staff will review the completed Loan Feasibility Study and will make a recommendation to the Board regarding the feasibility of the project and the loan. The loan sponsor will be notified if changes are required in the submitted Loan Feasibility Study. Copies of the staff recommendation will be provided to the loan sponsor prior to the CWCB meeting.
4. CWCB Loan Authorization – CWCB staff will present the loan recommendation to the Board at their bi-monthly meetings. Loans in excess of \$5,000,000 are recommended for inclusion in the Construction Fund Bill introduced in January, with funding available the following July 1.
5. Contract Execution - Following Board approval, the project sponsor will be contacted by the CWCB Contracts Manager to begin the loan contracting process. No State funding can be provided until a signed State contract is in place.
6. Design and Construction – Following Board approval the project sponsor will also be contacted by the CWCB Design and Construction Manager to begin discussing the design and construction process. Items such as the following will be discussed:
 - a. Project Schedule, “Need Funding” Date, and Project Contacts
 - b. Design/Construction Process and Requirements/Bidding Procedures
 - c. Loan Disbursement Procedures
7. Loan Repayment – At the end of project construction, and following issuance of a Letter of Substantial Completion by the Design and Construction Manager, and payment of the Interest During Construction (IDC) owed, the project sponsor will begin making permanent annual loan payments.

This section provides a summary of the steps in obtaining a CWCB loan. Additional information is available on the CWCB website at www.cwcb.state.co.us.

1.3 Loan Feasibility Study - Overview

A Loan Feasibility Study is a technical report, prepared by an engineer, consultant, and/or project sponsor that establishes and documents the following:

- a. the need for the project;
- b. the technical, economic, institutional and financial feasibility of the project;
- c. the social and environmental impacts of the project

A Loan Feasibility Study differs from a reconnaissance-level planning study, which is a broad conceptual overview of a wide range of options, possibilities and opportunities. The Loan Feasibility Study focuses in more specific detail on a limited number of project alternatives.

The Loan Feasibility Study elements will vary from project to project, but generally will include the following:

- Purpose – A description of the need and purpose of the project.
- Sponsor – A description of the project sponsor including type of organization, service area, water facilities, revenue sources, existing rates, etc.
- Water Demands and Water Rights – A description of existing and future water demands, and the adequacy of water rights and the quality of water sources with respect to the intended use of the water.
- Analysis of Alternatives – A formulation and evaluation of potential alternatives for accomplishing the project sponsor's objective.
- Selected Alternative – A detailed description of the selected alternative, including a preliminary design and construction cost estimate, and a project schedule.
- Impacts – A description of project social and environmental impacts.
- Institutional Considerations – A summary of institutional considerations (such as permits, court actions, contracts, agreements, and other approvals) that are required for project implementation.
- Financial Plan – An analysis of project funding sources and the project sponsor's ability to repay all existing and projected debt service.

2.0 Loan Feasibility Study - Outline

The following paragraphs provide an outline for preparation of a CWCB Loan Feasibility Study. Requirements may vary depending upon the scope and objective of each study. The project sponsor and the consultant are encouraged to discuss study requirements with the CWCB staff prior to development of a study plan. Examples of completed studies for various types of projects are available on the CWCB website at www.cwcb.state.co.us.

2.1 Background

2.1.1 Purpose

This section provides a brief overview of the project, including the type of project and amount of loan funding being requested, and a statement of what the project and study is intended to accomplish. It should describe the need for the project, the problems and opportunities to be addressed, the expectations of the study participants, and why the project is important to the borrower. It should also discuss relevant project history, and identify any regulatory compliance issues that are being addressed, such as dam safety, water quality and flood control.

2.1.2 Study Area Description

The study area/service area is generally the geographic area to be served by the proposed project. The study area description should include the following items:

- a. A narrative description of the study area to include the county, the location of towns or cities, topography, and locations of major streams.
- b. A study area map showing each of the items above, as well as the locations of existing facilities, proposed project facilities and boundaries of lands to be served.
- c. Socio-economic characteristics of the study area such as population, employment and land use. For irrigation projects, the tabulation should provide a description of cropping patterns and crop yields on existing agricultural lands.

2.1.3 Previous Studies

To the maximum extent possible, the results of any previous studies and investigation should be utilized for the current Loan Feasibility Study. If the Loan Feasibility Study was preceded by a reconnaissance-level study, the results of the reconnaissance study should be summarized.

2.2 Project Sponsor

Each Loan Feasibility Study should include a description of the entity (municipality, irrigation district, conservancy district, ditch company, etc.) that is sponsoring the proposed project. The project sponsor may be a public or private entity. The description should include the following:

- a. Type of organization, official name, the year formed, and the statutes under which the entity was formed. For private entities, a copy of the Articles of Incorporation and By-laws should be appended to the report.
- b. For public entities, the number of customers, taps, etc. served, and current water usage, and future growth plans.
- c. For private entities, the number of members or shareholders and shares of stock outstanding or a description of other means of ownership, and current water delivery.
- d. A brief history of the sponsoring entity.
- e. Identification of revenue sources (existing service charges, tap fees, share assessments, etc.).
- f. A description of existing water supply facilities owned and/or operated by the entity.

2.3 Water Rights

2.3.1 Water Availability

The Loan Feasibility Study should provide a detailed description and analysis of each water supply source to be utilized by the proposed project. (A brief description of existing sources may be adequate for projects that involve only rehabilitation of existing facilities). Each source of supply should be described in terms of location, yield, extent of development, and water rights status. Maps and schematic diagrams should be included as a part of the description.

For surface water sources, the description should include a numerical and graphical tabulation of annual flows and average monthly flows for the period of record on each stream. For groundwater sources, the source aquifer(s) and the expected yields and reliability of wells should be identified. A complete tabulation of water rights for each surface water source should also be provided to include appropriation dates, adjudication dates, status of adjudication (absolute or conditional), and amounts decreed to direct flow or to storage. For groundwater sources, the status of well permits and history of use should be provided.

For new water supply facilities or the expansion of existing facilities, an analysis of the expected yield of water supply sources should be included in the Loan Feasibility Study. The analysis should be performed in such a way as to take into account a reasonable range of variations in flow due to hydrologic and meteorological conditions as well as the operation of the water rights priority system.

2.3.2 Water Supply Demands

Existing and future water demands are analyzed, as well as the adequacy of water rights/existing yields, and water demand and availability are compared. Study area water demands are generally estimated for a selected planning horizon or period of time. Typically, a planning horizon should be at least as long as the CWCB loan period. Demands are estimated for the study planning horizon and compared with the yields of existing supplies. If the comparison indicates a water supply deficit at some point during

the planning horizon, alternatives are formulated to meet the deficit by reducing demands or increasing supplies, or both. Alternatives are then formulated to supply water to the project service area under varying degrees of reliability.

2.4 Project Description - Analysis of Alternatives & Selected Alternative

This section further documents the project need by assessing existing and future conditions, identifying problems and deficiencies, and formulating and evaluating potential solutions.

2.4.1 Analysis of Alternatives

Each study should include the formulation and evaluation of a reasonable number of alternatives for accomplishing the study objective(s). The number of alternatives will depend upon the objective and scope of the Loan Feasibility Study. Generally a minimum of three alternatives should be presented, one of which should be the “no-action alternative.” Each alternative should be described in terms of its various components (both structural and non-structural) and the manner in which the proposed facility will operate. Examples of non-structural elements are improvements in the management of developed water supplies, water transfers from existing to new uses and new or revised institutional arrangements.

Evaluation Factors - Alternatives should be evaluated to distinguish the differences between them, in accordance with *evaluation factors* suggested below: Project evaluation factors typically used are as follows:

- a. Outputs/yields - Project outputs are typically expressed in terms of acre-feet of water supply or in units of energy for hydropower. For municipal water supply projects, the estimated safe annual yield of the project should be given. The safe annual yield is the amount of water the project is expected to yield during each year of a critical dry period. For irrigation projects, the yield should be expressed in terms of acre-feet of water supplied to the project service area on an annual basis. The degree of reliability or firmness of a particular yield should also be given. For projects that involve the rehabilitation of existing facilities, the yield should be expressed as the incremental difference in water supply with and without the project.
- b. Costs (capital, operations and maintenance (O & M), total annual costs and costs per unit) - A cost comparison should be made between alternatives. The cost analyses should consist of: (1) an estimate of total capital costs and total annual (O & M) and replacement costs for each alternative, and (2) a total annual cost for each alternative calculated by adding O & M to amortized capital costs, and (3) a cost per unit of project output, i.e. annual project cost per acre-foot of water delivered.
- c. Impacts – Identifies and compares potential impacts to the man-made environment and the natural environment:

- 1) impacts on the man-made environment – residential or commercial buildings affected; utility relocations; acreages of developed lands impacted; historical and archaeological sites impacted; impacts on outdoor recreation activities.
 - 2) impacts on the natural environment - acres of forest, grasslands, etc. to be impacted; streamflow impacts; water quality impacts; impacts on vegetation, aquatic wildlife and terrestrial wildlife; threatened and endangered species in the project area; impacts to federal land national forests, wilderness areas or other areas.
- d. Economic analysis and feasibility - The level of economic analysis will vary from project to project, but generally will include an assessment of benefits and costs. An estimate of the number of shareholders, members, households, etc., expected to benefit from the project should be provided.
 - e. Institutional requirements – Identify and evaluate permits, court actions, contracts, agreements, etc. that are required for project implementation.
 - f. Special considerations - These are extraordinary situations likely to be encountered during design and/or construction. They may relate to special technical considerations, the need for further investigations, uncertainty or risk associated with demand projections or cost estimates, or the possibility of new technologies affecting project.

The results of the alternatives evaluation should be described and displayed in such a manner that the differences between alternatives are apparent. The report should identify the differences between alternatives and comparative costs, and should describe the process (evaluation methodology) used in selecting one of the alternatives as the preferred plan.

2.4.2 Selected Alternative

A detailed description of the *Selected Alternative* should be provided and should include the following:

- a. Project Description – A narrative description of project components and operation to indicate how the entire project will function.
- b. Map - A map of the entire project area showing the locations of existing and proposed project components, and other features like floodplains, spillway inundation zones, etc.
- c. Conceptual Plan/Cross-Section - Layout and cross-sections for each major structure to include dimensions and hydraulic properties. Profile and typical sections for canals and pipelines with water surface and hydraulic gradeline elevations.

- d. Conceptual Design Features - Hydraulic, hydrologic, and structural design criteria for all proposed facilities including:
- Sizing criteria for all hydraulic features such as reservoirs, outlet works, canals, pipelines, pumping plants, etc. with associated energy losses where appropriate.
 - Preliminary structural design criteria including loadings, stresses, geotechnical considerations, and assumptions used for stability analyses.
 - Derivation of the reservoir inflow design flood with volume, peak discharge and routing through the reservoir.
 - Spillway sizing for the inflow design flood.
 - The number, size and operating characteristics of pumping units.
 - Other site factors such as erosion hazard, icing and cold-weather conditions, special construction requirements, and sedimentation.
- e. Field Investigations - A description of all field investigations including the date of the investigations, type of investigations, methodology used and results. For all major structures, the Loan Feasibility Study should describe site conditions, engineering geology, geologic mapping, source and availability of construction materials, and subsurface investigations used in the design of the structure. Where geologic conditions are poor or may require intensive exploration and evaluation, a comprehensive report by a qualified engineering geologist may be necessary.
- f. Right-of-Way/Land - Land and right-of-way requirements for the proposed project and a tabulation of land ownership at the site of proposed facilities.

2.4.3 Cost Estimate

Provide a detailed estimate for all capital costs of project implementation such as planning and permitting activities, engineering design, construction inspection, administrative and legal costs, land and right-of-way acquisition, relocation costs, construction costs, financing costs and an appropriate contingency factor. Detailed construction cost estimates should include a tabulation of quantities, unit costs and total costs. Allowance should be made for cost escalation expected between the date of the construction cost estimate and the award of the construction contract. For large projects with multi-year construction schedules, cost escalation during construction should also be estimated.

2.4.4 Implementation Schedule

Provide a project implementation schedule showing the beginning and completion dates for all activities required for project implementation such as planning studies, permits, design, contracts, land and right-of-way acquisition, financing, and construction.

2.4.5 Impacts

Provide plans for addressing impacts identified in Section 2.4.1.c. Also include consideration of the impact of the proposed project on local and/or regional plans for

water resource development, land use, recreation, water quality management, economic development, and other social and environmental effects.

2.4.6 Institutional Feasibility

Address institutional considerations such as actions or proceedings that must be undertaken to obtain compliance from governmental agencies, or other parties involved in design, construction and financing, to allow project implementation. They include permits, court actions, contracts, agreements, other agency approvals, etc. Coordination on the project may be required with other Department of Natural Resources Departments such as Division of Wildlife and Division of Parks.

The U.S. Corps of Engineers 404 (Dredge and Fill) Permit is generally the key approval for water diversion and storage projects. The 404 permit may trigger the U.S. Environmental Protection Agency - National Environmental Policy Act (NEPA) process, which can require an Environmental Impact Statement (EIS) or an Environmental Assessment (EA) for smaller projects.

Other typical federal, state, and local permits that could be encountered are:

- U.S. Forest Service – special use permit
- U.S. Fish and Wildlife – endangered species consultation
- U.S. Bureau of Reclamation – right-of-way/permit, lease, license agreement, easement, carriage contract, etc.
- State Division of Water Resources – well permits, engineering plan approval
- State Water Quality Control Division – water quality
- County Commissioner approval - conditional or special use, HB 1041 activities of “state interest”

2.5 Financial Feasibility Analysis

This section documents the financial feasibility of the selected alternative. It provides a detailed financial program to describe financing arrangements and the sources and uses of funds for the proposed project. It provides an analysis of the project sponsor’s ability to repay all existing and projected debt service, as well as normal operating expenses. This section includes:

1. Loan Amount - Discuss total project costs, the amount of CWCB loan requested, and the term and interest rate sought.
2. Financing Sources – Identify sources of funding for the project, including how the local share will be provided. Describe each method of financing to be utilized, such as CWCB loan, loans from other agencies, bonds, etc.
3. Revenue and Expenditure Projections – Include a detailed schedule of estimated annual revenues and annual expenditures for the entire period of debt retirement. Annual revenues should be estimated and displayed for each source of funds (assessments, water sales, property taxes, etc.). Annual expenditures should be

displayed for debt retirement payments to each category of debt, for operation and maintenance costs, and for payments to reserve funds. For CWCB loans, borrowers are required to accumulate the equivalent of one annual loan payment in a loan reserve fund, over the first 10 years of loan repayment. (i.e. place in reserve 10% of the annual loan payment for each of the first 10 years of the loan.) An example of a schedule of annual revenues and expenditures is provided herein, and an electronic version and an example of how to use it, are included in the CWCB website at www.cwcb.state.co.us.

4. Loan Repayment Sources - Describe sources of funds for loan repayment, such as assessments, water sales, property taxes and grants. Discuss current water rates/assessments/fees. Feasibility studies for projects with a hydropower component should include an assessment of the potential market for the hydropower.
5. Financial Impacts – Discuss financial impacts of the project on total debt, water rates, assessments of users, and property taxes. Determine future rates needed to cover CWCB loan obligations and additional operating costs. Discuss savings or new revenues generated.
6. TABOR (Taxpayer’s Bill of Rights) Issues - Provide a full discussion of TABOR issues, particularly regarding the ability to incur multi-year debt, and limits on increased tax revenues and spending. An election may be required for public entities not having the status of a qualified enterprise. The provisions of TABOR are complex and may require an attorney and/or accountant opinion.
7. Collateral - Discuss specifics of the loan collateral or security being offered by the borrower (in accordance with CWCB Policies) to assure repayment of the CWCB loan. The type of collateral will vary based on the type of organization, and typically may include a pledge of revenues/assessments, project facilities/water rights, or real property. If real property is offered as collateral, the applicant will be required to submit supporting documentation of land values, based on current land use and including improvements financed by the CWCB, from a Colorado Certified General Appraiser. If water rights are being purchased or offered as collateral, the applicant will be required to submit a written appraisal or opinion of value from a qualified water rights appraiser supporting the purchase price and value.
8. Sponsor Creditworthiness - Provide information to be used by staff to evaluate creditworthiness and financial need (in accordance with CWCB Policies) as follows:
 - a) Current schedule of rates or assessments.
 - b) Copies of the three most recent audit reports of financial statements.
 - c) A current credit report, if requested.

Total Project Cost	\$2,000,000
O&M	0.50%
Insurance	0.15%
Replacements	0.20%
Administration	0.30%
Total	1.15%
Other Revenue	25%
Number of Shares in Co.	2,000
Inflation	3.0%
Interest on Reserves	3.0%

Financing					
<u>Source</u>	<u>Share</u>	<u>Principal</u>	<u>Interest</u>	<u>Years</u>	<u>Payment</u>
CWCB Loan	90%	\$1,800,000	2.5%	30	\$86,000
Bank Loan	10%	\$200,000	6.0%	10	\$27,174

SCHEDULE OF REVENUE and EXPENDITURES

Annual Revenue

Annual Expenditures

Year of Operation	Irrigation Assessment	Other Revenue	Total Revenue	Assessment Per Share	Operation, Maintenance, Replacement	CWCB Loan Reserve Fund		Payments on CWCB Loan	Payments on Bank Loan	Interest on Reserve Funds	Total Expenditures
						Annual	Accum.				
1	\$108,386	\$36,129	\$144,515	\$54	\$23,000	\$8,600	\$8,600	\$86,000	\$27,174	\$258	\$144,515
2	108,710	36,237	144,947	55	23,690	8,600	17,200	86,000	27,174	516	146,370
3	109,050	36,350	145,400	54	24,401	8,600	25,800	86,000	27,174	774	144,947
4	109,406	36,469	145,874	55	25,133	8,600	34,400	86,000	27,174	1,032	145,400
5	109,778	36,593	146,370	55	25,887	8,600	43,000	86,000	27,174	1,290	145,874
6	110,166	36,722	146,889	55	26,663	8,600	51,600	86,000	27,174	1,548	146,889
7	110,573	36,858	147,431	55	27,463	8,600	60,200	86,000	27,174	1,806	147,431
8	110,997	36,999	147,996	55	28,287	8,600	68,800	86,000	27,174	2,064	147,996
9	111,440	37,147	148,587	56	29,136	8,600	77,400	86,000	27,174	2,322	148,587
10	111,902	37,301	149,203	56	30,010	8,600	86,000	86,000	27,174	2,580	149,203
11	85,747	28,582	114,330	43	30,910		86,000	86,000		2,580	114,330
12	86,443	28,814	115,257	43	31,837		86,000	86,000		2,580	115,257
13	87,159	29,053	116,212	44	32,793		86,000	86,000		2,580	116,212
14	87,897	29,299	117,196	44	33,776		86,000	86,000		2,580	117,196
15	88,657	29,552	118,209	44	34,790		86,000	86,000		2,580	118,209
16	89,440	29,813	119,253	45	35,833		86,000	86,000		2,580	119,253
17	90,246	30,082	120,328	45	36,908		86,000	86,000		2,580	120,328
18	91,076	30,359	121,435	46	38,015		86,000	86,000		2,580	121,435
19	91,932	30,644	122,576	46	39,156		86,000	86,000		2,580	122,576
20	92,813	30,938	123,750	46	40,331		86,000	86,000		2,580	123,750
21	93,720	31,240	124,960	47	41,541		86,000	86,000		2,580	124,960
22	94,655	31,552	126,207	47	42,787		86,000	86,000		2,580	126,207
23	95,618	31,873	127,490	48	44,070		86,000	86,000		2,580	127,490
24	96,609	32,203	128,812	48	45,392		86,000	86,000		2,580	128,812
25	97,631	32,544	130,174	49	46,754		86,000	86,000		2,580	130,174
26	98,682	32,894	131,577	49	48,157		86,000	86,000		2,580	131,577
27	99,766	33,255	133,021	50	49,602		86,000	86,000		2,580	133,021
28	100,882	33,627	134,509	50	51,090		86,000	86,000		2,580	134,509
29	102,032	34,011	136,042	51	52,622		86,000	86,000		2,580	136,042
30	103,216	34,405	137,621	52	54,201		86,000	86,000		2,580	137,621
Totals	\$2,974,630	\$991,543	\$3,966,173		\$1,094,235	\$86,000		\$2,579,993	\$271,736	\$65,790	\$3,966,173

2.6 Conclusions and Recommendation

Provide a summary of study conclusions, and an opinion and recommendation as to the overall feasibility of the project and the feasibility of loan repayment.

2.7 Loan Request Submittals

The following is a list of documents that should be submitted with a loan request:

- a. Transmittal Letter – A letter of transmittal of the Loan Application and Loan Feasibility Study, from an officer of sponsoring organization.
- b. Loan Application - A signed Loan Application shall be bound and placed under the front cover of the Loan Feasibility Study. The application form is available on the CWCB website at www.cwcb.state.co.us.
- c. Loan Feasibility Study – A completed Loan Feasibility Study is submitted for staff review and comment. It is typical for the Loan Feasibility Study to have Appendices – such as project technical studies, design drawings and maps, environmental studies, by-laws and articles of incorporation (or other formation documents), financial statements, resolutions, and project input letters and comments, etc. Complex Loan Feasibility Studies should also provide an Executive Summary.

Approved by the CWCB
January 25, 2006 Board Meeting
Agenda Item #21a