

Raw Water Master Plan Update City of Loveland



DRAFT FINAL

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Department of Water and Power
City of Loveland
October 13, 2011

Executive Summary

Background

For many years the Loveland Utilities Commission and City staff have conducted planning activities directed toward meeting the City's future raw water needs and to identify means to effectively manage the City's existing and future sources of raw water. This report builds on that work.

Concerns regarding the adequacy of the City's water supply were heightened as a result of the multi-year drought that began in 2000 and intensified in 2002. At approximately the same time, City staff formally addressed the Loveland Utilities Commission and the City Council on two occasions regarding the City's acquisitions of raw water for development, which were not keeping pace with actual demands. To determine how the City could best prepare to meet its future raw water demands, a Raw Water Master Plan was created in 2005.

In 2011 the City contracted with Spronk Water Engineers to perform an updated analysis of the City's raw water portfolio and system to estimate the firm yield the City can expect to meet demand. The resulting report, the *Raw Water Supply Yield Analysis Update*, was completed in draft and accepted as a tool in developing the City's Raw Water Master Plan update on August 17, 2011.

Need for a Raw Water Master Plan

The original Raw Water Master Plan (RWMP) was designed as a tool to help the City Council determine what steps are necessary to assure that the City's estimated future demands for raw water are adequately met. The RWMP presented and analyzed alternative projects, and provided guidelines for ongoing evaluation of those alternatives to determine which best meet those demands. It was expected that the RWMP would be revisited and updated based on the City's future water supplies and demands, and on the future availability of the various sources of water or feasibility of the various options. This report reflects the first update to the RWMP.

This update includes the impact of a number of significant events which were not part of the 2005 RWMP.

- An economic downturn started in 2008 and as a result, development slowed dramatically. The City did not experience the type of water dedications common during the preceding 15 years. For example, only two significant water dedications have occurred since 2006, and these have not yet been applied for development.
- The City's decree in Case No. 2002CW392 was finalized in 2010. This represented a significant addition to the City's available water rights portfolio and solidified the terms and conditions in which the City may divert the water for municipal use.
- The City purchased 933 Colorado-Big Thompson Project (CBT) acre-foot units (units) at favorable market prices. There still continues to be CBT available for

- purchase under the rules and regulations of the Northern Colorado Water Conservancy District (Northern Water). At the time of the 2005 RWMP, the thought was that CBT units would be available for only another 15 years, although that projection may now be longer because of the economic slowdown.
- A multi-year drought that began in 2000 and intensified in 2002. At the time of the original RWMP, the City was still dealing with drought impacts.
 - The Windy Gap FIRMing Project is not yet online. The required environmental permits are still pending, and design and construction have not yet begun. At the time of the 2005 RWMP it was projected that the project would be online by 2010.

Recommendations

Based on results from the Raw Water Supply Model and review of the City's current policies related to fees, requirements, acquisition and development of a reliable, high quality supply of raw water for the City, the recommendations from the LUC and staff are as follows:

1. 1-in-100 Year Drought Planning
 - A. Continue to plan for the City's long-term policy of preparing for a 1-in-100 year drought event with no curtailment.
 - B. Use the City's water resources wisely, and use conservation as a tool for more meeting demands during severe droughts, but not as a source for meeting future supply demands up to the 1-in-100 year event.
2. 2011 *Raw Water Supply Yield Analysis Update* (SWE Report)—Raw Water Supply Model (RWSM)
 - A. Continue to use the 2011 *Raw Water Supply Yield Analysis Update* and the Raw Water Supply Model as tools to evaluate proposed policy changes related to acquisition and planning for raw water supplies.
3. Continue to use a raw water demand target of 30,000 acre-feet.
4. Modify the City's current policy for accepting raw water. The basic components of any policy revisions may consider, without limitation, the following:
 - A. CBT
 - i. Require that at least 40 percent of every raw water payment be made using CBT, existing cash credits in the Water Bank, or cash-in-lieu.
 - a. Accept CBT, cash credits in the Water Bank, or cash-in-lieu for the full payment of any raw water requirement.
 - b. Keep the credit value of CBT, currently 1.0 acre-foot per unit.
 - ii. Continue purchasing CBT acre-foot units, on an ongoing basis under favorable market conditions.

B. Ditch Shares

- i. Adjust the credits for ditch shares to the actual values as determined by the current 2011 SWE report using either of the following methods, at the developer's option:
 - a. For average yields as determined in the RWSM for ditch credits, require the storage fee to make up the difference between the firm yield and the average yield.
 - b. For firm yields as determined in the RWSM for ditch credits, do not require a storage fee.
 - c. Any ditch credits currently in the water bank originally deposited prior to July, 1995, may be granted average yields without requiring the storage fee.
- ii. Accept any native water shares in the City's Growth Management Area that in the City's opinion may successfully be transferred in Water Court.

C. Storage

Do not adjust the Native Raw Water Storage Fee (NRWSF) from the current fees.

D. Cash-In-Lieu

- i. Remove the current limit on cash-in-lieu transactions. Allow use of cash-in-lieu on any transaction.
- ii. Continue to keep the City's cash-in-lieu fee 3 percent higher than the market price of CBT water, to allow for administrative expenses in acquiring water.

Below is a summary of the recommended factors for the ditch shares:

Table 9-1: Summary of Recommended factors for Ditch Shares

Irrigation Company	Current & Proposed NRWSF (\$/acre-foot)	Proposed Average Credit With storage (acre-foot/share)	Proposed Firm Credit w/o storage (acre-foot/share)
South Side	\$6,770	4.55	1.46
Louden	\$6,850	12.17	2.43
Buckingham	\$7,400	6.36	0.38
Barnes	\$5,750	3.32	0.86
Chubbuck	\$7,400	2.94	0.41
Big TD&M	\$3,530	186.57	70.90

5. Continue to consider the benefits of different types of storage:

A. Upstream Storage

- i. Provides "annual storage"
- ii. Provides "firming storage"

- B. Downstream Storage
 - i. Provides staging for later upstream exchange.
 - ii. Provides staging for releases downstream.
- 6. Consider implementing elements of the maximum run conditions identified in Table 6 of the SWE Report.
- 7. Evaluate the most effective ways to make use of reusable supplies:
 - A. Exchange upstream for municipal use.
 - B. Sell or lease to downstream users.
 - i. Determine a reasonable policy for providing augmentation water to others, including value, storage, and administration.
 - C. Continue to monitor the applicability of a purple-pipe raw water irrigation system.

The intent of these policy changes is to ensure the reliability of water the city accepts, thereby adhering to the charge by City Council to be able to meet future demands for water without curtailment in up to a 1-in-100 year drought. These steps are designed to enhance the City's economic prosperity and potential for continued future growth.

An ongoing reevaluation of the alternatives considered in this RWMP at regular intervals a few years apart is recommended for the future. As water or cash-in-lieu of water is acquired, the City's overall water supply portfolio may change. Unforeseen factors may cause the ultimate demand to be different from current projections. It will be important to reevaluate the RWMP using the Raw Water Supply Model and the *Raw Water Supply Yield Analysis* in the future as growth occurs, and to adjust the conclusions and recommendations as appropriate to match future conditions.