

# RECLAMATION

*Managing Water in the West*

FONSI NO. EC-1300-06-06

## Carter Lake Supplemental Outlet Project

Colorado-Big Thompson Project, Colorado  
Great Plains Region

Approved: 

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U.S. Department of the Interior  
Bureau of Reclamation  
Great Plains Region  
Eastern Colorado Area Office

## Introduction

In accordance with the National Environmental Policy Act (NEPA) the Bureau of Reclamation (Reclamation) has prepared an Environmental Assessment (EA) that evaluates the environmental effects of the proposed Carter Lake Supplemental Outlet Project (CLOP).

The purpose of the project is to provide redundancy and operational flexibility of releases from Carter Lake, in order to ensure the health, safety and welfare of Windy Gap and Colorado-Big Thompson (CBT) Project beneficiaries as well as the Town of Berthoud who also receives water delivered from Carter Lake. In addition the Project will allow Reclamation to continue to operate the CBT in a safe and healthful manner that is beneficial to the public.

Reclamation analyzed the effects of constructing the CLOP in response to a proposal and request by the Northern Colorado Water Conservancy District (NCWCD).

## Alternatives Considered and Recommended Action

Reclamation determined that two of the proposed alternatives were reasonable and feasible and these two alternatives were carried forward for more detailed analysis in the EA. Other alternatives were rejected early in the screening process due to excessive cost, significant environmental impact, or because they did not adequately address safety concerns. The two alternatives that were analyzed in the EA were the No Action and the Supplemental Outlet Alternative.

The No Action Alternative provides for continued operation and maintenance of the existing outlet structure, and does not provide for the construction of the CLOP. Under the No Action Alternative Reclamation would not enter into a MOU with the NCWCD for the construction of a supplemental outlet structure at Carter Lake Dam No.1.

Under the Supplemental Outlet Alternative Reclamation would enter into a MOU with the NCWCD to allow an additional outlet structure to be constructed, operated, and maintained. This alternative includes a 110 feet high multi-level intake tower that would be placed in Carter Lake near Dam No.1. A 6-foot diameter tunnel would start at the intake structure on the west side of County Road 31. The tunnel would continue about 800 feet and pass through Carter Lake Dam No.1. A connecting penstock, energy dissipation and flow regulation structure would connect the new outlet to the existing St. Vrain Supply Canal. In order to accomplish the work at Dam No.1, Carter Lake would need to be held at a lower elevation than normal during the construction that will occur during the fall and early spring.

Reclamation has selected the Proposed Alternative – Supplemental Outlet Alternative as the Preferred Alternative.

## Consultation, Coordination, and Public Involvement

Reclamation developed an initial list of issues and concerns based on a previous drawdown conducted at Horsetooth Reservoir. Reclamation held a public scoping meeting in March 2006 to solicit public comments on the proposed project.

Reclamation provided opportunities to ask questions, identify issues and concerns associated with the preliminary alternative and to identify other alternatives. Fourteen individuals attended the public meeting. In addition to comments received at the meeting, a total of seven written comments were received and included in the EA, these comments were used to shape the scope of the EA.

## Summary of Environmental Effects

Lake Operations and Hydrology – The proposed drawdown consists of lowering the Reservoir to elevation 5,657 feet over a 5 month period (May 2007 to September 2007), holding the Reservoir elevation for approximately 180 days, starting in October 2007, and then restoring Carter Lake to normal operations over an estimated 120 days. Upon completion of the construction Carter Lake would resume to normal operations in August 2008. These water levels are similar to ranges experienced during recent drought conditions.

Water Quality – Impacts will include a temporary increase of turbidity in the Reservoir pool due to a greater area of the Reservoir bottom being exposed to wave action. Turbidity should reduce once the Reservoir resumes normal operations due to the constant turnover of water with Carter Lake. The exposed shoreline may experience weed and plant growth. Upon completion of the project, this plant growth may add to the organic loading of the Reservoir. The plant growth during the CLOP would be minimal since the drawdown will be performed during the fall and winter.

Reservoir elevations below 5,664 feet would begin to affect the ability of the CLFP to adequately treat raw water from Carter Lake. The CLFP may have to increase treatment processing or lower production in order to meet water quality standards (Maddox, 2005).

Although Dry Creek does fall within the area of affect, the proposed construction activities should not affect Dry Creek (Sinden, 2006). Best Management Practices will be used during construction to minimize localized impacts to water quality of Dry Creek.

The impacts that will result from the CLOP will be temporary, short term, and minor and should not exacerbate water quality concerns at Carter Lake during the fall and early spring construction period.

Recreation – Only minimal short term impacts will occur during the Reservoir drawdown. Impacts will be limited to loss of access to open water for boating in late fall and early spring. There will also be a short term impact to associated land-based recreation activities.

Vegetation – Vegetation impacts will be localized to shrub-grassland located within the construction areas. These impacts are minor when compared to the abundance of these vegetation communities in the area. Areas disturbed during construction will be reseeded and stabilized with native vegetation. Upland species, such as ponderosa pine would not be affected by the CLOP.

Geology and Soils – There would be no impacts to the geology as a result of the CLOP. Construction activities associated with the CLOP would result in minor disturbance of soils in the area. Adverse impacts to soil would include short term increases in erosion and possible reduction in soil productivity due to compaction. Due to the small amount of area affected by the CLOP, reductions in soil productivity would be minor.

Wildlife – Construction activities would temporarily shift wildlife use away from Dam No.1 rehabilitation areas. There could be an impact of short term displacement of wildlife that would normally occupy the immediate project area. Generally, wildlife would be expected to move and find alternative areas for forage and cover easily, returning after construction and rehabilitation activities have been completed.

Aquatic Species – Any exposed benthic organism as a result of the drawdown would probably not survive this exposure. The reduction in Reservoir volume will also concentrate the fish populations in a smaller area. Depending on the depth of these areas, some fish mortality can be expected. This impact to the fishery would occur regardless of the season in which the drawdown would occur. LCPOLD currently and will continue to stock fish populations in Carter Lake. No long term impacts to the fish populations or other aquatic species are anticipated.

Threatened and Endangered Species – Bald eagles winter in the area and could use roosts in the vicinity of the CLOP. However, construction will begin prior to when bald eagles come to the area to winter. Also, the proposed construction project will not disturb any large trees. Potential suitable habitat for the Preble's meadow jumping mouse (PMJM) occurs immediately east of the project area along the Dry Creek drainage. The Colorado Division of Wildlife's Natural Diversity Information Source has not identified Dry Creek as part of the PMJM occupied range. Best Management Practices will be implemented to protect the Dry Creek drainage from disturbance. The project will have no affect on the Preble's meadow jumping mouse. Reclamation has determined that the proposed action may affect but is not likely to adversely affect bald eagles.

Aesthetics – Best Management Practices will be utilized to minimize air, light, and noise during construction. Noise from construction activities will be noticeable but not extremely bothersome to the residents near the construction area. Most of the construction noise will occur in winter months when residents will be indoors and have their windows closed. No long term permanent impacts would result. The visual impacts of a multi-level intake tower may be objectionable to some; however, this impact will not cause a significant effect on the environment.

Cultural Resources – The project will alter characteristics of the St. Vrain Supply Canal that qualifies for the National Register of Historic Places. However, sections of the canal have been physically compromised by previous modifications and is regarded as non-contributing to the historic significance of the greater site. The State Historic Preservation Officer has concurred with Reclamation’s determination of “no historic properties affected”.

Indian Trust Assets – Consultation with Reclamation archeologist Bob Burton identified no Indian trust assets within the CLOP area.

Transportation – Some traffic delays will occur during construction of the CLOP in order to allow construction traffic to safely enter and exit existing roadways. These impacts will be short term in duration and minor in nature. There will be no long term impacts.

Cumulative Impacts – The installation of the CLOP will reduce cumulative impacts by negating the need for future drawdowns to perform inspection and maintenance activities at Dam No.1.

## **Environmental Commitments**

The following environmental commitments would be implemented as an integral part of the Supplemental Outlet Alternative.

- 1. Standard Best Management Practices** – Standard best management practices would be applied during construction activities to minimize environmental effects and would be implemented by construction personnel or included in contract specifications. Specifically, sediment, erosion control, and revegetation plans would be utilized to protect environmental assets.
- 2. Additional Analyses** – If the Supplemental Outlet Alternative were to change significantly from that described in the EA because of additional or new information, additional environmental analyses would be undertaken if impacts would be expected to exceed those presented in the EA.
- 3. Permits** – Before implementing the selected alternative, the contractor would obtain all necessary permits. The conditions and requirements of any permits would be strictly adhered to by the contractor.
- 4. Cultural Resources** – Anyone who has inadvertently discovered possible human remains must stop work immediately and contact archaeologist Bob Burton at 970-962-4361. Work would stop until the proper authorities are able to assess the situation and give written notice that work may resume.

5. **Disturbed Areas** – Disturbed areas resulting from the project would be smoothed, shaped, contoured, reseeded, and rehabilitated to as near their pre-project construction condition as practicable. Seeding and planting would occur at appropriate times with weed-free seed mixes of native plants. The composition of the seed mixes would be coordinated with the Eastern Colorado Area Office. Monitoring and treatment would continue until there are two successive years.
6. **Visual Resources** – Rehabilitation measures would be implemented immediately upon completion of the project. This will include re-contouring and reseeding disturbed areas in a natural appearing way, with native vegetation species. The spread of noxious weeds would be controlled, trash would be cleaned up and construction debris disposed of in designated areas.

## Finding

Based on the analysis of the environmental impacts in the EA and consultation with potentially affected agencies, organizations, and the general public, Reclamation concludes that implementation of the proposed CLOP would not have a significant effect on the quality of the human environment or natural and cultural resources. The effects of the proposed CLOP would be minor and localized. Therefore preparation of an environmental impact statement is not required.

This decision was based on a thorough review of the EA and public comments received during the scoping process. Indirect impacts of the proposed action are not expected to be significant. Because some biotic elements of the system, such as birds or terrestrial animals, may move out of the affected area, the implementation of the drawdown at Carter Lake on short term basis may potentially have a temporary effect on aquatic resources and wildlife concentrations. The potential for cumulative effects is lessened by the limited scope of the drawdown and the limited areas impacted by the supplemental outlet construction. The installation of the CLOP will reduce cumulative impacts by negating the need for future drawdowns to perform inspection and maintenance activities at Dam No.1.

Construction activities, concentrated at Dam No.1, and the drawdown itself would temporarily disrupt wildlife and human use of project lands. During the drawdown period, short term productivity of many biological resources is expected to be reduced. However, the overall productivity of the biological resources in Carter Lake is expected to be unaffected over the long term.

This decision is in accordance with the National Environmental Policy Act of 1969 (Public Law 91-90), as amended, and the Council of Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508).