

AMENDMENT TO
PROGRAMMATIC AGREEMENT

Between

Bureau of Reclamation, Eastern Colorado Area Office, and the
Colorado State Historic Preservation Officer

For

Reservoir Operations and Storage Contracts

WHEREAS, the Programmatic Agreement (Agreement) was executed on January 23, 2007; and

WHEREAS, Bureau of Reclamation, Eastern Colorado Area Office (Reclamation) has not been able to complete the terms of the Agreement due to poor weather conditions at its high altitude reservoirs; and

WHEREAS, this Agreement is scheduled to expire on January 23, 2017 and the signatories have agreed to extend the terms of the Agreement for an additional ten years pursuant to Stipulation V of the Agreement; and

WHEREAS, Reclamation will send a copy of this executed amendment to the Advisory Council on Historic Preservation;

NOW, THEREFORE, in accordance with Stipulation V of the Agreement, Reclamation and the Colorado State Historic Preservation Officer (SHPO) agree to amend the Agreement as follows:

1. Amend Stipulation VIII so it reads as follows:

This Agreement shall extend for a period of ten years from the date of the last signature on this amendment. The Agreement may be amended, superseded, or terminated by mutual agreement of Reclamation and SHPO.

SIGNATORIES:

Bureau of Reclamation, Eastern Colorado Area Office



J. Signe Snortland
Area Manager

Date 1/20/17

Colorado State Historic Preservation Office



Steve Turner, AIA
State Historic Preservation Officer

Date 1/19/17

DUPLICATE ORIGINAL

PROGRAMMATIC AGREEMENT

Between

Bureau of Reclamation, Eastern Colorado Area Office, and the

Colorado State Historic Preservation Officer

For

Reservoir Operations and Storage Contracts

I. Background

The Eastern Colorado Area Office (ECAO) of the Bureau of Reclamation operates two primary water storage projects in Colorado: the Fryingpan-Arkansas Project and the Colorado-Big Thompson Project. Each project includes reservoirs and lakes (hereafter referred to as “reservoirs”) that can undergo seasonal fluctuation as water is stored and released. Typically, reservoir operations cause levels to rise from late autumn to summer, then to fall for the remainder of the year as water is withdrawn for agriculture, municipal, and industrial uses.

The Fryingpan–Arkansas Project was built between 1962 and 1975 to transfer water from Colorado’s Western Slope and store it in a series of ECAO-managed reservoirs, including Turquoise Lake, Twin Lakes, and Pueblo Reservoir. Water initially stored in ECAO reservoirs may end up in a number of privately owned lakes and reservoirs. In addition, Ruedi Reservoir on the Fryingpan River stores flows that are released for agricultural, municipal and industrial purposes, in addition to other project goals including the maintenance of flows in the Colorado River near Grand Junction to enhance habitat for endangered fish. For Pueblo, the terminal storage reservoir in this project, archaeological survey and excavation was conducted in 1964-65 under provisions of the Reservoir Salvage Act of 1960. Twin Lakes was initially surveyed in 1964 and resurveyed in 1975-1978, and mitigation accomplished under the National Historic Preservation Act (NHPA). Two reservoirs -- Twin Lakes and Turquoise Lake -- were pre-existing reservoirs that have been raised in elevation by ECAO.

The Colorado–Big Thompson Project was built between 1937 and 1957. It transfers water from a series of lakes in the upper drainage of the Colorado River through the Adams Tunnel to the Estes Park area and thence through a series of power plants to Carter and Horsetooth reservoirs. The reservoirs received only minimal archaeological examination by the River Basin Survey in 1947 and 1948. These surveys generally relied on local informants to find sites and do not meet modern survey standards. In 2000, Horsetooth Reservoir was emptied to conduct dam safety work and was completely surveyed at that time. During this investigation, three eligible sites were found and excavated (letter of Sep 24, 2002); all of them date to the historic period. No prehistoric sites were found in the pool. Carter reservoir has had only minor survey within the pool, but other areas were surveyed in 1990. Other ECAO-managed reservoirs in this project include Flatiron, Pinewood, Estes, Marys, Shadow Mountain, Granby, Willow Creek, and Green Mountain. Green Mountain Reservoir on the Blue River stores water that is released for power generation purposes, to assure that downstream senior water rights are satisfied when the Colorado-Big Thompson project diverts water, and to maintain prescribed flows in the Colorado River.

These reservoirs have not been surveyed except some shoreline and above pool areas. Flatiron, Estes, Marys, and Shadow Mountain reservoirs exhibit minor fluctuations, typically four feet or less. Table 1 summarizes the status of surveys of ECAO reservoirs.

In the past, changes in operational strategies have occurred at ECAO reservoirs in the two projects, usually in response to changes in power generation demand, flows needed for endangered fish species, and other demands for project water. The changes affect timing, depth, and duration of drawdown within the authorized pool. From year to year, the actual scheduled operations are also affected by volume of water; in high flow years the reservoir levels will rise to a higher zone and in low water years the zone of fluctuation lowers. Actual annual operations are thus changeable within the operating zone but always occur within a set maximum and minimum for each reservoir (refer to Table 2).

Storage contracts are called “If and When” contracts, since the storage can only be used when there is space available in a reservoir. Contract holders can store water in an ECAO reservoir, as long as storage space is available. Decisions to store water in an ECAO facility can have a ripple effect, since otherwise the water would be stored in other reservoirs belonging to other entities. The other reservoirs are not under ECAO control and the use of them is determined solely by others. In the long run, contracts will ease the need for new reservoirs and the resulting destruction of additional sites by more fully utilizing capacity of existing reservoirs.

Table 1. Survey status of ECAO reservoirs/lakes

RESERVOIR	REFERENCE	COMMENT	TO DO
<i>Horsetooth</i>			<i>FINISHED</i>
	Mutaw 2001	Entire pool surveyed to dead storage. 3 sites eligible	
	Tucker, Mutaw, Fariello 2003	Mitigation for drawdown at 3 sites	
	Mutaw, Simmons, Whitacre, Tate 1991	Survey of south lands, down to 5388- 92 feet.	
	Mutaw, Simmons, Whitacre 1990	Survey of north lands, down to 5376- 77 feet	
<i>Carter</i>			<i>Survey pool above projected 2007 low of 5657 feet elevation</i>
	Burney and Halasi 1990	Survey of lands above 5677-80 feet	
<i>Flatiron</i>			<i>Survey pool when drained for maintenance</i>
	Anderson and Chambellan 1994	Survey of lands above 5473	
<i>Pinewood</i>			<i>Survey pool to 6555 ft</i>
	Anderson and Chambellan 1994	Survey of lands above 6577	
<i>Lake Estes</i>		<i>Upper reaches of lake covered in extensive sand and gravel deposits by Lawn Lake and other floods</i>	<i>None recommended – little pool area that is not covered with recent deposits</i>
	Pearson 1995	Survey of lands above 7468	
<i>Marys Lake</i>			<i>Survey when drained for maintenance</i>
	Pearson 1995b	Survey of lands above 8031	
<i>Granby</i>			<i>Survey pool to 8240-8260 in Mar/Apr</i>
	Burgh 1947	Level II survey of pool after clearing. 4 sites identified.	
<i>Shadow Mountain</i>		<i>Held within 1 foot elevation range</i>	<i>Normally held at 8366 No additional survey recommended because reservoir does not fluctuate and bottom is covered in mud and dense grass</i>
	Fedor & Slay 1990	Monitoring of 40 acres drawdown 5 ft + 2 historic trash scatters – not eligible	
<i>Willow Creek</i>		<i>Fluctuates within about 4 ft.</i>	<i>Survey when drained for maintenance.</i>
	No data		
<i>Green Mountain</i>			<i>Survey pool – normally drops to ~ 7900 in winter</i>
	No systematic survey in pool		
<i>Pueblo</i>			<i>Resurvey in progress. Pool drops to 4841 in 2006</i>
	Withers 1965 Withers and Huffman 1966	Survey of pool and surrounding lands	
<i>Twin Lakes</i>			<i>FINISHED</i>
	Buckles 1978	Survey of pool and surrounding lands	
<i>Turquoise</i>			<i>Resurvey required. Pool normally lowers to 9830 in Apr.</i>
	Withers 1965	Survey of pool? Only sites recorded are at 9810 ft.	
<i>Ruedi</i>			<i>Resurvey required. Pool lowers to 7725- 7745 in Mar-Apr</i>
	Withers 1964	Survey of pool	

Table 2. Maximum and minimum waterlines

<i>NAME</i>	<i>HIGHEST ELEVATION</i>	<i>DEAD STORAGE ELEVATION</i>
Pueblo	4898	4764
Twin Lakes	9200	9168
Turquoise	9869	9765
Ruedi	7766	7566
Carter	5759	5618
Horsetooth	5430	5270
Flatiron	5473	5462
Pinewood	6580	6550
Estes	7475	7450
Marys	8040	8025
Shadow Mountain	8367	8366
Granby	8286	8180
Willow Creek	8177	8032
Green Mountain	7950	7870

II. Purpose and Objectives

This Programmatic Agreement (PA) documents the agreement between ECAO and the State Historic Preservation Officer (SHPO) concerning the means to determine and evaluate the impacts on historic properties from reservoir operations and storage contracts as required by Section 106 of the National Historic Preservation Act (NHPA) and stipulated in 36 CFR 800. As the lead Federal agency, ECAO shall meet its responsibilities for compliance with Section 106 of the NHPA by complying with Stipulation IV of this agreement. The Advisory Council on Historic Preservation (ACHP) declined an invitation to participate in this agreement.

III. Finding of Effect

A. Operations Changes and the Existing Undertaking

The “If and When Contracts” and other contracts do not constitute a new program at Pueblo Reservoir and other ECAO reservoirs, but are a modification of reservoir operations that have been ongoing since 1941. None of these changes will exceed the existing high and low pool levels originally established for a reservoir, and will require no new construction or modification of existing reservoir structures. Average reservoir levels change slightly as a result of these modifications. The specific expected level changes for each proposed contract or set of contracts are and will continue to be detailed in the environmental documents prepared for each contract or set of contracts.

B. Area of Potential Effect

CFR 800.4(b)(1) states, in part, that the agency official shall make appropriate identification efforts, Taking into account the past “research and studies, the magnitude and nature of the undertaking and the degree of Federal involvement, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the area of potential effects.”

Although there is a theoretical possibility of effects at non-ECAO reservoirs, in practical terms the actual definition of specific effects is nebulous. These reservoirs undergo fill and empty cycles each year and often have been used for 50, 75, or 100 years, making the survival of eligible sites problematical. The change in elevation can be predicted statistically, but the actual new elevation level will depend on the weather conditions for that year as well as the storage strategies of the reservoir users. The filling is accomplished by others and is not subject to Reclamation control. **Effects will occur whether or not the water contracts are implemented.** Reclamation evaluates effects at non-ECAO reservoirs during the National Environmental Policy Act process, using available data, but the lack of control at non-ECAO reservoirs dictates that they not be included in the Area of Potential Effect (APE).

The impacts of operational changes fall within the normal range of operations at ECAO reservoirs, and therefore the APE for operational change impacts, is the shoreline land between the waterline and the maximum pool.

C. Effects of Operations and Storage Contracts

ECAO operations impact the physical integrity of sites through loss of sediments, displacement of artifacts, loss of features and organics, and weathering caused by constant drying, re-wetting, and exposure to dissolved chemicals in the water. Recreational use of the reservoir exposes artifacts to casual collecting activity. The physical integrity of other sites is protected through sediment deposition over the site and through the anaerobic effects of cold water levels in the lower parts of reservoirs. All known shoreline historic properties within reservoir operating limits have undergone and are continuing to undergo these types of impacts.

The types of impacts to historic properties will not change as a result of implementing the operational changes. The principal identifiable change is a shift in the elevation range of the pools, which can be described as an average, but cannot be exactly determined due to weather variation.

IV. Implementing Actions

The following are actions that ECAO will undertake as part of its ongoing Section 110 program to identify and evaluate historic properties on land controlled by the office, and to identify sites and effects within the fluctuation zone of reservoirs constructed by ECAO. These Section 110 actions will satisfy the Section 106 requirements for reservoir operations and storage contracts.

A. For Pueblo Reservoir, ECAO will resurvey the APE through calendar year 2010 and re-evaluate sites as they are exposed during low water stages during the period according to the Pueblo Reservoir Cultural Resource Survey Plan (2006). The contractor will also survey all lands controlled by ECAO at Pueblo.

B. By February 28, 2007, ECAO will develop a program to re-examine the pools of other ECAO reservoirs within its region, unless they have already had an adequate survey or do not fluctuate widely (see Table 1). ECAO will consult with SHPO on the program. Surveys will be conducted per the plan and as funding is available. Should funding not be available 3 out of 5 years, stipulations in the Dispute clause shall be followed. Reports will be submitted to the SHPO together with determinations of site eligibility and finding of effect on all reservoirs surveyed.

C. Should any of the ECAO reservoirs be emptied, a survey of the pool will occur (provided weather conditions permit – i.e., snow not covering the ground).

D. After sites are located and evaluated, ECAO will consult with SHPO regarding effects to eligible sites and proposed ways to mitigate any adverse effects.

E. ECAO will submit to SHPO an annual report (due on the 15th day of December) describing its activities pursuant to this PA, beginning with a report for FY 2007.

F. Should unanticipated discoveries of archaeological properties be made in an ECAO reservoir, the site will be recorded and an assessment made, if possible, of its eligibility for the National Register. If eligible, Paragraph IV.D above will be followed.

G. Should human remains be discovered in any ECAO reservoir, procedures outlined in Reclamation Manual LND 07-01 will be followed.

V. Amendment

If a signatory determines that the terms of this PA cannot be met, or that a change is needed to meet the requirements of the law, that signatory will immediately request in writing that an addendum will be executed as defined in 36 CFR Part 800.

VI. Dispute Resolution

If a dispute arises regarding implementation of this PA, ECAO will consult with the disputing party to resolve the dispute. If the dispute cannot be resolved, further comments will be requested from ACHP, as defined in 36 CFR Part 800. If the dispute cannot be resolved, it will be suspended or terminated consistent with Section VII.

VII. Suspension or Termination

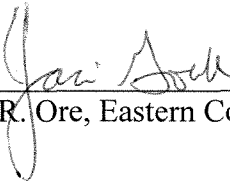
If any signatory party to this PA believes it should be suspended or terminated, it will provide written notice to ECAO and the other signatory parties. ECAO will then conduct consultations in an effort to resolve any issues. Thereafter, the agreement may be amended by mutual agreement of the consulting parties, or it may be terminated by ECAO or any of the signatories within the limits of their jurisdiction.

VIII. Term of the Agreement

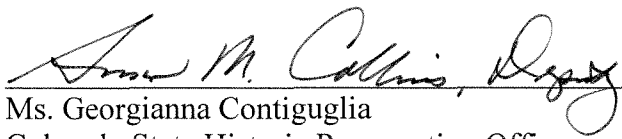
This PA shall become effective upon the date of last signature. The PA shall extend for ten years from the date of last signature when it shall be reevaluated, and may be amended, superseded, or terminated by mutual agreement of ECAO and SHPO.

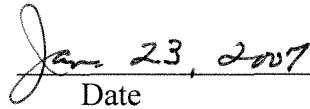
IX. Signatures

ACTING FOR


Fred R. Ore, Eastern Colorado Area Office


Date


Ms. Georgianna Contiguglia
Colorado State Historic Preservation Officer
Office of Archaeology and Historic Preservation


Date