

## FELTON DIVERSION FISH AND GAME MOA PROCEDURES

DATE	FLOW cfs	DAM	ACTION
NOVEMBER 1 TO JUNE 15	40 OR LESS	DEFLATED	INFLATE AIR BLADDERS UNDER DAM
		INFLATED	BY-PASS FLOW IS PASSING THROUGH FISH LADDER
NOVEMBER 1 TO MARCH 31	40 TO 2000	DEFLATED	NONE
	40 TO 300	INFLATED	BY-PASS FLOW IS PASSING THROUGH FISH LADDER
	300 OR MORE	DEFLATED	NONE
		INFLATED	OPEN SLIDE GATE 8 INCHES
	300 OR MORE FOR 5 DAYS IN A ROW AND FISH ARE HOLDING BELOW DAM	INFLATED	PARTIALLY DEFLATE DAM TO 4 FEET, CLOSE SLIDE GATE OVER NIGHT, RE-INFLATE DAM NEXT MORNING AS NEEDED

MEMORANDUM OF AGREEMENT  
THE CALIFORNIA DEPARTMENT OF FISH AND GAME  
AND THE CITY OF SANTA CRUZ  
REGARDING THE OPERATION OF THE FELTON WATER DIVERSION

The California Department of Fish and Game ("DFG") and the City of Santa Cruz acting by and through its Water Department ("City") hereby enter into the following Memorandum of Agreement ("MOA").

RECITALS

- A. The DFG is charged with the protection, management and enhancement of the fish and wildlife resources of the State of California.
- B. The City diverts water for municipal and industrial use from the San Lorenzo River at the Felton Diversion Facility ("Facility" or "diversion facility"). This water is an integral component of the City's water supply. The Facility includes an inflatable rubber dam across the San Lorenzo River which is usually inflated during the winter months when streamflow and turbidity conditions are suitable for water diversion.
- C. In 1994, DFG filed a complaint with the State Water Resources Control Board raising a number of concerns regarding potential impacts on fishery resources. The City and DFG met and worked cooperatively to evaluate these issues, and narrowed the unresolved issues to the following:

During the winter months, adult steelhead and coho salmon migrate upstream to spawn. When the dam is fully inflated, water is discharged through a fish ladder to provide upstream passage for steelhead and coho salmon. The DFG is concerned that under certain high flow conditions, water spilling over the fully inflated dam may reduce the effectiveness of the fish ladder attraction flows in assisting steelhead and coho salmon to locate the downstream entrance to the ladder. The DFG is also concerned that steelhead and salmon may have difficulty passing over the fully deflated Facility when winter streamflows are low and the City is not impounding or diverting water.

D. The City and DFG share the goal of amicable resolution of their differences in a manner which addresses both DFG's fishery concerns and the City's need for a safe and effective diversion facility. The City has therefore invested considerable effort and funds to address DFG's concerns by among other things collecting data, consulting with DFG, developing operational modifications to improve fishery conditions, and conducting a series of field studies which are described in the March 1996 Memorandum of Agreement ("Study MOA") between the City and DFG. As a result of this joint effort, DFG's outstanding concerns have been resolved, provided that the City modifies its operation of Felton Diversion as set forth in this MOA.

NOW, THEREFORE, IT IS AGREED THAT:

I. Felton Diversion Facility Operational Modifications.<sup>1</sup>

A. Low Streamflow Conditions. From November 1 through March 31 when the mouth of the San Lorenzo River is open and streamflow is 40 cubic feet per second (cfs) or less, and from April 1 through June 15 when the stream flow is 40 cfs or less, the City will operate the diversion facility in a manner consistent with the following:

1. When the dam is fully deflated, the City will inflate small air bladders beneath the deflated dam for the purpose of concentrating the streamflow near the center of the deflated dam. The small air bladders will be inflated to such a degree that the depth of flow within the zone of concentrated flow crossing the deflated dam is 8 inches or greater.<sup>2</sup>
2. When the City is diverting water, the dam will be inflated such that the by-pass flow is released through the fish ladder.

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<sup>1</sup> The dam may also be inflated to allow operation of the fish trap in the fish ladder, a research project of the Monterey Bay Salmon and Trout Project (MBSTP) in coordination with the DFG. When the facility is being used solely for fish trapping, the operational provisions of this MOA shall not apply unless specifically agreed to in writing by the City, MBSTP and DFG.

<sup>2</sup> Field studies have demonstrated that this flow depth can be attained and that adult steelhead and salmon can readily jump and swim across the Felton Diversion Facility when it is in this operational mode.



B. Moderate Streamflow Conditions

From November 1 through March 31 when the mouth of the San Lorenzo River is open and streamflows are between 40 and 200 cfs the City will operate the diversion facility in a manner consistent with the following:

1. During the first one or two rainstorms of winter the dam remains fully deflated to facilitate flushing sediments and organic matter from the river channel. During this phase of winter operation migrating fish can readily pass (jump and swim) over the deflated dam.

2. When streamflows are between 40 and 200 cfs and the City is impounding or diverting water, the dam shall be inflated in which condition the existing fish ladder is operational.

C. High Streamflow Conditions

From November 1 through March 31 when the mouth of the San Lorenzo River is open and streamflows exceed 200 cfs, the City will operate the diversion facility in a manner consistent with the following:

1. During periods when the City is not impounding or diverting water and streamflows are between 200 cfs and 2,000 cfs, the rubber dam shall be fully deflated, thus providing adult fish the opportunity to jump and swim across the deflated dam.

2. When streamflows are between 200 cfs and 2,000 cfs and the City is impounding or diverting water, the rubber dam shall be inflated such that the fish ladder

is operational. When streamflow exceeds approximately 300 cfs, the slide gate shall be opened approximately 8 inches to increase attraction flow at the fish ladder entrance. In addition, when streamflows have equaled or exceeded 300 cfs for five consecutive days and adult steelhead or salmon are observed holding downstream of the dam, on the following day the dam shall be partially deflated and the slidegate closed by early evening and shall remain so overnight, thus providing adult steelhead and salmon the opportunity to jump and swim over the partially deflated dam. The facility may then be returned to the appropriate operational mode as determined by the City.

3. When streamflows exceed 2,000 cfs, the City may fully deflate the rubber dam, among other things to avoid damage. Under such streamflow conditions it is understood and agreed that upstream migration of steelhead and salmon is naturally interrupted, and high water velocities which may develop for short periods across the deflated dam will not adversely impact upstream migration.

## II. General

A. The City will exercise reasonable judgment and care in its efforts to comply with the foregoing provisions, maintain the required minimum instream flows and a safe and effective operational diversion facility. If any issues or concerns arise while this MOA is in effect, both parties will make good faith efforts to resolve them directly and amicably in lieu of the DFG issuing a citation or instigating any administrative or judicial action.



B. There are presently several access points from which operations of the diversion facility can be observed. In the event that the existing access points become inadequate to permit periodic observations of the diversion facility operations pursuant to this MOA, and others do not become available, the City shall cooperate to provide reasonable access to DFG for such observations. The City may also make observations of fish passage pursuant to this MOA, but is under no obligation to do so.

C. The terms and conditions of this MOA may be amended at any time, provided such amendments are agreed to in writing by both parties to this MOA. This MOA shall be interpreted as having been drafted equally by both parties.

D. This MOA completely replaces and supersedes the Study MOA. This MOA shall take effect as provided below, and shall continue in effect until terminated by either party in a manner consistent herewith. This MOA may be terminated by either party. Said termination shall become effective six (6) months after the party not initiating the termination has been duly notified in writing.

E. This MOA satisfies Fish and Game Code Section 1601 et. seq. to the extent required by law. Should disagreements arise between staff level personnel of the City and of the DFG concerning the implementation of the terms hereof and those disagreements cannot be resolved by their respective management level supervisors, the issue will be elevated to the Director of the City Water Department and the DFG Regional Manager for resolution. If

resolution of the disagreements is not reached at this administrative level, the arbitration procedures specified in Section 1601 of the Fish and Game Code shall be initiated.

F. The City makes no admissions, directly or indirectly, by entering into this MOA or by the City's related conduct. The parties agree that neither the Study MOA, this MOA, nor the City's related conduct shall in any way be used against the City.

G. If this MOA is found to be in conflict with any other provision of law, the particular term or terms of the MOA found to be in conflict shall be void unless amended to comply with all appropriate local, state, and federal laws. In the event of any conflict or inconsistency between this MOA and any prior agreement between DFG and the City, this MOA shall prevail.

THIS MEMORANDUM OF AGREEMENT SHALL BE IN FULL FORCE AND EFFECT FROM THE DATE ALL PARTIES HAVE SIGNIFIED AGREEMENT BY SIGNATURE OF THE AUTHORIZED REPRESENTATIVE BELOW.

Date: 8-18-98

THE DEPARTMENT OF FISH AND GAME  
The Resources Agency of California

By: Brian Hunter  
Brian Hunter  
Regional Manager