

DRAFT (August 8, 2002)

SAMPLE

**CALIFORNIA GUIDELINES
FOR TRUCKEE RIVER RESERVOIR
OPERATIONS
TO MEET INSTREAM FLOW AND
RECREATION OBJECTIVES**

FOREWARD

After the Truckee River Operating Agreement (TROA) is signed and becomes effective, California will annually submit Guidelines for Truckee River Reservoir Operations concerning instream flow, reservoir levels, and other environmental objectives in the California portion of the Truckee River Basin. California's TROA representative, with advice and counsel from appropriate State agencies and California Truckee River Basin local interest groups, will be responsible for preparing and submitting these Guidelines. The general content and process for submittal of the Guidelines are included in TROA Sections 9.F and 11.C.2(b), respectively. The Guidelines will be submitted to the TROA Administrator and Scheduling Parties each Spring to provide the Administrator the opportunity to encourage inclusion of recommendations in the Guidelines during the subsequent TROA water operations scheduling process.

The purpose of this sample of the California Guidelines is to show what these Guidelines might look like when they are submitted to the TROA Administrator. The Department of Water Resources has prepared this sample in anticipation of TROA being signed for several reasons: (1) California local interests and potential TROA signatories have expressed interest in seeing an example of the Guidelines so they may have a better understanding of what to expect when TROA is operative; (2) during the upcoming TROA EIR/EIS process, information from this sample of the Guidelines will be used to develop criteria for scheduling use of California's Joint Program Fish Credit Water and other reservoir operations in model runs that will help analyze the environmental impacts from TROA operations; and (3) preparation and discussion of this sample of the Guidelines will help in developing an understanding among all parties of the expected type of items that will be addressed in the Guidelines and how they could be presented.

This sample of the Guidelines is based on hydrologic conditions forecasted in the March 25, 2002, United States Bureau of Reclamation, Truckee River Operation Study, which includes anticipated water demands from Nevada water right holders in the Truckee River Basin.

INTRODUCTION

These Guidelines are transmitted to the TROA Administrator and TROA Scheduling Parties for use during the subsequent water operations scheduling process. Under varying conditions of water availability and anticipated use, there is often more than one option for operating upstream reservoirs without significant risk of adverse impacts to existing water rights. Section 9.F.2 of TROA calls for the TROA Administrator to encourage the scheduling parties to schedule in accordance with the California Guidelines and to engage in voluntary exchanges and re-storage options to the extent practicable and consistent with the exercise of water rights, assurance of water supplies, operational considerations, the Settlement Act (Public Law 101-618), and TROA. It is anticipated that, given the opportunity, the TROA Scheduling Parties will use these Guidelines to schedule their operations to help meet California's objectives.

These Guidelines are divided into two parts. Part 1 is "Specific Goals and Objectives for Truckee River Reservoir Operations – 2002," consisting of operational goals and objectives based on a March forecast of 2002 hydrologic conditions and reservoir storage, anticipated water use, and reservoir operations. Part 2 is "General Goals and Objectives for Truckee River Reservoir Operations," consisting of operational goals and objectives for instream flows and reservoir storage that are general in nature and do not usually change from year to year. These general objectives have been developed and are included here to provide continuing overall guidance to the Administrator and other TROA scheduling parties and to provide a continuing framework within which the annual specific goals objectives are presented.

The TROA Scheduling Parties are encouraged to take the California Guidelines into account during the TROA scheduling process and to schedule and adjust their water operations to help meet California's goals and objectives. California may revise and resubmit these 2002 Guidelines to the TROA Administrator and Scheduling Parties in response to their comments and recommendations, changes in schedules for reservoir operations, and changes in forecasted hydrologic conditions.

PART 1 - SPECIFIC GOALS AND OBJECTIVES FOR TRUCKEE RIVER RESERVOIR OPERATIONS – 2002

Reservoir Storage and Instream Flow Goals and Objectives For 2002.

Based on the March 25, 2002, United States Bureau of Reclamation (USBR) forecast of Truckee River reservoir storages and releases (see Table 1), specific proposals to achieve California's goals for improving instream flows and recreation pools in the Truckee River Basin have been developed. These proposals are shown in Table 2 and summarized below:

- Alternate releases between Prosser and Stampede, re-storing some of this water in Boca, where it can be released to meet Pyramid Lake fish needs in November and December --- to: (1) increase the Stampede release to or above the minimum of 45 cfs in July through October, (2) increase the Prosser release above the minimum of 16 cfs in June, and (3) generally even out releases from Stampede and Prosser toward the Preferred Instream Flows.
- Eliminate the spike in releases from Independence Lake in September through consultation with TMWA, releasing water from Independence at a consistent rate over a longer period in July, August and September and re-storing the earlier release as needed to meet TMWA's long-term objectives.
- Increase Donner Lake releases toward the minimum of 8 cfs in July and August and reduce it an equivalent amount in September and October without allowing the lake to drop below 8,000 acre-feet before the end of August.

Table 3 shows the anticipated changes from the projected forecast due to implementing these current year reservoir storage and instream flow objectives.

California will also coordinate with the United States and the Pyramid Tribe to further propose a TROA Section 8.S Exchange, that is, increase low releases of water from Lake Tahoe in lieu of high Stampede releases during the Spring Cui-ui run, with an equivalent increase in low releases from Stampede in lieu of high Lake Tahoe releases in late Summer and early Fall. If such an exchange can be implemented, California will resubmit these Guidelines to take into account this considerable change in scheduled operations.

Goals for Management of Joint Program Fish Credit Water, Environmental Credit Water, and Additional Environmental Credit Water

As of April 1, 2002, prior schedules indicate that California will have established 6,000 acre-feet of Joint Program Fish Credit Water, of which 3,000 acre-feet is in Lake Tahoe and 3,000 acre-feet is in Stampede Reservoir. California's goal is to use this Credit Water to meet the Reservoir

Storage and Instream Flow Goals and Objectives that are not met through proposals made to the TROA Administrator and Scheduling Parties as identified above.

A schedule for releases of Joint Program Fish Credit Water is in Table 4. Included in this schedule is an exchange of 3,000 acre-feet of Fish Credit Water from Lake Tahoe to Stampede, as per an Memorandum Of Understanding with the U.S and Pyramid Lake Tribe. On a monthly basis, the release, re-storage and exchange schedule for the period of April 2002 through December 2002 is:

April	Release 1,800 acre-feet from Lake Tahoe, accumulating all 1,800 acre-feet in Prosser via an exchange.
May	Release 2,100 acre-feet from Tahoe and 1,500 acre-feet from Stampede, accumulating only 900 acre-feet in Boca and 1,200 acre-feet in Prosser via an exchange.
June	Release 2,100 acre-feet from Tahoe and 1,800 acre-feet from Prosser, accumulating all 3,900 acre-feet in Stampede via an exchange.
July	Release 600 acre-feet from Prosser and 300 acre-feet from Stampede, accumulating 300 acre-feet in Independence and 600 acre-feet in Boca via an exchange.
August	Release 600 acre-feet from Prosser, accumulating all 600 acre-feet in Boca via an exchange.
September	Release 600 acre-feet from Stampede, accumulating all 600 acre-feet in Donner via an exchange.
October	Release 600 acre-feet from Stampede, accumulating all 600 acre-feet in Boca via an exchange
November	Release 600 acre-feet from Donner and 600 acre-feet from Stampede and 300 acre-feet from Independence, accumulating 900 acre-feet in Boca
December	Release 300 acre-feet from Stampede and 600 acre-feet from Boca with any exchange

Table 5 shows the anticipated result of these releases if scheduled along with implementation of the specific proposals for improving instream flows and recreation pools in Tables 2 and 3. We also anticipate that, after these releases and exchanges are made, 3,000 acre-feet of Fish Credit Water will remain in Stampede, 3,000 acre-feet of Joint Program Fish Credit Water will remain in Boca, and 3,000 acre-feet of Joint Program Fish Credit Water will have been released with being exchanged.

Consultation between California and Other TROA Parties

These California Guidelines are being transmitted to the TROA Administrator and Scheduling Parties so they may be used to schedule operations (to the extent practicable and consistent with the exercise of water rights, assurance of water supplies, operational considerations, the Settlement Act and TROA) to help meet California's objectives for preferred instream flows and reservoir-based recreation, to limit or eliminate releases above the maximum instream flows, and to provide ramping of flows. Any questions regarding these specific-year reservoir storage and instream flow goals and objectives, or California's management of Joint Program Fish Credit Water, Environmental Credit Water, or Additional Environmental Credit Water should be

directed to California's TROA representative, who will then undertake to consult with the affected California interests.

PART 2 - GENERAL GOALS AND OBJECTIVES FOR TRUCKEE RIVER RESERVOIR OPERATIONS

General Objectives for Instream Flows below Reservoirs

California's general objective for instream flows below reservoirs is that, to the extent possible, they will be maintained between the "Minimum Flows" and the "Maximums Flows" for each reach as shown in Table 6. When possible, instream flows should be balanced toward the "Preferred Flows" in Table 6, for as many reaches and for as long a time as is feasible. If a choice is to be made among stream reaches, the desired priority, from highest to lowest, is:

- 1) The reach between Stampede and Boca Reservoirs;
- 2) The reach between Independence Lake and Stampede Reservoir;
- 3) The reach between Prosser Creek Reservoir and the Truckee River;
- 4) The main stem of the Truckee River; and
- 5) The reach between Donner Lake and the Truckee River.

Another instream flow objective is to minimize rapid changes in flow rates through "ramping" of reservoir releases. It is best to limit the rate of increase or decrease to the smallest steps feasible. Ramping is most important in the reaches below Lake Tahoe, Donner Lake, Prosser Creek Reservoir, and Stampede Reservoir, and it is more important to ramp releases down slowly (limit the rate of decrease) than ramp releases up slowly. The California Department of Fish and Game (Instream Flow Requirements, Truckee River Basin, Lake Tahoe to Nevada, 1996) recommends:

- Increasing flows - Flows should not be increased more than 100% during a 24-hour period; the change during the 24-hour period should occur in a minimum of three, proportional amounts (i.e., one-third the total 24-hour change per 8 hours).
- Decreasing flows - Flows should not be decreased more than 50% during a 24-hour period; the change during the 24-hour period should occur in a minimum of three, proportional amounts (i.e., one-third the total 24-hour change per 8 hours).

One further instream flow objective, which responds to an infrequent but very serious concern, is to prevent the Truckee River from Lake Tahoe to the Little Truckee River from freezing solid in the winter months. To prevent icing in the stream sections outlined below, the California Department of Fish and Game recommends maintaining the following minimum flows in these stream sections during the winter months:

- Donner Creek, Donner Lake to the Truckee River – 3 cfs.
- Independence Creek, Independence Lake to the Little Truckee River – 4 cfs.
- Truckee River, Lake Tahoe to Donner Creek – 30 cfs.
- Truckee River, Donner Creek to the Little Truckee River – 50 cfs.

General Objectives for Reservoir Storage

California's general objective for reservoir storage is that the specified reservoirs will be maintained at or above the "Preferred Minimum Storage" levels shown in Table 7, from the start of the Memorial Day weekend to the end of the Labor Day weekend of each year.

To maintain maximum recreation-based opportunities in California reservoirs in the Truckee River Basin, maintaining reservoirs above the preferred minimum storage levels is the optimal objective during the period of June 1 through September 15.

For Donner Lake, every effort should be made to maintain the "Preferred Minimum Storage" of 8,000 acre-feet through the Labor Day weekend, even at the expense of drawing down other reservoirs through exchanges. If a choice must be made among other reservoirs, the preferred operation is as follows:

1. Whenever storage in Stampede Reservoir is above its "Preferred Minimum Storage" specified in Table 5, it is preferable to release water from Lake Tahoe or Stampede Reservoir in lieu of releases from Boca or Prosser Creek Reservoirs to meet water demands; so that Boca and Prosser Creek Reservoirs do not drop below their "Preferred Minimum Storages" as specified in Table 7.
2. If the storage in Stampede Reservoir drops below its "Preferred Minimum Storage" specified in Table 7 and a release from Lake Tahoe is not feasible, releases should be made from Prosser Creek Reservoir and Boca Reservoir equally in lieu of releases from Stampede Reservoir to meet water demands.
3. If any reservoir drops below the "Minimum Storage" identified in Table 7, releases from that reservoir should be continued in lieu of releases from other reservoirs to allow higher storage's to be maintained in the other reservoirs.
4. Dropping any reservoir below levels that are necessary to protect fish ("Minimum Fish Storage") as specified in Table 7 should be avoided. If it becomes necessary to drop the reservoirs below minimum fish storage levels, the current objective is to draw down all reservoirs proportionally below this storage level. Please consult with California's TROA representative(s) if this becomes necessary, however, since more specific priorities among reservoirs may have been developed after this writing.

Establishing Priorities among Instream Flow and Reservoir Storage Objectives

Instream flow objectives could, at times, conflict with the reservoir storage objectives. The "Specific Goals and Objectives" in Part 1 will, under most circumstances, describe how to best make this choice given existing hydrologic conditions. For example, an operational objective for Donner Lake could be to give priority to maintaining reservoir levels over instream flows between Donner Lake and the Truckee River, during periods when there is no natural inflow to the Lake.

The California TROA representative(s) will make recommendations to the TROA Administrator on instream flow needs and reservoir levels to support recreation in consultation with California interests. If there are competing or conflicting demands for instream flows or reservoir-based recreation, prior to making such recommendations, the California TROA representatives will consult with potentially affected California interests to assist in determining the best course of action. During the consultation process, until a decision is made, maintenance of instream flows should be given priority. Parties that may be consulted during this examination process include the following:

- Truckee River Basin Water Group
- Placer County, Nevada County, And Sierra County
- Town of Truckee
- Tahoe-Truckee Sanitation Agency
- Local Rafting Interests
- Local Fishery Interests
- Local Water Supply Interests
- Local Recreation Interests
- State of California agencies, including the Departments of Fish and Game, Parks and Recreation, and Water Resources, and the State Water Quality Control Board and Lahontan Regional Water Quality Control Board
- Federal Agencies, including the U.S. Fish and Wildlife Service, U.S. Forest Service, and the U.S. Bureau of Reclamation

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TABLES FOR

SAMPLE

CALIFORNIA GUIDELINES

FOR TRUCKEE RIVER RESERVOIR

OPERATIONS

TO MEET INSTREAM FLOW AND

RECREATION OBJECTIVES

Table 1 - USBR 50 Percent Forecast* for Truckee River Basin Reservoirs (March 25, 2002)

	Lake Tahoe Elev (FEET)	Truckee River at Tahoe C. (CFS)	Donner Lake Storage (TAF)	Donner Lake Release (CFS)	Prosser Res Storage (TAF)	Prosser Res Release (CFS)	Indep Lake Storage (TAF)	Indep Cr Below Indep (CFS)	Stampede Res Storage (TAF)	Stampede Res Release (CFS)	Boca Res Storage (TAF)	Boca Res Release (CFS)
Jan-02	6224.3	62 ▾	3.6	27	8.3	42 ☺	15.4	5 ▾	169.1	54 ☺	8.0	38
Feb-02	6224.3	94 ☺	3.8	20	8.8	33 ☺	15.7	4 ☺	168.8	65 ☺	8.6	67
Mar-02	6224.5	54 ▾	4.0	35	9.8	56 ☺	16.3	5 ☺	166.4	140 ☺	16.4	43
Apr-02	6224.7	71 ▾	6.0	56 ☺	11.9	154 ⊥	16.4	34 ☺	161.9	346 ⊥	33.1	76
May-02	6225.2	68 ▾	9.5	69 ☺	18.9	126 ☺	17.2	56 ⊥	179.0	112 ☺	40.2	0
Jun-02	6225.4	72 ▾	9.5 ☺	35 ☺	26.8 ☺	12 ☺	17.1	50 ⊥	176.3 ☺	227 ☺	40.1 ☺	227
Jul-02	6225.1	261 ☺	9.2 ☺	3 ▾	23.5 ☺	91 ☺	16.8	11 ☺	174.8 ☺	29 ▾	34.9 ☺	106
Aug-02	6224.5	375 ☺	8.6 ☺	3 ▾	18 ▾	98 ⊥	16.4	5 ☺	172.5 ☺	29 ▾	32.7 ▾	56
Sep-02	6224.0	236 ☺	6.9	27 ⊥	14.0	72 ⊥	14.7	29 ⊥	172.0	30 ▾	24.5	162
Oct-02	6223.7	101 ☺	4.5	48 ☺	9.8	83 ☺	14.4	8 ☺	172.0	35 ▾	15.5	187
Nov-02	6223.6	52 ▾	3.2	33 ☺	9.8	22 ▾	14.3	5 ▾	167.2	115 ☺	10.5	197
Dec-02	6223.6	49 ▾	3.2	16	9.8	30 ☺	14.2	9 ☺	167.2	57 ☺	5.3	141

KEY: ⊥ instream flows are above the maximum / reservoir storage exceeds capacity
 ☺ instream flows are within the preferred range / reservoir storage is within the preferred range
 ▾ instream flows are below the minimums / reservoir storage is below preferred minimum reservoir storage
 ▾ instream flows are below pre-TROA minimums / reservoir storage is below the minimum reservoir storage
 please note - the first, third and fourth of these special characters may show up as the same dash "-" on some printers

Reservoir storage is in thousand acre-feet at the end of the month
 Releases are in cubic feet per second as a monthly average

- The 50 Percent Streamflow and Reservoir Storage Forecast is the “Most Probable” forecast and is generally considered to be the best estimate of monthly average streamflow and end-of-month reservoir storage amounts that can be produced given current conditions and based upon the outcome of similar situations in the past. There is a 50 percent chance that actual average streamflow and reservoir storage will be less than this forecast value and a 50 percent that it will exceed this value.

Table 2 - Specific Proposals for Voluntary Operations to Improve Instream Flows and Recreation Pools - 2002

Problem Statement and Proposed Change to March 2002 USBR Forecast	Consultation	Proposed Action to Implement Proposed Change to Forecast																											
<p>Stampede releases are low in July-Oct while Prosser Releases are high; and Prosser releases are low in June and Nov when Stampede releases are high.</p>	<p>Check with USFWS/Tribe & Water Master.</p>																												
<table border="0" style="width: 100%; text-align: center;"> <tr> <td></td> <td>Prosser</td> <td>Stampede</td> </tr> <tr> <td></td> <td>Frctst -> Prop</td> <td>Frctst -> Prop</td> </tr> <tr> <td>June</td> <td>12 -> 42 cfs</td> <td>227 -> 197 cfs</td> </tr> <tr> <td>July</td> <td>91 -> 66 cfs</td> <td>29 -> 69 cfs</td> </tr> <tr> <td>Aug</td> <td>98 -> 73 cfs</td> <td>29 -> 69 cfs</td> </tr> <tr> <td>Sept</td> <td>72 -> 87 cfs</td> <td>30 -> 45 cfs.</td> </tr> <tr> <td>Oct</td> <td>83 -> 88 cfs</td> <td>30 -> 45 cfs</td> </tr> <tr> <td>Nov</td> <td>22 -> 22 cfs</td> <td>115 -> 45 cfs</td> </tr> <tr> <td>Dec</td> <td>30 -> 30 cfs</td> <td>57 -> 52 cfs</td> </tr> </table>		Prosser	Stampede		Frctst -> Prop	Frctst -> Prop	June	12 -> 42 cfs	227 -> 197 cfs	July	91 -> 66 cfs	29 -> 69 cfs	Aug	98 -> 73 cfs	29 -> 69 cfs	Sept	72 -> 87 cfs	30 -> 45 cfs.	Oct	83 -> 88 cfs	30 -> 45 cfs	Nov	22 -> 22 cfs	115 -> 45 cfs	Dec	30 -> 30 cfs	57 -> 52 cfs	<p>If the Prosser releases are primarily Uncommitted Water that could be released at a different schedule in coordination with Stampede releases and still meet needs in Nevada.</p>	<p>Request USFWS/Tribe alternate releases between Prosser and Stampede as proposed, also releasing and re-storing some of this water in Boca, where it can be released to meet downstream needs in Nov and Dec.</p>
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<p>Re-storage in (+) & release (-) from Boca</p> <table border="0" style="width: 100%; text-align: center;"> <tr> <td>July</td> <td>+15 cfs</td> </tr> <tr> <td>Aug</td> <td>+15 cfs</td> </tr> <tr> <td>Sept</td> <td>+30 cfs</td> </tr> <tr> <td>Oct</td> <td>+15 cfs</td> </tr> <tr> <td>Nov</td> <td>- 70 cfs</td> </tr> <tr> <td>Dec</td> <td>- 5 cfs</td> </tr> </table>	July	+15 cfs	Aug	+15 cfs	Sept	+30 cfs	Oct	+15 cfs	Nov	- 70 cfs	Dec	- 5 cfs	<p>If the Prosser releases are primarily T-P-Exchange Water that may be blended with Tahoe and Boca releases on a different schedule.</p>	<p>Request the Water Master blend T-P-Exchange Water with other Floriston Rate releases toward proposed flows to the extent acceptable. Request USFWS/Tribe and others exchange Credit Water from Stampede to Prosser to assist in otherwise meeting proposed flows to the extent their needs are still met.</p>															
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Table 2 (continued) - Specific Proposals for Voluntary Operations to Improve Instream Flows and Recreation Pools - 2002

Problem Statement and Proposed Change to March 2002 USBR Forecast	Consultation	Proposed Action to Implement Proposed Change to Forecast																					
<p>Very high release from Independence Lake in Sept (monthly average)</p> <table border="0" data-bbox="138 548 722 812"> <tr> <td></td> <td style="text-align: center;">Forecast</td> <td style="text-align: center;">Proposed</td> </tr> <tr> <td>July</td> <td style="text-align: center;">11 -></td> <td style="text-align: center;">19 cfs</td> </tr> <tr> <td>Aug</td> <td style="text-align: center;">5 -></td> <td style="text-align: center;">13 cfs</td> </tr> <tr> <td>Sept</td> <td style="text-align: center;">29 -></td> <td style="text-align: center;">13 cfs</td> </tr> <tr> <td>Oct</td> <td style="text-align: center;">8 -></td> <td style="text-align: center;">8 cfs</td> </tr> <tr> <td>Nov</td> <td style="text-align: center;">5 -></td> <td style="text-align: center;">5 cfs</td> </tr> </table>		Forecast	Proposed	July	11 ->	19 cfs	Aug	5 ->	13 cfs	Sept	29 ->	13 cfs	Oct	8 ->	8 cfs	Nov	5 ->	5 cfs	<p>Check with TMWA.</p> <p>If the Sept release from Independence is needed as an exchange to another reservoir or to meet downstream needs in Nevada.</p> <p>If the Sept release from Independence is scheduled for some other reason.</p>	<p>Request TMWA exchange 960 acre-feet more from Independence Lake at a constant rate in July-Aug to another reservoir (Stampede?) where it can still be used; reducing the release from Independence accordingly in Sept.</p> <p>Request TMWA exchange their water, as stated in the row above, to the extent acceptable.</p>			
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July	11 ->	19 cfs																					
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Oct	8 ->	8 cfs																					
Nov	5 ->	5 cfs																					
<p>Donner Lake release (monthly average) is below the minimum (8 cfs) in July-Aug and above the maximum in Sept.</p> <table border="0" data-bbox="138 958 722 1292"> <tr> <td></td> <td style="text-align: center;">Forecast</td> <td style="text-align: center;">Proposed</td> </tr> <tr> <td>June</td> <td style="text-align: center;">35 -></td> <td style="text-align: center;">35 cfs</td> </tr> <tr> <td>July</td> <td style="text-align: center;">3 -></td> <td style="text-align: center;">7 cfs</td> </tr> <tr> <td>Aug</td> <td style="text-align: center;">3 -></td> <td style="text-align: center;">7 cfs</td> </tr> <tr> <td>Sept</td> <td style="text-align: center;">27 -></td> <td style="text-align: center;">23 cfs</td> </tr> <tr> <td>Oct</td> <td style="text-align: center;">48 -></td> <td style="text-align: center;">44 cfs</td> </tr> <tr> <td>Nov</td> <td style="text-align: center;">33 -></td> <td style="text-align: center;">33 cfs</td> </tr> </table>		Forecast	Proposed	June	35 ->	35 cfs	July	3 ->	7 cfs	Aug	3 ->	7 cfs	Sept	27 ->	23 cfs	Oct	48 ->	44 cfs	Nov	33 ->	33 cfs	<p>Check with TMWA/TCID (and Donner Lake recreation interests).</p> <p>If the Sept-Oct releases from Donner are needed as an exchange to another reservoir or to meet downstream needs in Nevada.</p> <p>If the Sept-Oct releases from Donner are scheduled for some other reason.</p>	<p>Request TMWA/TCID exchange 480 acre-feet (or some lesser amount that does not allow the lake to drop below an acceptable end-of-Aug recreation target - assumed to be 8,000 acre-feet here) more from Donner Lake at a constant rate in July-Aug to another reservoir where it can still be used, reducing the Donner release accordingly in Sept-Oct.</p> <p>Request TMWA/TCID exchange their water, as stated in the row above, to the extent acceptable.</p>
	Forecast	Proposed																					
June	35 ->	35 cfs																					
July	3 ->	7 cfs																					
Aug	3 ->	7 cfs																					
Sept	27 ->	23 cfs																					
Oct	48 ->	44 cfs																					
Nov	33 ->	33 cfs																					

Table 3 - Proposed Reservoir Storage and Instream Flows to meet Current-year Objectives with Voluntary Changes to Operations

	Lake Tahoe Elev (FEET)	Truckee River at Tahoe C. (CFS)	Donner Lake Storage (TAF)	Donner Lake Release (CFS)	Prosser Res Storage (TAF)	Prosser Res Release (CFS)	Indep Lake Storage (TAF)	Indep Cr below Indep (CFS)	Stampede Res Storage (TAF)	Stampede Res Release (CFS)	Boca Res Storage (TAF)	Boca Res Release (CFS)
Jan-02	6224.3	62 ▾	3.6	27	8.3	42 ☺	15.4	5 ▾	169.1	54 ☺	8.0	38
Feb-02	6224.3	94 ☺	3.8	20	8.8	33 ☺	15.7	4 ☺	168.8	65 ☺	8.6	67
Mar-02	6224.5	54 ▾	4.0	35	9.8	56 ☺	16.3	5 ☺	166.4	140 ☺	16.4	43
Apr-02	6224.7	71 ▾	6.0	56 ☺	11.9	154 ⊥	16.4	34 ☺	161.9	346 ⊥	33.1	76
May-02	6225.2	68 ▾	9.5	69 ☺	18.9	126 ☺	17.2	56 ⊥	179.0	112 ☺	40.2	0
Jun-02	6225.4	72 ▾	9.5 ☺	35 ☺	25 ☺	42 ☺	17.1	50 ⊥	178.1 ☺	197 ☺	40.1 ☺	197
Jul-02	6225.1	261 ☺	8.9 ☺	7 ▾	23.2 ☺	66 ☺	16.3	19 ☺	174.7 ☺	69 ☺	35.8 ☺	139
Aug-02	6224.5	375 ☺	8.2 ☺	7 ▾	19.2 ☺	73 ⊥	15.4	13 ☺	170.4 ☺	69 ☺	34.5 ☺	89
Sep-02	6224.0	236 ☺	6.7	23 ⊥	14.3	87 ⊥	14.7	13 ☺	168.1	45 ☺	28.1	131
Oct-02	6223.7	101 ☺	4.5	44 ☺	9.8	88 ☺	14.4	8 ☺	167.5	45 ☺	19.9	182
Nov-02	6223.6	52 ▾	3.2	33 ☺	9.8	22 ▾	14.3	5 ▾	166.9	45 ☺	10.8	197
Dec-02	6223.6	49 ▾	3.2	16	9.8	30 ☺	14.2	9 ☺	167.2	52 ☺	5.3	141

KEY: ⊥ instream flows are above the maximum / reservoir storage exceeds capacity
 ☺ instream flows are within the preferred range / reservoir storage is within the preferred range
 ▾ instream flows are below the minimums / reservoir storage is below preferred minimum reservoir storage
 ▾ instream flows are below pre-TROA minimums / reservoir storage is below the minimum reservoir storage
 please note - the first, third and fourth of these special characters may show up as the same dash "-" on some printers

Reservoir storage is in thousand acre-feet at the end of the month
 Releases are in cubic feet per second as a monthly average

This does not incorporate the effect of a TROA Section 8.S Exchange, which could decrease high releases from Stampede in March-June, increase low releases from Lake Tahoe during the same time period, then increase low releases from Stampede and decrease high releases from Lake Tahoe in July-September.

Table 4. Proposed Average Monthly Release Schedule for JPFCW and some FCW

	Truckee River at Tahoe City (CFS)	Donner Lake Release (CFS)	Prosser Res Release (CFS)	Indep Res Release (CFS)	Stampede Res Release (CFS)	Boca Res Release (CFS)	
Jan-02							Jan-02
Feb-02							Feb-02
Mar-02							Mar-02
Apr-02	30.0		(30.0)				Apr-02
May-02	35.0		(20.0)		25.0	(15.0)	May-02
Jun-02	35.0		30.0		(65.0)		Jun-02
Jul-02			10.0	(5.0)	5.0	(10.0)	Jul-02
Aug-02			10.0			(10.0)	Aug-02
Sep-02		(10.0)			10.0		Sep-02
Oct-02					10.0	(10.0)	Oct-02
Nov-02		10.0		5.0	10.0	(15.0)	Nov-02
Dec-02					5.0	10.0	Dec-02

Negative releases (in parenthesis) indicate an exchange or re-storage of water into that reservoir

Table 5 - Proposed Reservoir Storage and Instream Flows to meet Current-Year Objectives with Voluntary Changes to Operations and Releases of JPFCW and some FCW

	Lake Tahoe Elev (FEET)	Truckee River at Tahoe City (CFS)	Donner Lake Storage (TAF)	Donner Lake Release (CFS)	Prosser Res Storage (TAF)	Prosser Res Release (CFS)	Indep Lake Storage (TAF)	Indep Cr below Indep	Stampede Res Storage (TAF)	Stampede Res Release (CFS)	Boca Res Storage (TAF)	Boca Res Release (CFS)
Jan-02	6224.3	62 ▾	3.6	27	8.3	42 ☺	15.4	5 ▾	169.1	54 ☺	8.0	38
Feb-02	6224.3	94 ☺	3.8	20	8.8	33 ☺	15.7	4 ☺	168.8	65 ☺	8.6	67
Mar-02	6224.5	54 ▾	4.0	35	9.8	56 ☺	16.3	5 ☺	166.4	140 ☺	16.4	43
Apr-02	6224.7	101 ☺	6.0	56 ☺	13.7	124 ☺	16.4	34 ☺	161.9	346 ⊥	33.1	76
May-02	6225.2	103 ☺	9.5	69 ☺	22.0	106 ☺	17.2	56 ⊥	177.5	137 ☺	41.1	10
Jun-02	6225.3	107 ☺	9.5 ☺	35 ☺	26.2 ☺	72 ☺	17.1	50 ⊥	180.4 ☺	132 ☺	41 ☺	132
Jul-02	6225.0	261 ☺	8.9 ☺	7 ▾	23.8 ☺	76 ☺	16.6	14 ☺	176.8 ☺	69 ☺	37.3 ☺	129
Aug-02	6224.4	375 ☺	8.2 ☺	7 ▾	19.2 ☺	83 ⊥	15.7	13 ☺	172.5 ☺	69 ☺	36.7 ☺	79
Sep-02	6224.0	236 ☺	7.3	13 ☺	14.3	87 ⊥	15.0	13 ☺	169.6	55 ☺	30.2	141
Oct-02	6223.6	101 ☺	5.1	44 ☺	9.8	88 ☺	14.7	8 ☺	168.4	55 ☺	22.6	182
Nov-02	6223.6	52 ▾	3.2	43 ☺	9.8	22 ▾	14.3	10 ☺	167.2	60 ☺	14.5	197
Dec-02	6223.6	49 ▾	3.2	16	9.8	30 ☺	14.2	9 ☺	167.2	57 ☺	8.4	156

KEY: ⊥ instream flows are above the maximum / reservoir storage exceeds capacity
 ☺ instream flows are within the preferred range / reservoir storage is within the preferred range
 ▾ instream flows are below the minimums / reservoir storage is below preferred minimum reservoir storage
 ▿ instream flows are below pre-TROA minimums / reservoir storage is below the minimum reservoir storage
 please note - the first, third and fourth of these special characters may show up as the same dash "-" on some printers

Reservoir storage is in thousand acre-feet at the end of the month.
 Releases are in cubic feet per second as a monthly average.

Table 6 - Instream Flow General Objectives (in cubic feet per second)*

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>
Minimum flow out of Lake Tahoe	75	75	75	75	75	75	75	75	75	75	75	75
Preferred flow out of Lake Tahoe	300	300	300	300	250	250	300	300	300	300	250	250
Maximum flow out of Lake Tahoe	600	600	600	600	500	500	600	600	600	600	500	500
Min. flow, Truckee R. below Donner Ck.	100	100	100	100	100	100	100	100	100	100	100	100
Pref. flow, Truckee R. below Donner Ck.	300	300	300	300	250	250	300	300	300	300	250	250
Max. flow, Truckee R. below Donner Ck.	600	600	600	600	500	500	600	600	600	600	500	500
Minimum flow, TruckeeR. below Boca	150	150	150	150	150	150	150	150	150	150	150	150
Preferred flow, Truckee R. below Boca	300	300	300	300	250	250	300	300	300	300	250	250
Maximum flow, Truckee R. below Boca	600	600	600	600	500	500	600	600	600	600	500	500
Minimum flow out of Donner Lake	8	8 ¹	not appl ¹	not appl ¹	not appl ¹	not appl ¹	8 ^{1,2}	8 ²	8 ²	8 ²	8 ²	8
Preferred flow out of Donner Lake	50	50	not appl ¹	not appl ¹	not appl ¹	not appl ¹	50	50	50	50	10	10
Maximum flow out of Donner Lake	100	100	not appl ¹	not appl ¹	not appl ¹	not appl ¹	100	100	100	100	20	20
Minimum flow out of Prosser ³	25	25	25	25	25	12	12	12	12	12	12	25
Preferred flow out of Prosser	50	50	50	50	35	35	75	75	75	75	30	30
Maximum flow out of Prosser	100	100	100	100	70	70	150	150	150	150	60	60
Minimum flow out of Independence	7	7	7	7	4	4	8	8	8	8	4	4
Preferred flow out of Independence	20	20	20	20	10	10	20	20	20	20	10	10
Maximum flow out of Independence	40	40	40	40	20	20	40	40	40	40	20	20
Preferred flow into Stampede	90	90	90	90	50	50	90	90	90	90	30	30
Minimum flow out of Stampede	45	45	45	45	45	45	45	45	45	45	45	45
Preferred flow out of Stampede	125	125	125	125	100	100	125	125	125	125	100	100
Maximum flow out of Stampede	250	250	250	250	200	200	250	250	250	250	200	200

1. Current operations preclude adjusting the Donner Lake releases from November 15 to April 15 due to Dam Safety Requirements.
2. The minimum-flow objective for Donner Lake is reduced to 5 cfs if the lake expected to have less than 8,000 acre-feet of storage on Labor Day.
3. Since physical constraints prevent releases between 12 cfs and 25 cfs, this is the minimum flow until the dam is modified to allow a minimum flow of 16 cfs throughout the year as requested by the CDFG.
4. Priority will be given to maintaining reservoir levels over instream flows between Donner Lake and the Truckee River during periods when there is no natural inflow to the Lake.

*Developed from Instream Flow Requirements, Truckee River Basin, Lake Tahoe to Nevada (California Department of Fish and Game, 1996)

Table 7 - Reservoir Storage Objectives (in thousands of acre-feet)

Reservoir Storage for Recreation Purposes

- Minimum storage is an absolute minimum in the sense that recreation opportunities do not exist when storage is lower.
- June through August storage's are inclusive of the Memorial Day and Labor Day holiday weekends.

	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>
Minimum Storage in Donner Lake ¹	none	None	6.3	6.3	6.3	none						
Preferred Min. Storage in Donner Lake	none	none	8	8	8	none						
Minimum Storage in Prosser Creek Res.	none	none	11	11	11	none						
Preferred Min. Storage in Prosser Creek Res.	none	none	19	19	19	none						
Minimum Storage in Stampede Res.	none	none	62	62	62	none						
Preferred Min. Storage in Stampede Res.	none	none	127	127	127	none						
Minimum Storage in Boca Res.	none	none	22	22	22	none						
Preferred Min. Storage in Boca Res.	none	none	33.5	33.5	33.5	none						

Reservoir Storage Levels to Protect Reservoir Fisheries

Minimum Fish Storage - Prosser Creek Res.	5	5	5	5	5	5	5	5	5	5	5	5
Minimum Fish Storage - Stampede Res.	15	15	15	15	15	15	15	15	15	15	15	15
Minimum Fish Storage - Boca Res.	10	10	10	10	10	10	10	10	10	10	10	10
Min. Fish Storage in Independence Lake ²	none	none	none	none	none	none	7.5	7.5	7.5	7.5	none	none

Other Reservoir Storage Objectives

Exchanges out of Lake Tahoe may be recommended at appropriate times to help reduce the potential for wave-induced erosion, to increase the available habitat for the Tahoe Yellow Cress, and to help meet water quality objectives for the Truckee River.

¹ Minimum storage for Donner Lake is that specified in the Donner Lake Indenture Agreement (May 3, 1943) below which releases are not permitted

² Increased storage to improve spawning access for the Independence Lake population of Lahontan Cutthroat Trout