

CHAPTER 2

Proposed Project and Alternatives

CHAPTER 2

PROPOSED PROJECT AND ALTERNATIVES

CEQA Guidelines Section 21065 define a “project” as an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following:

- ❑ An activity directly undertaken by any public agency.
- ❑ An activity undertaken by a person which is supported, in whole or in part, through contracts, grants, subsidies, loans or other forms of assistance from one or more public agencies.
- ❑ An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

For the purposes of this Draft EIR, the term “proposed project” refers to the overall activity (principally, changes to the Mammoth Creek fishery bypass flow requirements). As described in Chapter 1 - Introduction, the purpose and objectives of the proposed project are to change the permit and licenses granted to the District by the SWRCB for the following components: (1) the fishery bypass flow requirements for Mammoth Creek and the point of measurement for compliance; (2) the District’s authorized POU for its water right permit and licenses; and (3) certain WOCs. The proposed project does not require construction of new facilities or modification of the District’s existing water distribution system.

The term “Proposed Project Alternative” refers to an actual alternative that includes specific changes to the baseline physical condition (Existing Condition) that are evaluated for potential impacts in this Draft EIR. The District has petitioned the SWRCB to amend the District’s Permit 17332 to include the fishery bypass flow requirements and other aforementioned changes associated with the Proposed Project Alternative, and to apply these revisions to the District’s water right Licenses 5715 and 12593.

2.1 ALTERNATIVES CARRIED FORWARD FOR DETAILED EVALUATION

Under Section 15126.6 of the CEQA Guidelines, an EIR shall describe a range of reasonable alternatives which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project (if any), and evaluate the comparative merits of the alternatives. CEQA also requires analysis of a “No Project” alternative.

This section describes the alternatives carried forward for detailed evaluation in this Draft EIR. The development of these alternatives is described in Section 2.2.

2.1.1 PROPOSED PROJECT ALTERNATIVE

The Proposed Project Alternative consists of the following three components: (1) the fishery bypass flow requirements for Mammoth Creek and the point of measurement for compliance; (2) the District’s authorized POU for its water right permit and licenses; and (3) modifications to certain WOCs. Each of these components is more fully described below.

2.1.1.1 FISHERY BYPASS FLOW REQUIREMENTS

The Proposed Project Alternative includes the following fishery bypass flow requirements. Under the Proposed Project Alternative, the measurement point for compliance would be moved to the OMR Gage.

<u>Month</u>	<u>Mean Daily Flow (cfs) at the OMR Gage</u>
January	6.4
February	6.0
March	7.8
April	9.8
May	18.7
June	20.8
July	9.9
August	7.2
September	5.5
October	5.5
November	5.9
December	5.9

The fishery bypass flow requirements included in the Proposed Project Alternative also would include a year-round bypass flow requirement of 4 cfs (mean daily flow) at the OLD395 Gage. The effect of these requirements means that the District shall not divert water to storage or divert water directly from Mammoth Creek for municipal purposes whenever average daily stream flows are less than those specified for the OMR Gage, or less than 4 cfs at the OLD395 Gage on a year-round basis.

2.1.1.2 CHANGE THE POINT OF MEASUREMENT FOR FISHERY BYPASS FLOW COMPLIANCE

In addition to changing the fishery bypass flow requirements specified in Permit 17332, the District is also proposing to change the principal location at which Mammoth Creek fishery bypass flows are measured. Permit 17332 requires flows to be measured at a gage just downstream of the Old Highway 395 crossing of Mammoth Creek (OLD395 Gage). This gage is managed by the LADWP. Under the Proposed Project Alternative, Mammoth Creek flows would be measured at the District's OMR Gage located several miles upstream.

The purpose of this component of the Proposed Project Alternative is to allow the District to operate the system more efficiently, and allow the District to respond more quickly in adjusting its diversions to ensure compliance with the fishery bypass flow requirements. Changing the principal point of measurement from the OLD395 Gage specified in Permit 17332 to the District's OMR Gage provides more timely and reliable monitoring of daily flows.

2.1.1.3 CHANGE THE PLACE OF USE

The District is the primary water purveyor in the Mammoth Lakes area. Beginning around 1973, the District has entered into several agreements to provide potable water to outlying users, beyond the current POU boundary. This was done to provide reliable potable water service under changing and more restrictive drinking water regulations, and do so in a more efficient and reliable manner than these individual entities could implement. The District desires to modify its authorized POU to include the specific entities covered under these agreements.

Continued provision of potable water service to these entities would occur using existing infrastructure within the District's water supply distribution and conveyance system, therefore no physical improvements are required. The annual supply of water to each entity would not be increased beyond the historic average use.

PROVIDE TREATED WATER TO ADDITIONAL CUSTOMERS

Presently, the District is supplying treated water to existing private and public entities that are located outside of the District's authorized POU, as provided in Permit 17332 and Licenses 5715 and 12593. Most of these entities possess water rights (varying from claims to perfected licenses) in the Mammoth Creek watershed, and historically have supplied themselves with water using private treatment systems. For the reasons noted above, these entities have entered into long-term agreements with the District for potable water supply service. Because these individual places of use are not presently located within the District's authorized POU, the District's POU under Permit 17332 and Licenses 5715 and 12593 would be modified to include these locations.

The District is proposing to continue to supply the additional POU areas with potable water service, using the District's existing water distribution system. These POU areas (or entities) are described in **Table 2-1**. The existing water rights held by some of these entities are proposed for transfer to the District, with the exception of those water rights associated with the Shady Rest Park and the USFS. The District is proposing that the potential diversion quantities related to the individual water rights revert to instream flows. The District would continue to serve these entities using a combination of its current licenses and permits for surface water supply and existing groundwater supplies.

- ❑ **Mill City Tract Cabins:** Under a 1989 agreement, responsibility for delivering potable water to 14 seasonal residences in the Mill City Tract was transferred from the USFS to the District. The old diversion off of the Bodle Ditch was abandoned. Under the agreement, all claims to water rights in Bodle Ditch, Lake Mary, and Mammoth Creek were relinquished. The District has been serving potable water to Mill City Tract Cabins, averaging approximately 0.6 AF per year.
- ❑ **Twin Lakes Campground and Cabins:** Under a 1985 agreement, the District has been serving potable water to the USFS Twin Lakes Campground and cabins along the south and eastern shore of Twin Lakes, averaging approximately 1.0 AF per year. The campground is occupied approximately 4 months out of each year. Connection was requested into the District's system due to water treatment concerns over a spring supply.
- ❑ **Mammoth Lakes Pack Station:** The District has been serving treated water to this pack station at an average of 1.0 AF per year. This pack station is occupied approximately 4 months out of each year. Connection was requested into the District's system due to water quality concerns related to a water supply originating in the Bodle Ditch.
- ❑ **Twin Lakes Art Gallery:** The District has been serving treated water to this small art gallery building, averaging approximately 0.04 AF per year. This gallery is occupied approximately 4 months out of each year. Connection was requested into the District's system due to water quality concerns related to a water supply originating in the Bodle Ditch.

Table 2-1. Proposed Additions to the District's Authorized Place of Use

Place of Use (Entity)	License Holder	Historic Point of Diversion	Water Rights Type	Authorized Amount/ Period	Annual Average Use (AF)
Mill City Tract Lease Cabins	USFS	Lake Mary via Bodle Ditch	License No. 3909	5,500 gpd ^a 5/1 – 10/15	0.6
Twin Lakes Campground and Lease Cabins	USFS	Lake Mary	Statement No. 10559	About 3,350 gpd ^b 5/1 – 10/31	1.0
		Twin Lakes Creek	License No. 2132	200 gal/day 5/1 – 10/15	
		Unnamed tributary to Twin Lakes	License No. 2101	500 gal/day 5/1 – 10/31	
Mammoth Lakes Pack Station	Individual	Lake Mary	License No. 3983	1,600 gpd 6/1 – 10/31	1.0
		Coldwater Creek (from Lake Mary)	License No. 2788	1,000 gal/day 5/1 – 10/31	
Twin Lakes Art Gallery	Individual	Coldwater Creek (from Lake Mary)	License No. 2261	400 gpd 6/1 – 10/1	0.04
Tamarack Lodge/Cabins	MMSA	Twin Lake Creek and Twin Lakes	License No. 1227	8,000 gpd 5/15 – 11/1	7.8
Sherwin Creek Campground	USFS	Sherwin Creek	Statement No. 3370	130 gpd 6/1 – 11/15	0.2
YMCA Camp	Unknown	Sherwin Creek	Unknown	Unknown	1.2
Sierra Meadows and USFS Pack Offices	USFS	Mammoth Creek	Unknown	About 600 gpd ^c 5/1 – 10/1	1.2
Mammoth Creek Park (Town of Mammoth Lakes)	USFS	Mammoth Creek	Unknown	About 600 gpd 5/1 – 10/1	7.0
Shady Rest Park (Town of Mammoth Lakes)	District	N/A	Licenses 5715, 12593; Permit 17332	N/A	8.9
^a Gallons per day ^b Water right stated as 3.75 AF per year. ^c Three water rights each stated as 30,800 gallons per year. Source: Mammoth Community Water District					

- ❑ **Tamarack Lodge:** The District has been delivering about 7.8 AF per year to Tamarack Lodge, located on Twin Lakes, for the Lodge's year-round commercial use, under a 1990 agreement. The District began deliveries in response to concerns about treatment of the Lodge's Twin Lakes water supply. Under the terms of the Agreement, the surface water rights under the private party License 1227 are to be transferred to the District.
- ❑ **Sherwin Creek Campground:** This USFS campground began receiving District water in 1973 pursuant to an agreement with the USFS. Responsibility for delivering potable

water to this area was transferred from the USFS to the District, in part due to increased water treatment requirements. Water use has averaged about 0.2 AF per year in recent years, and no additional use of water over and above historical use is expected. Under the agreement with the USFS, the District relied on a USFS claim of water right for its supply of water to the Sherwin Creek Campground.

- ❑ **YMCA of Metropolitan Los Angeles:** The District has been serving treated water to this summer camp since 2002 with deliveries averaging 1.2 AF per year. Connection was requested into the District's system due concerns with water treatment the original spring supply.
- ❑ **Sierra Meadows/USFS Pack Offices:** Sierra Meadows and the USFS Pack Station began receiving District water in 1973 pursuant to an agreement with the USFS. Responsibility for delivering potable water to these uses was transferred from the USFS to the District, in part due to increased water treatment requirements. Water use has averaged about 1.2 AF annually in recent years, and no additional use of water over and above historical use is expected. Under the agreement with the USFS, the District relied on a USFS claim of water right for its supply of water to Sierra Meadows/USFS Pack Offices.
- ❑ **Mammoth Creek Park:** The District has been serving water to Mammoth Creek Park, a municipal park, since 1973 under the same agreement with the USFS as described above. The western portion of the park is owned by the Town of Mammoth Lakes, and located within the District's current POU. However, the less developed areas to the east of Old Mammoth Road are on leased USFS land, and are outside the current POU. Historical water use has averaged about 7.0 AF per year total for both areas. No additional use of water beyond historical use is expected, and the USFS no longer holds the water right previously used for Mammoth Creek Park.
- ❑ **Shady Rest Park:** The District has been serving treated water to Shady Rest Park, a municipal park, since 1973 under the same agreement described above. The park is operated under a special use permit by the Town of Mammoth Lakes, and located on USFS land. Recently, water use at Shady Rest Park has averaged about 8.9 AF per year. No additional use of water beyond historical use is expected. Under the agreement with the USFS, the District relied on a USFS claim of water right for its supply of water to Shady Rest Park. The park has also been identified as one of the three primary users of recycled water in the future.

2.1.1.4 REVISE CERTAIN WATERSHED OPERATION CONSTRAINTS

The third component of the Proposed Project Alternative concerns proposed changes to various WOCs included in the District's Permit 17332. The WOCs are found in District Resolution No. 02-14-78-02, which is incorporated into the permit by reference pursuant to Term 18. These proposed changes are in addition to the proposed changes to the fishery bypass flow requirements.

The reasons for the proposed changes include that the District lacks the practical ability to implement the constraints in question (such as those pertaining to Lake Mamie and Twin Lakes), as it has no legal authority to store water in, or regulate outflow from, those lakes. The proposed changes to the WOCs include the following.

COMPLIANCE MONITORING AND REPORTING

Permit 17332 specifies that the District will install and maintain streamflow measurement devices and record (if met approval) weekly (if interim) measures of natural flows entering Lake Mary. Data from these flow measurements are to be submitted quarterly (if gages approved) monthly (if still interim) to several entities. Interim sites for measurement are described as Mammoth Creek, Coldwater Creek and George Creek. The Proposed Project Alternative would make the following changes to these requirements: (1) make the interim sites permanent and add the existing gage at Coldwater Creek Diversion; (2) change the daily monitoring requirements to weekly between November 2 to March 31 at the Lake Mary gaging stations; (3) remove the requirement to measure daily flows in Bodle Ditch at Mammoth Creek (upstream of Lake Mary) and at the Old Department of Water and Power (DWP) weir (see **Figure 2-1**); and (4) commit to submitting quarterly monitoring reports to the SWRCB Chief of the Divisions of Water Rights and CDFG.

The District proposes to improve the accuracy and reliability of the existing flow monitoring equipment by maintaining a SCADA system at the OMR Gage to remotely monitor and provide real-time information regarding Mammoth Creek streamflow conditions. Implementation of the SCADA system would allow for the timely measurement and monitoring of Mammoth Creek flows. Additionally, the Mammoth Creek daily flow records at the OMR and OLD395 gages (using LADWP SCADA information) would be posted to the District's website on a regular basis.

REMOVE WATERBODIES IN WHICH MAMMOTH COMMUNITY WATER DISTRICT HAS NO RIGHTS TO STORE WATER OR REGULATE OUTFLOW

Another of the proposed WOC changes involves management of lake levels in Lake George, Lake Mamie, and Twin Lakes. The District does not have water rights nor has it ever sought water rights to store water in any of these lakes; therefore, the District has no authority to implement any of the associated constraints and is proposing that they be deleted from Permit 17332.

The USFS has applied to the SWRCB to permit the installation of the existing two dams and USFS's long-standing practice of storage of water in Lake Mamie (Application 31365) and Twin Lakes (Application 31366). The USFS has agreed to be responsible for the management constraints that are identified for each of these lakes in the District's Permit 17332.

CHANGE THE TIMING OF THE FILLING OF LAKE MARY IDENTIFIED IN PERMIT 17332

Another proposed change to the WOCs involves changing the timing of the filling of Lake Mary. The WOCs require Lake Mary to be full prior to June 1. Permit 17332 authorizes the diversion of Mammoth Creek flows to storage in Lake Mary of 606 AF from April 1 to June 30. The District seeks to change the WOC to be consistent with its authorized storage season, by changing the date to June 30.

This proposed change is intended to address the variation in the timing of snowmelt runoff among years and, consequently, the timing of filling of Lake Mary. No changes to maximum lake level, or maximum drawdown of Lake Mary water surface elevations (WSELs) are proposed.

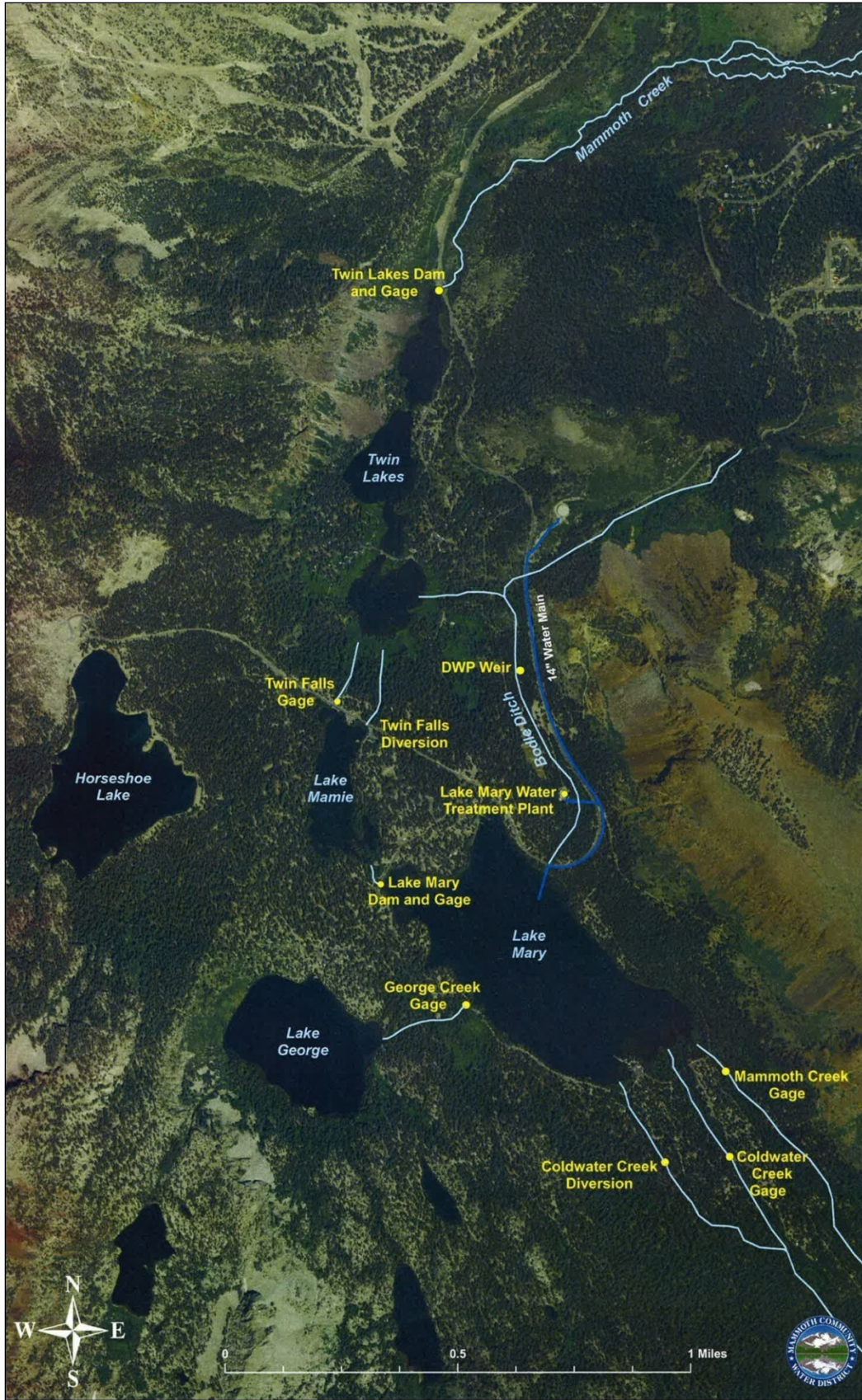


Figure 2-1. Flow Measurement Locations in the Mammoth Lakes Basin

CHANGE THE MEASURING POINT FOR FLOW REQUIREMENTS FOR MAMMOTH CREEK BETWEEN LAKE MARY AND LAKE MAMIE

The WOCs require the District to maintain a minimum stream flow of 1.5 cfs in the stream portion between Lake Mary and Lake Mamie, from June 1 to November 1. The District proposes that the measuring point for this requirement be at the Lake Mamie outlet (Twin Falls Gage), with accounting for the additional outflow from Lake Mamie through the separate USFS Twin Falls Diversion located near the Lake Mamie outlet. The upstream flow between the Lake Mary outlet and backwater of Lake Mamie would be measured as the sum of the Twin Falls Gage and the USFS diversion. The 1.5 cfs value would be revised to the lesser of either 1.5 cfs, or the natural inflow to Lake Mary.

The Twin Falls Gage is being proposed as a point of measurement for the stream flow between Lake Mary and Lake Mamie because it is the closest and most accurate gage along this portion of Mammoth Creek. Lake Mamie, between Lake Mary and the Twin Falls Gage, is maintained at a constant full level so that stream flows passing through Lake Mamie are not affected by any storage activities, nor are there tributaries to Mammoth Creek between the outlet of Lake Mary and the Twin Falls Gage. The Twin Falls Gage is also the only gaging station in the Mammoth Lakes Basin that remains naturally free of ice during winter months. At only 2,300 ft downstream from the Lake Mary outlet, the Twin Falls Gage provides data that are representative of the stream flow for that area. Data collected by the District demonstrates that the Twin Falls Gage provides accurate, reliable and accessible flow measurements for this portion of Mammoth Creek.

The USFS Twin Falls Diversion does not currently have a flow measuring device; however, the USFS is responsible for having an accurate flow measuring device in place to account for this diversion and comply with SWRCB requirements. Once in place, the USFS diversion flow will be used to calculate the total streamflow between Lake Mary and Lake Mamie.

The stream outlet structure at Lake Mary may appear to be the most appropriate gaging location; however, this gage did not provide accurate measurements when the lake was drawn down to approximately -3.7 ft below full (full = elev. 9,812.7 ft msl). This structure was originally designed and constructed to retain water in Lake Mary and to control the release of that water from the lake; it was not intended to function as a flow measuring device. The District has made modifications to the original structure and it can now accurately measure seasonal flows at various lake levels with the exception of lake levels below 9,809.0 ft msl. In addition, during winter, the gage at the outlet of Lake Mary is subject to erroneous flow measurements due to low lake levels and is difficult to access when it is subject to heavy snow drifts and thick ice on the lake surface. Significant modifications to the structure or the downstream streambed would be required to improve winter access and data collection at the Lake Mary outlet gage.

REMOVE MINIMUM FLOW REQUIREMENTS AT TWIN LAKES WATERFALL

The WOCs include provisions regarding maintenance of minimum flow requirements at the Twin Lakes waterfall and the ability to reduce nighttime flows during drought periods. However, the District has no authority to store water in or regulate flow from Lake Mamie. Therefore, the District proposes removal of this management constraint.

CHANGE THE FLOW REQUIREMENTS IN MAMMOTH CREEK FROM TWIN LAKES TO VALENTINE BOTANICAL AREA

The District is currently required to maintain a minimum outflow from Twin Lakes of 3 cfs year-round. The proposed change is to add a provision that the District will cease direct diversions and diversions to storage when the outflow from Twin Lakes is less than 3 cfs.

REMOVE FLOW REQUIREMENTS FOR BODLE DITCH

The WOCs state that the District is required to provide 1.5 cfs from the start of spring runoff to July 15 to Bodle Ditch from Mammoth Creek upstream of Lake Mary to the Lake Mary outlet. The managed flow from Mammoth Creek ceased in the late 1970s following an environmental analysis conducted by the USFS (1977) on the District's Water Management Plan. Removal of this WOC would update the management requirements contained in Permit 17332.

The WOCs also contain a provision to divert water from the District's intake at Lake Mary to Bodle Ditch during the May 1 to November 1 period, as measured at the Old DWP weir. The Bodle Ditch minimum daily flow requirements are 2.5 cfs from May 1 through June 30, 1.5 cfs from July 1 through July 31, 1.0 cfs from August 1 through August 15, 0.5 cfs from August 16 through September 15, and 0.3 cfs between September 16 and November 1. These flows were intended to meet downstream water user needs at the USFS Sierra Meadows pack station (such as livestock watering) and the Mill City Tract cabins water supply. Both of these beneficial uses have ceased, and there is no longer any party responsible for control or monitoring of the flows occurring in the ditch below the District's inlet point.

Flows in Bodle Ditch are supplemented by seeps, springs and natural accretion along the Bodle Ditch channel. During periods of lowered Lake Mary storage levels, the District does not have an ability to divert sufficient flow from the District's intake pipeline into the Bodle Ditch to meet the current requirements. The District proposes to eliminate its managed flow discharge requirements for Bodle Ditch, as there are no longer any permitted users for the ditch flows. Water from natural sources (e.g., snowmelt, precipitation and springs) will continue to collect and flow in the ditch.

Riparian and wetland vegetation, including a number of obligate and facultative hydrophytic plant species, have established themselves along the banks of Bodle Ditch and surrounding areas since it was constructed in the late 1880s to supply water to mining camps that existed in the area. The riparian and wetland vegetation along the ditch is supported by rain, snowmelt runoff, input from several seeps and springs along its length, natural accretion, and by the direct diversion of water from Lake Mary into the ditch between May 1 and November 1, although the specific amount and timing of water released is dependent on the availability of water in Lake Mary. It is not known what percentage of water flow in the ditch annually comes from "natural" sources and what percentage comes from Lake Mary. In addition, determining the amounts, by source, of water flowing into Bodle Ditch, and its relationship to the health of hydrophytic plant species, would require several years of data and installation of additional gages, where the data ultimately collected could be difficult to interpret given seasonal variations and other factors. As further described in Chapter 7 - Wildlife and Botanical Resources, while it is suspected that the riparian vegetation and habitat found along Bodle Ditch appears to be supported primarily by inputs other than the diversions from Lake Mary, the potential for impacts associated with the Proposed Project Alternative's cessation of direct diversions from Lake Mary into Bodle Ditch cannot be accurately determined based on available information. Due to this uncertainty, a Riparian and Wetland Monitoring and

Adaptive Management Program (RWMAMP) is proposed as part of the Proposed Project Alternative.

The RWMAMP is designed with a performance standard of preventing any significant net loss of riparian and wetland vegetation and habitats along Bodle Ditch due to the proposed cessation of direct diversions from Lake Mary into Bodle Ditch. The District, as lead agency for the Proposed Project Alternative, will be the entity responsible for ensuring the RWMAMP is implemented and annual reports are prepared. In addition, the need for mitigation and how the mitigation will be carried out will be documented. CDFG, USFS and other agencies, as appropriate, will be provided copies of the annual reports and related documentation concerning mitigation measures for their review and comment. For a full description of the RWMAMP, see Chapter 7 - Wildlife and Botanical Resources.

BYPASS FLOW REQUIREMENTS TAKE PRECEDENCE OVER OTHER REQUIREMENTS AND WATER USES

The District proposes to add a new term to Permit 17332 and Licenses 5715 and 12593 that is consistent with Preliminary Cease and Desist Order No. 9P.2, as follows:

“In the event that the flows in Mammoth Creek and its tributaries are insufficient to meet the fishery bypass flow requirements, the municipal supply needs of the District, and the Lake Mary minimum lake level requirements, the District shall fully comply with the bypass flow requirements for protection of fish before diverting any water to either meet the municipal demands of the District or to comply with the minimum lake level requirements.”

ADDITIONAL CHANGES TO WATERSHED OPERATION CONSTRAINTS IN TERM 18 OF PERMIT 17332

- ❑ Remove the management constraint stating “*Reserve sufficient water in Mammoth Lakes Basin and Mammoth Creek to meet consumptive needs for National Forest purposes.*” This constraint is no longer needed, as the long-term water supply needs for USFS managed facilities in the basin have been identified and met through the various agreements listed earlier.
- ❑ Remove the management constraint stating “*Permanent measurable and controllable diversion works to be installed at the Bodle Ditch diversions from Mammoth Creek.*” This constraint is no longer needed, with the cessation of diversions from Lake Mary into the Bodle Ditch.
- ❑ Remove the management constraint stating “*Management constraints will be re-evaluated by all concerned agencies 5 years after full implementation of Water Management Plan.*” This constraint is no longer needed, as the necessary management constraints for the respective water rights permits and licenses held by the District and USFS will be incorporated in the updated permits and licenses upon approval by the SWRCB.
- ❑ Remove the management constraint stating “*Prior to the occupancy of National Forest lands for purposes related to implementation of the Water Management Plan and project proponent (MCWD) shall obtain a Special Use Permit which shall authorize said land occupancy, subject to all conditions deemed necessary by the Forest Service such as the advanced written approval of all development plans, layout plans, location, construction, reconstruction or alteration of improvements, and payment of land use occupancy fees.*” This constraint is no longer needed,

and is redundant under the permitting requirements which the District already operates under for all facilities located on USFS land.

- Remove the management constraint stating *“Because mean water yields from the Lakes Basin appear to be sufficient to supply MCWD’s request for additional water from the Basin only if the water can be stored during the runoff period, and because storage is critical to full implementation of MCWD’s Water Management Plan, consistent with their attempt to reduce pumping costs, future proposals by MCWD for additional storage on Lake Mary or at Horseshoe Lake shall be given consideration by the Forest Service.”* This constraint is no longer needed, as the District has not, and does not anticipate, seeking these storage rights.

DELETE TERM 21 OF PERMIT 17332 REGARDING REEVALUATION OF MANAGEMENT CONSTRAINTS

Permit 17332 states that the District shall reevaluate management constraints within five years of the date of permit issuance and prior to the issuance of a license. The District proposes to delete Term 21 of Permit 17332.

AMEND TERM 23 OF PERMIT 17332

Term 23 of Permit 17332 specifies the fishery bypass flow requirements in Mammoth Creek. As previously discussed, the District proposes to change the fishery bypass flow requirements.

DELETE TERMS 24 AND 25 OF PERMIT 17332

Terms 24 and 25 of Permit 17332 specify the installation and maintenance of gages measuring the natural flow entering Lake Mary, monitoring at LADWP’s OLD395 Gage, and reporting requirements. The District’s proposed changes to these terms are specified above under Compliance Monitoring and Reporting. Hence, the District proposes to delete Terms 24 and 25 of Permit 17332.

If the aforementioned proposed changes to Permit 17332 are approved by the SWRCB, then the same changes would be applied to the District’s water right Licenses 5715 and 12593.

2.1.2 BYPASS FLOW REQUIREMENTS ALTERNATIVE NO. 2

The Bypass Flow Requirements Alternative No. 2 (BFR Alt 2) includes the following fishery bypass flow requirements. Under BFR Alt 2, the measurement point for compliance would remain at the OMR Gage.

<u>Month</u>	<u>Mean Daily Flow (cfs) at the OMR Gage</u>
January	7.5
February	6.9
March	7.8
April	9.8
May	18.7
June	20.8
July	9.9
August	7.2
September	6.8
October	6.6
November	7.4
December	7.4

The fishery bypass flow requirements also would include a year-round bypass flow requirement of 4 cfs (mean daily flow) at the OLD395 Gage.

Changes to the points of measurement, changes to the WOCs and changes to incorporate new areas into the District's existing authorized POU, as described in the Proposed Project Alternative, also would occur. Permit 17332 and Licenses 5715 and 12593 would be amended accordingly.

2.1.3 PERMIT 17332 BYPASS FLOW REQUIREMENTS ALTERNATIVE

The Permit 17332 Bypass Flow Requirements Alternative (P-17332 BFR Alt) includes the following fishery bypass flow requirements at the OLD395 Gage.

<u>Month</u>	<u>Mean Daily Flow (cfs) at the OLD395 Gage</u>
January	5.0
February	5.0
March	5.0
April	10.0
May	25.0
June	40.0
July	25.0
August	10.0
September	6.0
October	6.0
November	6.0
December	6.0

The fishery bypass flow requirements also include a year-round bypass flow requirement of 4 cfs (mean daily flow) at the OLD395 Gage.

Other than the fishery bypass flow requirements specifying the OLD395 Gage as the point of measurement and compliance, the changes to the WOCs and changes to incorporate new areas into the District's existing authorized POU, as described in the Proposed Project Alternative, also would occur. Permit 17332 and Licenses 5715 and 12593 would be amended accordingly.

2.1.4 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the fishery bypass flow requirements and point of measurement would continue in accordance with the requirements specified in 1997 C&D No. 9P.2, as required by the Mono County Superior Court.

The District's POU would not be expanded beyond its current boundaries. The No Project Alternative would require the District to discontinue service to the 10 public and private customers listed under the proposed change in POU, except with respect to those places covered by the existing agreement between the District and the USFS, assuming the latter still maintains the water rights to support deliveries under the agreement. Under the No Project Alternative, some of these customers may not be able to meet their current water demand based upon their existing water rights. These water users would have to find alternative supplies to meet demand or constrain their operations. As described in Chapter 1 - Introduction, these District customers would also be subject to DDWEM requirements to provide water that complies with California drinking water regulations.

There would be no changes to the WOCs.

The CEQA Guidelines state that the lead agency should analyze the impacts of the No Project Alternative by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services (CEQA Guidelines §15126.6(e)(3)(C)). Therefore, the No Project Alternative in this Draft EIR is analyzed at the existing level of development (i.e., current utilization of permitted surface water supplies) and at a future level of development (i.e., projected utilization of permitted surface water supplies at maximum buildout in 2025, as identified in the Town of Mammoth Lakes 2007 General Plan Update) to address conditions that would reasonably be expected to occur in the foreseeable future under this alternative.

2.1.5 SUMMARY COMPARISON OF ALTERNATIVES

A summary comparison of the operational differences associated with each of the alternatives that are carried forward for detailed evaluation in this Draft EIR, as well as the Existing Condition, is presented in **Table 2-2**.

2.2 DEVELOPMENT OF ALTERNATIVES CARRIED FORWARD FOR DETAILED EVALUATION

Potential alternatives were considered in two forums. First, the collaborative process, described in Section 1.3.12, developed alternatives that resulted in the Proposed Project Alternative and two other variations described below. Second, a wide variety of alternatives were suggested for consideration during the public scoping process for this Draft EIR.

2.2.1 TECHNICAL COLLABORATION PROCESS

The collaboration process, which commenced in 2004, identified three different fishery bypass flow requirement regimes, referred to as Collaborative Alternative No. 1 (which is the Proposed Project Alternative), Collaborative Alternative No. 2, and Collaborative Alternative No. 3. Collaborative Alternative No. 3 was a combination of: (1) OMR fishery bypass flow requirements equal to Collaborative Alternative No. 1 from November through August; and (2) OMR fishery bypass flow requirements equal to Collaborative Alternative No. 2 during September and October. Thus, the fishery bypass flow requirements associated with Collaborative Alternative No. 3 were intermediate between Collaborative Alternative No. 1 and Collaborative Alternative No. 2. As with Collaborative Alternatives Nos. 1 and 2, Collaborative Alternative No. 3 also includes a mean daily 4 cfs requirement at the OLD395 Gage.

All three of the collaborative alternatives were developed to protect fish in all water year types, including Dry runoff years when the District's diversions could have their greatest influence. During wetter years, and during periods of snowmelt runoff in Dry years, flows in Mammoth Creek oftentimes will be substantially higher than the proposed fishery bypass flow requirements, regardless of the District's operation.

Table 2-2. Summary Comparison of Operational Differences Associated with the Alternatives Considered in the Mammoth Creek Draft EIR, Compared to the Existing Condition

	CEQA Existing Condition	No Project Alternative	Proposed Project Alternative	Bypass Flow Requirements Alternative No. 2	Permit 17332 Bypass Flow Requirements Alternative																																																																																																								
Level of Demand																																																																																																													
	Existing (April 1988-March 2008)	(See Footnotes ^{1,2})	Existing (April 1988-March 2008)	Existing (April 1988-March 2008)	Existing (April 1988-March 2008)																																																																																																								
Minimum Fishery Bypass Flow Requirements																																																																																																													
OMR Gage Bypass Flow Requirements	Mono County Superior Court C&D Order No. 9P.2	Mono County Superior Court Preliminary C&D Order No. 9P.2	Mono County Superior Court Preliminary C&D Order No. 9P.2		N/A																																																																																																								
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OLD395 Gage Bypass Flow Requirement	N/A	N/A	4 cfs year-round (Mean Daily Flows)	4 cfs year-round (Mean Daily Flows)	<table border="1"> <thead> <tr> <th>Month</th> <th>Flow (cfs)</th> </tr> </thead> <tbody> <tr><td>Jan</td><td>5.0</td></tr> <tr><td>Feb</td><td>5.0</td></tr> <tr><td>Mar</td><td>5.0</td></tr> <tr><td>Apr</td><td>10.0</td></tr> <tr><td>May</td><td>25.0</td></tr> <tr><td>Jun</td><td>40.0</td></tr> <tr><td>Jul</td><td>25.0</td></tr> <tr><td>Aug</td><td>10.0</td></tr> <tr><td>Sep</td><td>6.0</td></tr> <tr><td>Oct</td><td>6.0</td></tr> <tr><td>Nov</td><td>6.0</td></tr> <tr><td>Dec</td><td>6.0</td></tr> </tbody> </table>	Month	Flow (cfs)	Jan	5.0	Feb	5.0	Mar	5.0	Apr	10.0	May	25.0	Jun	40.0	Jul	25.0	Aug	10.0	Sep	6.0	Oct	6.0	Nov	6.0	Dec	6.0																																																																														
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	CEQA Existing Condition	No Project Alternative	Proposed Project Alternative	Bypass Flow Requirements Alternative No. 2	Permit 17332 Bypass Flow Requirements Alternative
Watershed Operation Constraints					
Minimum Daily Flow (cfs) Requirements in Bodle Ditch (Water Diverted via Lake Mary Outlet)	Historical (April 1988-March 2008)	May 1 - Jun 30 2.5 Jul 1 - Jul 31 1.5 Aug 1 - Aug 15 1.0 Aug 16 - Sep 15 0.5 Sep 16 - Oct 31 0.3	N/A	N/A	N/A
<u>Lake Mary Operations</u> Fill Date ⁴ Maximum Drawdown prior to Sep 15 ⁵ Maximum Drawdown Year-round ⁶ Maximum Lake Level ⁷ Maximum Diversion to Storage (AF) Apr 1 – Jun 30 Sep 1 – Sep 30 Maximum Diversion Rate (cfs) May 1 – Oct 31 Nov 1 – Apr 30 Maximum Annual Diversion (AF)	By June 1 3.0 ft 5.7 ft 8,912.7 ft msl 606 54 5.039 5.0 2,760	By June 1 3.0 ft 5.7 ft 8,912.7 ft msl 606 54 5.039 5.0 2,760	By July 1 3.0 ft 5.7 ft 8,912.7 ft msl 606 54 5.039 5.0 2,760	By July 1 3.0 ft 5.7 ft 8,912.7 ft msl 606 54 5.039 5.0 2,760	By July 1 3.0 ft 5.7 ft 8,912.7 ft msl 606 54 5.039 5.0 2,760
Minimum Mammoth Creek Flow Requirements (cfs) from Lake Mamie ⁸	1.5 Jun 1 – Oct 31	1.5 Jun 1 – Oct 31	1.5 Jun 1 – Oct 31	1.5 Jun 1 – Oct 31	1.5 Jun 1 – Oct 31
Twin Lakes Waterfall Minimum Flow Requirements (cfs)	Jun 1 - Aug 10 3.0 Aug 11 - Oct 31 2.0	Jun 1 - Aug 10 3.0 Aug 11 - Oct 31 2.0	N/A	N/A	N/A
Flow Requirements (cfs) in Mammoth Creek from Twin Lakes ⁹	3.0 year-round	3.0 year-round	3.0 year-round	3.0 year-round	3.0 year-round
<p>¹ For modeling purposes, the existing level of demand (April 1988-March 2008) under the No Project Alternative is equivalent to the Existing Condition.</p> <p>² For modeling purposes, the future level of demand (2025) under the No Project Alternative is based on the maximum buildout projection identified in the Town of Mammoth Lakes 2007 General Plan Update.</p> <p>³ Permit 17332 specifies minimum mean monthly fishery bypass flow requirements. Also, Permit 17332 specifies a minimum daily bypass flow requirement of 4 cfs year-round. For modeling characterization, the stated monthly minimum bypass flow requirements are applied on a mean daily basis.</p> <p>⁴ District Board Resolution 02-14-78-02, incorporated into Permit 17332, requires Lake Mary to be full by June 1 of each year. For modeling characterization, full is defined as a level equal to the top of the existing radial arm gates when closed at elevation 8912.7 ft msl.</p> <p>⁵ District Board Resolution 02-14-78-02, incorporated into Permit 17332, requires that Lake Mary drawdown is not to exceed 3 ft prior to September 15. For modeling characterization, drawdown is defined from the top of existing radial arm gates, and the 3 ft maximum drawdown requirement applies between June 1 and September 15 of each year. For modeling characterization, a 3 ft drawdown equates to 8,909.7 ft above sea level, which equates to 2,935 AF of storage in Lake Mary.</p> <p>⁶ For modeling characterization, drawdown is defined from the top of existing radial arm gates, and the 5.7 ft maximum drawdown requirement applies year-round. For modeling characterization, a 5.7 ft drawdown equates to 8,907.0 ft above sea level, which equates to 2,654 AF of storage in Lake Mary.</p> <p>⁷ District Board Resolution 02-14-78-02, incorporated into Permit 17332, states that the maximum lake level limitation is in accordance with the existing cooperative agreement. The Master Operating Agreement between the District and the USFS states that the water level shall under normal circumstances not exceed 8,912.7 ft above sea level. For modeling characterization, 8,912.7 ft above sea level equates to 3,260 AF of storage in Lake Mary.</p> <p>⁸ For modeling characterization, the minimum streamflow requirement of 1.5 cfs from June 1 – November 1, or natural flows entering Lake Mary (whichever is less) is defined as mean daily flow, represented as a combined flow from the Lake Mamie outlet (Twin Falls Gage) and the U.S. Forest Service Twin Falls Diversion.</p> <p>⁹ For modeling characterization, the minimum streamflow requirement of 3.0 cfs year-round is subject to natural flows entering Lake Mary. If the natural flows entering Lake Mary are less than 3 cfs, then the District will cease direct diversions from Lake Mary, and diversions to Lake Mary storage.</p>					

The collaboration team evaluations built upon the instream flow studies previously conducted (Bratovich et al. 1990, 1991). In these previous studies, application of the PHABSIM program of the IFIM resulted in a single, functional relationship between total habitat, expressed as weighted usable area (WUA), and flow for each lifestage of brown and rainbow trout by month in Mammoth Creek. Assessments of water availability were utilized to generate an integrated, two-species habitat availability probability function for various month/hydrologic condition strata (Bratovich et al. 1991).

Recently, as part of the collaboration process to identify potential alternatives for the District to consider in this Draft EIR, the WUA-flow relationships were re-examined. This re-examination included two major additions to the methodology employed in the development of the Beak Fishery Bypass Flow Requirements. First, based upon CalTrout's consultants suggestion that the adult lifestage of brown trout is the most limited in terms of habitat availability, and that adult brown trout exhibit a strong preference for deep water habitats, the collaboration process focused only on adult brown trout habitat availability. Consequently, WUA-flow relationships for adult brown trout habitat represented by pools in Mammoth Creek were re-examined. Based on CalTrout's consultants examination of WUA-flow relationships for all transects representing pool habitats, a set of transects was selected for use in the identification of alternative fishery bypass flow requirements. Second, updated hydrology for Mammoth Creek was used in the collaboration process. The hydrologic basis for the development and examination of alternative fishery bypass flow requirements used historic monitoring data at the OMR and OLD395 gages from April 1, 1988 through March 31, 2008 (runoff years 1988 through 2007) and the recently developed MCWD Water Balance Operations Model (MCWD Model), rather than synthesized data from 1969 through 1981 and actual data from 1982 through 1991 for the OMR Gage relied upon in Bratovich et al. (1991).

For runoff years 1988 - 2007, updated accretions/depletions were used to modify monthly flow weighting factors by runoff year type (Dry, Normal, Wet), rather than the 1982 - 1991 average of monthly flow gains/losses irrespective of hydrologic condition (Bratovich et al. 1991). This approach was undertaken to account for the amount of flow gains/losses at specific locations along the length of Mammoth Creek, and to obtain an estimation of location-specific habitat availability. This approach is consistent with the 1988 - 2007 evaluation and simulation period, reflects the most recent, updated hydrology, and is runoff year type-specific, by month.

For runoff years 1988 - 2007, modified adult brown trout pool habitat (WUA)-discharge relationships for each PHABSIM transect were developed using the modified flow weighting factors by runoff year type (Dry, Normal, Wet). Then, for Dry runoff years, monthly composite WUA-discharge relationships were generated, monthly maximum WUA values were identified, and 90% of maximum WUA values were identified. The 90% of maximum WUA value was chosen for alternative development purposes for general consistency with that which was used in the Mono Lake Basin Water Right Decision 1631 (D-1631). The instream flow requirements for Lee Vining Creek established in D-1631 for adult brown trout were based on providing 80% of maximum WUA during Dry water years and 90% of maximum WUA during Normal and Wet water year types. The instream flow requirements for Rush Creek established in D-1631 for adult brown trout were based on providing 80% of maximum WUA during Dry water years, 90% of maximum WUA during Normal water years, and 95% of maximum WUA during Wet water year types.

The next procedural steps in the development of fishery bypass flow requirement alternatives were as follows:

- ❑ Identified the monthly flows corresponding to each of the monthly 90% maximum WUA values.
- ❑ Identified the highest habitat (WUA) value obtained from each of the monthly 90% maximum WUA values (i.e., the highest WUA value of all of the monthly 90% of maximum WUA values).
- ❑ Determined what flow would be required to provide the highest WUA value of all of the monthly 90% of maximum WUA values on a year-round basis, which were referred to as “Bottleneck Avoidance Flows”.
- ❑ Pursuant to the collaboration team’s request, the analysis next identified the higher monthly flow value between the “Bottleneck Avoidance” flow values (identified in the above step) and the Collaborative Alternative No. 1 (Proposed Project Alternative) fishery bypass flow requirements. The resultant identified flows comprise the fishery bypass flow requirements for Collaborative Alternative No. 2 (see **Table 2-3**). They vary by month due to monthly differences in accretions and depletions. Similar to Collaborative Alternative No. 1 (Proposed Project Alternative), Collaborative Alternative No. 2 also included a mean daily 4 cfs requirement at the OLD395 Gage.

Table 2-3. Month-by-Month Selection of the Higher Fishery Bypass Flow Requirements Associated with Collaborative Alternative No. 2

Month	Maximum WUA (ft ²)	Flow (cfs)	90% of Maximum WUA (ft ²)		Flows (cfs) Required to Provide 23,735 ft ²	Alternative 1 Fishery Bypass Flow Requirement (cfs)	Alternative 2 Fishery Bypass Flow Requirement (cfs)
			90% of Maximum WUA (ft ²)	Flow (cfs)			
Apr	26,211	14.5	23,590	6.1	6.2	9.8	9.8
May	26,336	11.9	23,703	6.2	6.2	18.7	18.7
Jun	26,294	11.9	23,664	5.8	5.9	20.8	20.8
Jul	26,139	11.9	23,525	5.3	5.5	9.9	9.9
Aug	26,143	14.5	23,528	6.1	6.2	7.2	7.2
Sep	26,363	14.5	23,727	6.8	6.8	5.5	6.8
Oct	26,252	14.5	23,627	6.4	6.6	5.5	6.6
Nov	26,308	14.5	23,677	7.3	7.4	5.9	7.4
Dec	26,262	14.5	23,636	7.3	7.4	5.9	7.4
Jan	26,295	17.0	23,666	7.4	7.5	6.4	7.5
Feb	26,372	14.5	23,735	6.9	6.9	6.0	6.9
Mar	26,354	14.5	23,718	7.1	7.1	7.8	7.8

The MCWD Model used historic flow records at the OMR and OLD395 gages as the basis to develop simulation capabilities for the period extending from April 1, 1988 through March 31, 2008, which represents the Existing Condition for CEQA purposes. A technical memorandum describing the model is presented in **Appendix C**.

The collaboration process used the MCWD Model to generate daily flows at the OMR Gage under “unimpaired” flow conditions from April 1, 1988 through March 31, 2008. “Unimpaired” flows represent flows at the OMR Gage without District direct surface water diversion or diversion to Lake Mary storage, and without any fishery bypass flow requirements.

The collaboration process also used the MCWD Model to generate daily flows at the OMR Gage from April 1, 1988 through March 31, 2008 resulting from implementation of the collaborative alternatives. Model output was used to:

- ❑ Graphically compare OMR daily flow time series for the index of unimpaired conditions, and for the collaborative alternatives, for each runoff year from 1988 – 2007.
- ❑ Graphically compare daily adult brown trout pool habitat (WUA) time series for the index of unimpaired conditions, and for the collaborative alternatives, relative to the 90% of maximum WUA values for each runoff year from 1988 – 2007.
- ❑ Graphically compare OMR flow exceedance probabilities for the index of unimpaired conditions, and for the collaborative alternatives, for each month during runoff years 1988 – 2007.
- ❑ Graphically compare adult brown trout pool habitat (WUA) exceedance probabilities for the index of unimpaired conditions, and for the collaborative alternatives, for each month during runoff years 1988 – 2007.
- ❑ For existing levels of demand, modeled District diversions to the Lake Mary WTP under the collaborative alternatives, and the differences in District diversions under Collaborative Alternative Nos. 2 and 3, relative to Collaborative Alternative No. 1 (Proposed Project Alternative).
- ❑ For future levels of demand (maximum buildout), modeled District diversions to the Lake Mary WTP under the collaborative alternatives, and calculated the differences in District diversions under Collaborative Alternative Nos. 2 and 3, relative to Collaborative Alternative No. 1 (Proposed Project Alternative).
- ❑ For existing levels of demand, modeled the total annual amounts of adult brown trout pool habitat (WUA) provided by the collaborative alternatives, and calculated the percentage of total annual habitat provided by the collaborative alternatives relative to the index of unimpaired conditions, for runoff years 1988 – 2007.
- ❑ For future levels of demand (maximum buildout), modeled the total annual amounts of adult brown trout pool habitat (WUA) provided by the collaborative alternatives, and calculated the percentage of total annual habitat provided by the collaborative alternatives relative to the index of unimpaired conditions, for runoff years 1988 – 2007.
- ❑ For existing levels of demand and future levels of demand for runoff years 1988 - 2007, concurrently compared annual: (1) percent differences in modeled total annual amounts of adult brown trout pool habitat (WUA) under Collaborative Alternative Nos. 2 and 3, relative to Collaborative Alternative No. 1 (Proposed Project Alternative); and (2) differences in modeled District diversions to the Lake Mary WTP under Collaborative Alternative Nos. 2 and 3, relative to Collaborative Alternative No. 1 (Proposed Project Alternative).

2.2.1.1 OUTCOMES OF THE TECHNICAL COLLABORATION PROCESS

The collaboration team concluded that relatively minor differences in the amount of adult brown trout pool habitat would be expected to occur among Collaborative Alternative No. 1 (Proposed Project Alternative), 2 and 3. The results of the collaboration team analyses, based upon model output, indicated that: (1) Collaborative Alternative Nos. 2 and 3 provided less than a 1% increase in the average annual total amounts of adult brown trout pool habitat in

Mammoth Creek, relative to Collaborative Alternative No. 1 (Proposed Project Alternative); (2) during only one out of 20 runoff years, Collaborative Alternative Nos. 2 and 3 provided slightly more adult brown trout pool habitat when habitat values were below 90% of maximum WUA values during certain months, when even lower habitat values did not occur during subsequent months under the index of unimpaired conditions. However, the collaboration team also noted that at the future level of demand (maximum buildout) relative to Collaborative Alternative No. 1 (Proposed Project Alternative): (1) large individual year reductions in diversions to the Lake Mary WTP would occur under Alternative 2 (360 AF) and under Alternative 3 (106 AF); (2) average annual Dry runoff year reductions would occur under Alternative 2 (194 AF) and under Alternative 3 (71 AF); and (3) average annual Normal runoff year reductions would occur under Alternative 2 (147 AF) and under Alternative 3 (50 AF).

Therefore, the collaboration group concluded that minor differences in adult brown trout pool habitat (WUA) would occur, but severe impacts on the District's ability to divert water to the Lake Mary WTP would occur with implementation of Collaborative Alternative Nos. 2 and 3, relative to Collaborative Alternative No. 1 (Proposed Project Alternative).

Moreover, CalTrout's consultant examined the results of the annual fish population surveys, specifically regarding adult brown trout, and concluded that the adult brown trout population in Mammoth Creek was relatively stable and in "good condition". In consideration of the "good condition" status of the trout populations resulting from implementation of the fishery bypass flow requirements specified in 1997 C&D No. 9P.2, the frequency of obtaining 90% of maximum WUA for adult brown trout pool habitat, the relative ineffectiveness of further enhancement of adult brown trout pool habitat availability through flow-related actions, and the relatively severe impacts to District operations particularly under future levels of demand, the collaboration team supported Collaboration Alternative No. 1 as the Proposed Project Alternative.

While it was agreed that the adult brown trout population in Mammoth Creek is in good condition, the collaboration team also concluded that any future enhancement of adult brown trout pool habitat in Mammoth Creek would most effectively be accomplished through physical habitat enhancement actions, rather than through implementing fishery bypass flow requirements different than those included in the Collaborative Alternative No. 1 (i.e., Proposed Project Alternative).

2.2.2 PERMIT 17332 ALTERNATIVE DEVELOPMENT PROCESS

The fishery bypass flow requirements included in Permit 17332 were developed in 1977 by the USFS (Stefferd 1977). The rationale behind the flow bypass schedule identified in Permit 17332 is not specified in the permit, apart from the need to provide for certain bypass flows for fish populations that support a sport fishery (MCWD 1988).

In 1977, the USFS determined that the National Forest objectives would be met with a fishery of the size present in Mammoth Creek at that time (approximately 900 fish per mile based on an electrofishing survey conducted by CDFG in 1977), and that water in excess of that needed to support that fishery could be used for other purposes. With that objective in mind, the USFS conducted a study on Mammoth Creek designed to determine the bypass flows required to sustain the fishery. The results of this study became the recommended mean monthly fishery bypass flow regime adopted by the SWRCB in Permit 17332.

This fishery bypass flow regime was not based upon comprehensive, quantitative studies of trout habitat requirements in Mammoth Creek. Rather, it was based (presumably) upon an

assessment of the percentage of the wetted perimeter associated with changes in flows in the creek, and a qualitatively-derived flow regime. The adopted flow schedule which originated from this study appears to emulate the general pattern, but not the quantity, of natural (unimpaired) flows. The analytical basis for the USFS recommended fishery bypass flows remains unclear and has even come under question by the SWRCB staff. In a memorandum to file dated May 28, 1991, titled "Hydrologic Model of Mammoth Creek Related to Diversions by the Mammoth Community Water District", the SWRCB states that "Permit 17332 (Application 25368) contains fishery flow requirements with which the District must adhere... [and], the rationale behind these requirements is not well known." The ambiguity of the basis for the 1977 USFS flow regime schedule resulted in a decision by the District and others that an extensive and thorough investigation was necessary of the fishery bypass flow requirements for Mammoth Creek. A comparison of the study components involved in the Beak Consultants, Inc. and the USFS studies is presented in **Table 2-4**.

Table 2-4. Comparison of the Two Studies Used to Develop Recommended Minimum Fishery Bypass Flow Requirements for Mammoth Creek (Bratovich et al. 1994)

Study Component	Beak – 1988 to 1994	USFS – 1977
Modeling Procedure Used	IFG4 and PHABSIM – IFIM Methodology	Wetted perimeter
Habitat Characterization	Completed for the entire creek	None stated
Fish Resource Assessment	Used CDFG data (1983-84, 1991) and conducted comprehensive surveys – 1988, 1992 and 1993	Referred to CDFG 1977 data
Water Temperature Monitoring	Conducted to document existing water temperature conditions	None conducted, although stated that high water temperature is not a problem
Experimental Design	Modified two-stage stratified random sampling design	None stated
Flow Gage Comparisons	Quantitative determination of discharge relationships between District and LADWP gages	Qualitative discussion
Flow Regime Methodology	Used daily values to derive monthly flow regime	None stated
Flow Duration Analyses	Calculated from daily discharge levels	None stated
Characterization of Water Year Types	Based on 1969-1991 period of record	Used 1977 only
Transect Selection Criteria	Each of 36 transects represented primary habitat unit	Unstated criteria – 10 transects
Water Depth and Velocity	Measured during low (5 cfs) and high (30 cfs) flows	Measured at 2.4, 2.9, 5.4, 5.9 and 10 cfs
Substrate Classification	15 categories	5 categories
Cover	Assessed at each vertical 5 ft upstream and downstream	Qualitatively assessed using wetted channel width
Trout Optimization Analyses	Determined discharge that maximized brown and rainbow trout habitat by life stage	No analyses
Trout Habitat Duration	Conducted for brown and rainbow trout limiting life stages	No analyses
Trout Habitat Availability Integration	Based on optimization and duration analyses	No analyses
Flow Regime Development	Quantitative, based on integrated habitat availability	Qualitative, procedure not stated

2.2.3 NO PROJECT ALTERNATIVE DEVELOPMENT PROCESS

As with the other alternatives discussed above, the No Project Alternative (under both existing and future levels of demand) includes the Beak Fishery Bypass Flow Requirements, which have been in existence since 1997 pursuant to 1997 C&D 9P.2 - the court-ordered requirements identified in the 1996 Mono County Superior Court decision. The development of the Beak Fishery Bypass Flow Requirements is briefly described above, and is additionally described in Chapter 6 – Fisheries and Aquatic Resources.

2.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED EVALUATION

A wide variety of alternatives was suggested for consideration in this Draft EIR during the public scoping process. These alternatives were either determined to be infeasible or not to meet the purpose or objectives of the proposed project, and were not carried forward for detailed evaluation in this Draft EIR. These alternatives are discussed below.

2.3.1 WATER YEAR TYPE-SPECIFIC BYPASS FLOW REQUIREMENTS

During the scoping process, comments were received that requested an alternative that considered fishery bypass flow requirements for Mammoth Creek based on hydrologic conditions or water year types. In response to these comments and as described in the 2005 NOP, the potential for a Water Year Type Alternative that included three sets of daily mean bypass flow requirements based on the type of water year (i.e., Dry, Normal, or Wet) occurring in the Mammoth Lakes Basin was considered. However, as described below, this suggested alternative was determined by the District to be infeasible and unsupported because:

- ❑ It is impractical for use in real-time District operations due to variation in precipitation or runoff.
- ❑ Due to physical and operational limits on storage and diversions, the District has limited influence over flows except during dry conditions, and hydrologic variability would be maintained under a single fishery bypass flow requirement regime.
- ❑ The fish populations in Mammoth Creek are in “good condition” resulting from a single fishery bypass flow requirement regime in effect since 1997.

In assessing the fishery bypass flow needs in Mammoth Creek, Beak Consultants, Inc. chose to evaluate the PHABSIM output within the context of flow availability in an objective, quantified fashion that also is provided for within the context of the IFIM methodology. This was done with the recognition that flows in the creek vary by hydrologic condition and that a range of flows are necessary to generate the physical and biological processes that maintain the viability of the aquatic community, and fish in good condition. In Bratovich et al. (1990), three fishery bypass flow regimes were identified based on a habitat duration analysis for different hydrologic conditions (i.e., dry, normal, wet). However, this analysis was based solely on historic flow availability and the PHABSIM output, and did not consider the District’s physical or operational limitations on storage or diversion.

These fishery bypass flow regimes were not evaluated for their appropriateness as legal operational requirements. Indeed, by methodological definition, the three flow regimes generally identify median occurrences, and therefore would not be met about one-half of the time for each of the hydrologic conditions (dry, normal, wet). Thus, these three flow regimes are

not suitable for use as operational bypass flow requirements by the District. The subsequent Beak Fishery Bypass Flow Requirements identified a single fishery bypass flow requirement regime.

The concept of “water year type” for the Mammoth Creek Basin is appropriately represented by runoff year type. Runoff year type is determined by a precipitation indicator (e.g., snowpack water content at Mammoth Pass). Runoff year type designations are made on April 1 of each year. Consequently, a multiple “water year type” alternative would necessarily be fashioned by April 1 runoff year type designations and corresponding fishery bypass flow requirements throughout the remainder of the year (April 1 through March 30). However, such an application is impractical for use in real-time District operations due to variation in precipitation or runoff during months subsequent to April of the runoff year.

As evident in the results presented in Chapter 4 - Hydrology, a substantial amount of variation in flows in Mammoth Creek occurs that are not necessarily consistent with an April 1 runoff year designation during subsequent months. Substantial variations occur in flows for a given month within the same runoff year type, and among days within a given month. For example, oftentimes a Normal (or Wet) runoff year designation on April 1 is subsequently followed by flows in Mammoth Creek characteristic of “drier” conditions due to variations in the amount and timing of precipitation, and subsequent runoff or accretions/depletions. Such considerations support why a multiple “water year type” alternative is not suitable for District use as operational bypass flow requirements.

Storage and diversion capacity play important roles in determining appropriate fishery bypass flow requirements. On streams with large storage reservoirs and with substantial diversion capability, storage and diversion operations can significantly modify the flow conditions and alter the character of the stream. Under these circumstances, the recommendation of a single flow regime is usually not appropriate because the operational capability allows for flows to be restricted to the required bypass flows year after year, without providing important flow variability.

The District is both physically restricted, and restricted by Permit 17332 to storage rights of a total of 660 AF annually, of which 606 AF can be collected from April 1 to June 30 and 54 AF may be collected between September 1 and September 30 of each year. Moreover, the total quantity of water that may be diverted under the District’s surface water appropriative rights (Permit 17332 and Licenses 5715 and 12593) shall not exceed 2,760 AF per year. The District’s water rights restrict the maximum instantaneous diversion to 5.0 cfs from November 1 through April 30, and to 5.039 cfs from May 1 through October 31. In consideration of the District’s physical and operational limits on storage and diversions, the District has limited influence over flows except during low flow periods, particularly in Dry years. When the required fishery bypass flows are not being met, the District is required to bypass 100% of the natural flows entering Lake Mary. Consequently, flows in Mammoth Creek would not be restricted to the proposed fishery bypass flow requirements, but would be dynamic and vary in response to hydrologic conditions.

The proposed project, therefore, would set fishery bypass flow requirements, not introduce minimum streamflow requirements, which are typically associated with dam releases. Furthermore, the District, by virtue of its limited diversions, is incapable of reducing flows on a continual basis to the levels specified in the Proposed Project Alternative’s fishery bypass flow requirements. In this situation, a single fishery bypass flow requirement regime is appropriate.

Moreover, as described in Section 2.2.1 and thoroughly described in Chapter 6 – Fisheries and Aquatic Resources, the fish populations in Mammoth Creek are in “good condition”. In addition, CalTrout’s consultant examination of the results of the annual fish population surveys concluded that the adult brown trout population in Mammoth Creek was relatively stable and in “good condition”. In consideration of the “good condition” status (pursuant to Fish and Game Code Sections 5937 and 5946) of the trout populations resulting from implementation of the fishery bypass flow requirements specified in 1997 C&D No. 9P.2, this alternative would not avoid or substantially lessen potential impacts of the Proposed Project Alternative.

As previously discussed, CEQA indicates that an EIR must describe and evaluate a reasonable range of alternatives for a proposed project that: (1) could feasibly attain most of the basic project objectives; and (2) would avoid or substantially lessen the potential significant environmental impacts of the proposed project. Feasibility is defined in the CEQA Guidelines as an alternative “*capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, legal, social and technological factors*” (Section 15364). Due to the aforementioned issues surrounding the feasibility of a multiple water year type fishery bypass flow requirement regime, and a lack of a need to “substantially lessen the potential significant environmental impacts of the proposed project”, a single flow regime that ensures protection of the fishery during periods when the District can most influence flows (i.e., dry years) was included in the EIR alternatives development process, rather than a multiple water year type flow regime.

2.3.2 WATER CONSERVATION OR OUT OF BASIN WATER SUPPLY DEVELOPMENT IN LIEU OF MAMMOTH CREEK DIVERSIONS

Under this suggested alternative, the District would implement more restrictive water conservation measures during Dry year periods or develop new water supplies out of the Mammoth Lakes Basin, thereby reducing its surface water supply requirements. These suggested alternatives do not meet the proposed project’s purpose and objectives. As described above, purposes of the proposed project include the establishment of long-term fishery bypass flow requirements (to maintain the fish populations in Mammoth Creek in “good condition”) and updating the WOCs. Water conservation practices are being implemented by the District as a separate effort. Successful completion of the environmental process to import water from outside the Mammoth Lakes Basin is uncertain and potentially cost prohibitive; therefore, this alternative cannot be considered feasible. For additional information regarding other District activities regarding water conservation, which are not part of this proposed project, see Section 1.5.2.2 and Appendix B.

2.3.3 BYPASS FLOW REQUIREMENTS THAT RESEMBLE HISTORICAL NATURAL FLOWS

During the scoping process, the suggestion was made that an alternative be developed whereby the fishery bypass flow requirements resemble historical natural flows. The alternatives developed and carried forward actually result in flows in Mammoth Creek that generally mimic the pattern of unimpaired hydrology. This is explained and evaluated in Chapter 4 – Hydrology.

2.3.4 PURCHASE OF IRRIGATION LEASES TO MEET DEMANDS AND/OR MITIGATE IMPACTS

A suggestion was made that the District purchase irrigation leases to meet its water supply demands. The apparent assumption behind this suggestion is that buying irrigation leases would reduce the total diversions from Mammoth Creek. However, because the District does not have the ability to store and manage the water potentially made available by such decreased diversions, this suggestion would not change flows or conditions in stream reaches upstream of the existing irrigation points of diversion. Therefore, this suggestion does not meet the purpose and objectives of the proposed project in the same way that the suggestion addressed in Section 2.3.1.1 does not meet the purpose and objectives of the proposed project.

2.3.5 ALTERNATIVE WITH UNIMPEDED PEAK FLOWS DURING NORMAL/DRY YEARS TO MAINTAIN CHANNEL AND HABITAT

It was suggested that an alternative be considered to allow for peak flows during Normal and Dry years to maintain Mammoth Creek's channel and habitat. The issue of providing peak flows to "maintain channel and habitat" pertains to the magnitude and frequency of occurrence that flushing flows and channel maintenance flows would occur. The alternatives carried forward for detailed consideration in this Draft EIR provide flushing and channel maintenance flows, as more fully explained and evaluated in Chapter 4 - Hydrology, and in Chapter 6 - Fisheries and Aquatic Resources.