CHAPTER 3

Overview of Analytical Approach

CHAPTER 3
OVERVIEW OF ANALYTICAL APPROACH

Section 15151 of the CEQA Guidelines state that "*An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure*."

The emphasis of an EIR is to be an informational document which informs public agency decision-makers and the public generally of the significant environmental effects of a project, identifies possible ways to minimize the significant effects, and describes reasonable alternatives to the project. It must focus on the significant effects on the environment, which should be discussed with emphasis in proportion to their severity and probability of occurrence. Effects that are insignificant and unlikely to occur need not be discussed in an EIR (Section 15143).

CEQA Guidelines Section 15131 states that economic or social information may be included in an EIR or may be presented in whatever form the agency desires. Section 15131 further states: "*Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes*." However, Section 15064(e) of the CEQA Guidelines state that economic or social effects of a project may be used to determine the significance of physical changes caused by the project.

This chapter describes the scope and extent of the environmental analyses for this Draft EIR. Specifically, this chapter describes the framework for the impact analyses, identifies the environmental resource areas evaluated in this Draft EIR, and explains why some resource areas have been dismissed from further evaluation. In addition, this chapter introduces the approach for addressing cumulative impacts.

3.1 EVALUATED ENVIRONMENTAL RESOURCE AREAS

This Draft EIR identifies and describes the potential environmental impacts associated with the Proposed Project Alternative and the other alternatives. Environmental resources within the Project Area were examined to determine whether they could be directly or indirectly affected by implementation of the Proposed Project Alternative or other alternatives. The evaluation of potential impacts resulting from the proposed project includes quantitative analyses based on modeled hydrology. To focus the assessment on reasonably foreseeable impacts, the environmental resource categories evaluated in this Draft EIR are:

- **Hydrology** *(Chapter 4)*
  Lake Mary storage and water surface elevations, Mammoth Creek flows and Hot Creek flows.
- **Water Quality** *(Chapter 5)*
  Water quality in Lake Mary, Mammoth Creek and Hot Creek.

- **Fisheries and Aquatic Resources** *(Chapter 6)*
  Fisheries and aquatic habitats in Lake Mary, Mammoth Creek and Hot Creek.
- **Wildlife and Botanical Resources** *(Chapter 7)*
  Botanical and wildlife species around Lake Mary, and along Bodle Ditch, Mammoth Creek and Hot Creek.
- **Recreation Resources** (*Chapter 8)*
  Recreational activities at Lake Mary, Mammoth Creek and Hot Creek.
- **Visual Resources** *(Chapter 9)*
  Visual and aesthetic features at Lake Mary, Bodle Ditch, Mammoth Creek and Hot Creek.
- **Other CEQA Considerations** (*Chapter 10)*
  Local economic and social effects, including growth inducement. District surface water municipal supplies and diversions to the Lake Mary WTP.
- **Climate Change Considerations** *(Chapter 11)*
  Greenhouse gas emissions.

3.2 RESOURCE TOPICS, FEATURES AND FACILITIES DISMISSED FROM FURTHER EVALUATION

Within the Project Area, several resource categories have been eliminated from further analytical consideration because of the limited scope of the proposed project, and insignificant and unlikely effects on these categories. Primarily as a result of previous scoping activities and receipt of public comments on the 2000 Draft EIR/EIS regarding potential environmental impacts associated with the proposed project, these resource categories were determined to not warrant detailed analysis in this Draft EIR. A discussion of these resources, including the rationale for not conducting detailed evaluation of these specific resource categories, is provided below.

- **Land Use**

  Because the Proposed Project Alternative and other alternatives would not involve any construction activities or change in policies that affect land use, no General Plan, zoning, or land use incompatibility issues are expected as a result of implementation of the Proposed Project Alternative or other alternatives. Additionally, the District does not have land use authority, the responsibility for which lies with the Town of Mammoth Lakes.

- **Cultural Resources**

  Changes in lake water surface elevations and stream flows are sometimes linked to cultural resource impacts due to the exposure of archaeological finds caused by reductions in water levels. In Lake Mary, Bodle Ditch, and Mammoth and Hot creeks, neither the Proposed Project Alternative nor the other alternatives would result in water surface elevation reductions that would exceed those that have historically occurred; therefore, no impacts to cultural resources are expected.

- **Noise**

  Actions associated with the Proposed Project Alternative and other alternatives would not involve construction and, thus, would not result in increased noise levels or expose

people to severe noise levels; therefore, noise impacts are not further evaluated in this Draft EIR.

- **Air Quality**

  The alternatives considered in this Draft EIR do not include features that would cause an increase in air pollution; therefore, no impacts to air quality are expected.

- **Transportation/Circulation**

  The Proposed Project Alternative and other alternatives would not include new construction of water facilities, infrastructure, or any other type of construction activities that may increase traffic congestion, or decrease the level of service standards. Therefore, the Proposed Project Alternative and other alternatives would have no impact on transportation and circulation and these topics are not evaluated in this Draft EIR.

- **Geology/Soils**

  The Proposed Project Alternative and other alternatives would not include new construction of water facilities, infrastructure, or any other type of construction or land disturbance, and would not expose people to potential geologic impacts (e.g., seismic activity, expansive soils) or cause erosion. Therefore, this Draft EIR does not include additional analysis of geology and soils (flushing and channel maintenance flows are evaluated in Chapter 4 – Hydrology and Chapter 6 – Fisheries and Aquatic Resources).

- **Energy and Mineral Resources**

  The alternatives considered in this Draft EIR would not significantly affect energy and mineral resources in the Project Area. The energy requirements of the District's diversion at Lake Mary are low, and are not expected to substantively change with implementation of the Proposed Project Alternative or other alternatives.

- **Hazards and Hazardous Materials**

  Actions associated with the Proposed Project Alternative and other alternatives would not involve construction or disturbances in waterbodies, or discharge of pollutants. The Proposed Project Alternative and other alternatives would not create hazards or hazardous conditions or include hazardous materials. Chlorine is used in the water treatment process as a disinfectant, with contact facilities located at the Lake Mary WTP. The level of risk associated with this use is not expected to change as a result of the alternatives considered in this Draft EIR. Therefore, this Draft EIR does not include an analysis of hazards or hazardous materials.

- **Public Services/Utilities and Service Systems**

  Effects on public services and utilities (e.g., waste disposal, emergency services, sewer capacity, schools) are not expected to result from activities associated with the Proposed Project Alternative and other alternatives. Under the Proposed Project Alternative and other alternatives, road closures would not be required, and interruptions to emergency access would not occur. Therefore, this Draft EIR does not include an analysis of pubic services and utilities.

3.3 FRAMEWORK FOR ENVIRONMENTAL IMPACTS/CONSEQUENCES ANALYSES

In accordance with CEQA requirements, this Draft EIR presents information pertinent to assessing the potential impacts of the Proposed Project Alternative and other alternatives on the environment. Changes to each of the various elements proposed under the alternatives considered may affect a different array of environmental resources. Chapters 4 through 10 each contain the following required CEQA components for these resource categories, as appropriate:

- Environmental Setting/Existing Condition, including a detailed presentation of existing environmental conditions within the Project Area for each resource.
- Environmental Impacts, including impact analysis methodologies, impact indicators, significance criteria, qualitative and quantitative descriptions of potential impacts on the physical, biological, and social environments, and mitigation measures (as necessary) for each of the following alternatives:
    - Proposed Project Alternative
    - Bypass Flow Requirements Alternative No. 2
    - Permit 17332 Bypass Flow Requirements Alternative
    - No Project Alternative (existing and future levels of demand)
- Mitigation Measures (for resources with potentially significant impacts)
- Cumulative Impacts

The CEQA guidelines also recognize the need to consider potential impacts associated with potential future changes to the environmental setting through the No Project Alternative. Therefore, potential impacts associated with the No Project Alternative are evaluated under both an existing level of demand and a future level of demand (maximum buildout).

Two primary types of potential impacts are identified in the resource-specific analyses: (1) direct impacts due to actions associated with implementation of the Proposed Project Alternative or other alternative; and (2) indirect or incidental impacts. The significance of individual impacts is classified as follows:

- ***Beneficial Impact:*** A beneficial impact would result in an improvement to the environment.
- ***Less than Significant Impact***: A less than significant impact would not cause a substantial change in the environment (no mitigation is required).
- ***Potentially Significant Impact:*** A potentially significant impact may cause a substantial change in the environment; however, additional information is needed regarding the extent of the impact. A potentially significant impact is treated as a significant impact unless additional information indicates that the impact will not be significant.
- ***Significant Impact:*** A significant impact would cause a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects using significance criteria specific to each resource. Mitigation measures and/or project alternatives are identified to reduce project effects to the environment.

- ***Significant Unavoidable Impact:*** A significant unavoidable impact would result in a substantial change in the environment that cannot be avoided or mitigated to a less than significant level if the project is implemented.

3.4 OVERVIEW OF THE ENVIRONMENTAL SETTING/EXISTING CONDITION

The environmental setting is the basis of comparison from which the Proposed Project Alternative and other alternatives are compared. The geographic scope of the analyses contained in this Draft EIR focuses on potential changes in the Project Area, extending from Lake Mary to Hot Creek. The environmental setting for this analysis includes the environmental conditions at the time the District filed the NOP in December 2007. The environmental setting sections of each resource chapter in this Draft EIR describe the existing conditions of the physical and biological environments in the Project Area. These conditions vary for each of the resource topics evaluated in this Draft EIR. Thus, each resource-specific chapter includes a description of the environmental setting/existing condition as it pertains to that particular resource topic.

3.4.1 HYDROLOGIC CHARACTERIZATION AND MCWD MODEL APPLICATION

The evaluation of potential impacts of the Proposed Project Alternative and other alternatives, relative to the Existing Condition, includes quantitative analyses based on modeled hydrology. Specifically, the MCWD Model was utilized to simulate hydrological conditions in Lake Mary, in Mammoth Creek and in Hot Creek (downstream to the USGS Hot Creek Flume Gage).

3.4.1.1 WATER BALANCE OPERATIONS MODEL

For this Draft EIR, the MCWD Model was used to characterize Mammoth Creek flows at multiple locations and Hot Creek flows, as well as Lake Mary water surface elevation and storage, for the Existing Condition and alternatives over a range of hydrologic conditions.

The model hydrology was constructed using daily historical Lake Mary inflow, Bodle Ditch diversion, District diversion to the Lake Mary WTP, Twin Falls diversion, Twin Lakes outflow, OMR Gage flow, OLD395 Gage flow, and USGS Hot Creek Flume Gage flow. Daily accretions and depletions between measured flow points were estimated based on historical monitoring data.

For the intended purposes of comparative alternatives analysis, the MCWD Model incorporates the key operational characterizations (described in Chapter 2 – Proposed Project and Alternatives) for each alternative scenario and produces daily outputs. The hydrological period simulated by the MCWD Model extends for 20 runoff years (from April 1988 through March 2008).

Modeled daily output produced for various locations provides a basis for comparing the hydrologic conditions potentially occurring under each of the alternatives, relative to the Existing Condition. Although the model provides a means of comparing the relative differences among the alternatives under a range of hydrologic conditions, model output should not be interpreted as predictions of actual flows that would occur on a certain day over the 20-year period of evaluation. Results from a single simulation may not necessarily correspond to actual District operations for a specific day, but represent hydrologic conditions that could be expected to occur given the operational constraints and assumptions used to characterize each alternative scenario. A detailed description of the MCWD Model and its use in impact determination in this Draft EIR is presented in Chapter 4 – Hydrology, and in Appendix C.

3.5 OVERVIEW OF IMPACT ANALYSES COMPARISONS

To analyze the potential impacts of the Proposed Project Alternative and other alternatives described in Chapter 2 – Proposed Project and Alternatives, modeled scenarios with the Proposed Project Alternative and other alternatives are compared to the Existing Condition. The comparisons of modeled scenarios that are made in this Draft EIR (including the cumulative impact analyses) are presented in **Table 3-1**.

Table 3-1. Summary of Comparisons of Scenarios Evaluated in this Draft EIR

Statute	Baseline Scenario	Compared Alternative Scenario	Purpose of Comparison
CEQA	Existing Condition	Proposed Project Alternative	To evaluate potential impacts of implementing the Proposed Project Alternative or other alternatives, relative to the Existing Condition
		Bypass Flow Requirements Alternative No. 2	
		Permit 17332 Bypass Flow Requirements Alternative	
	Existing Condition	No Project Alternative (existing level of demand) [a]	To evaluate potential impacts if the proposed project were not approved, in both the near-term and what would reasonably be expected to occur in the foreseeable future, relative to the Existing Condition
		No Project Alternative (future level of demand)[b]	
	Existing Condition	Proposed Project Alternative at a Future Level of Demand) [b]	To evaluate potential cumulative impacts of the Proposed Project Alternative under future conditions, relative to the Existing Condition

[a] Level of demand at the time of 2007 NOP issuance, characterized by historical demand levels over the 20-year period of evaluation.
[b] Future level of demand in 2025.

For modeling purposes, the alternatives listed above in Table 3-1 are characterized using an existing level of demand representing historical demand levels over the 20-year period of evaluation. The No Project Alternative is modeled as both the existing and future levels of demand. The cumulative condition is modeled at the future level of demand. The assumed future level of demand reflects the District's projected utilization of permitted surface water supplies at buildout of the Town of Mammoth Lakes in 2025.

The results of the comparisons listed in Table 3-1 are evaluated to describe the potential changes in hydrologic parameters (e.g., Lake Mary storage and water surface elevations, Mammoth Creek and Hot Creek flows) that would be expected to occur in the Project Area under the Proposed Project Alternative or one of the alternatives, relative to the Existing Condition. The evaluations of environmental impacts include comparing the differences in model outputs for these comparisons over the 20-year period of hydrologic record, to the impact indicators and significance criteria that were developed for each resource category. These evaluations are presented in the individual resource chapters (Chapters 4-10).

In each resource chapter, the subsection describing the anticipated environmental impacts and consequences discusses each impact in association with the following comparisons of scenarios, in the following order: (1) the Proposed Project Alternative compared to the Existing Condition; (2) Bypass Flow Requirements Alternative No. 2 compared to the Existing Condition; (3) the Permit 17332 Bypass Flow Requirements Alternative compared to the Existing Condition; and

(4) the No Project Alternative (existing and future levels of demand) compared to the Existing Condition.

3.6 CUMULATIVE IMPACT ASSESSMENT APPROACH

The CEQA Guidelines require that the cumulative impacts of a proposed project be addressed in an EIR when the cumulative impacts may be significant and when the project's incremental effect is cumulatively considerable (Title 14 CCR 15130(a), 40 CFR 1508.25(a)(2)). The Guidelines define cumulative impacts as "*two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts*" (CEQA Guidelines §15355). Cumulative impacts are impacts on the environment that result from the combined incremental impacts of the project and other past, present and reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person may undertake such other actions (Guidelines 15355(b), 40 CFR 1508.7). Such impacts can result from individually minor but collectively significant actions taking place over time (40 CFR 1508.7).

If cumulative impacts are not deemed significant, the EIR should explain the basis for that conclusion. Section 15130 of the CEQA Guidelines states that the discussion of cumulative impacts need not provide as much detail as the discussion of effects attributable to the project alone. The level of detail should be guided by what is practical and reasonable (Title 14 CCR 15130).

The cumulative impact analysis in this Draft EIR discusses the cumulative impacts of the Proposed Project Alternative, and other closely related, past, present and reasonably foreseeable projects. This section describes the methodology used for evaluating cumulative impacts, and the other closely related applicable projects and their relationships to the Proposed Project Alternative. The cumulative impact analysis uses both quantitative tools (e.g., hydrologic modeling) and qualitative analyses to determine the potential cumulative impacts of the Proposed Project Alternative and other closely related projects.

3.6.1 CUMULATIVE IMPACT ASSESSMENT METHODOLOGY

According to the CEQA Guidelines (Title 14 CCR 15130(b)), an adequate discussion of significant cumulative impacts should contain the following elements:

- A list or summary of related past, present, and future projects or planned developments that would affect resources in the project area similar to those affected by the proposed project.
- Definition of the geographic scope of the area affected by the cumulative effect and a reasonable explanation for the geographic scope used.
- A summary of the expected environmental effects that may be produced by those projects, with specific references to additional information stating where that information is available.
- A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

To determine which projects to include in the cumulative impact analysis, factors including the nature of each environmental resource being examined, the location of the project, and its type have been considered.

Potential cumulative impacts associated with the Proposed Project Alternative are analyzed both quantitatively and qualitatively in this Draft EIR. As part of the quantitative analysis, the Proposed Project Alternative at a future level of demand (the projected level of demand at 2025 which is full buildout) is compared against the Existing Condition.

The quantitative assessment of potential cumulative impacts associated with the Proposed Project Alternative takes into account reasonably foreseeable future increased water use by the District. In Mammoth Creek, cumulative impacts could occur if changes in flow resulting from the District fully utilizing its existing water rights in the future in combination with other diversions, resulted in a significant impact. To the District's knowledge, no new water projects involving the appropriation of Mammoth Creek water are being considered or are anticipated. Accordingly, the cumulative impacts analysis for Mammoth Creek focuses on the District's existing water rights and how the amount of water diverted under those existing rights may change in the future.

Chance Ranch is located along Mammoth Creek downstream of Highway 395. Mammoth Creek flows through the ranch's property for several miles until it joins Hot Creek, near the lower extent of the ranch. LADWP now owns Chance Ranch and leases it to Dave Wood Ranches. Dave Wood Ranches diverts water from Mammoth Creek to irrigate pasture. LADWP claims water rights for these diversions. The existing diversion of water by Chance Ranch and resultant flows in Hot Creek (at the USGS Hot Creek Flume Gage) are accounted for in the accretion/depletion components (e.g., Chance Ranch diversions, Hot Creek Headsprings flows, Hot Creek Fish Hatchery return flows) in the MCWD Model (see Chapter 4 – Hydrology, and Appendix C).

The pattern and amount of diversions to Chance Ranch are not expected to change substantially in the future. Accordingly, for the purpose of the cumulative effects analysis, these diversions in the future are assumed to be similar to those in the Existing Condition.

There are various other water rights claimants in the Mammoth Lakes Basin. The amount of water associated with these claims is relatively minimal. The total amount of surface water associated with these claims is about 103,000 gallons per day (gpd), or about 0.16 cfs during the peak diversion period[1]. The actual amount of water currently diverted under these claims is not known, nor is it known if any of the claims are fully used. The existing diversion of water by these claimants is accounted for in the modeling of the Existing Condition; however, the effect of diverting the currently unused portions of these claims, if any, is not. While this increment (at worst likely less than 0.10 cfs) may contribute cumulatively to future changes in flow in Mammoth Creek, the magnitude of the change from these users is so small that it exceeds the resolution of a meaningful analysis (MCWD and USFS 2000).

The cumulative impact assessment uses hydrologic model output for the Proposed Project Alternative at a future level of demand compared to the Existing Condition. The analysis of resource-specific cumulative impacts is presented in each resource chapter of this Draft EIR. For cumulative impacts assessment purposes, the tools, approach, impact indicators, and significance criteria used to determine the environmental impacts of hydrologic changes are the same as those used in the resource-specific impact analysis. To fully address cumulative impacts, these analyses also are supplemented with an accompanying qualitative analysis for those projects that cannot be quantitatively assessed by application of the MCWD Model. The

[1] Notable among these water users are the USFS, with rights amounting to 53,480 gallons per day, and the Crystal Crag Water and Development Association, with water rights amounting to about 28,658 gallons per day.

level of detail associated with the cumulative analysis may vary by resource, and is dependent upon whether the Proposed Project Alternative would result in any potential impacts to the resource.

Past, present and reasonably foreseeable projects to be included in the resources-specific qualitative analyses were identified through a multi-step process that included application of several decision-making criteria. The criteria used to identify individual projects for consideration in the cumulative analysis included the following: (1) whether the project, in combination with the Proposed Project Alternative, has the potential to affect the same resources; (2) whether the project is under active consideration; and (3) whether the project would be operational or completed within the timeframe being considered for the Proposed Project Alternative. In addition to relevant past and present projects, projects determined to meet all three of the above criteria are considered to be reasonably foreseeable and within the planning horizon considered by this Draft EIR and, thus, were selected for inclusion in the qualitative cumulative analysis presented in each of the resource-specific chapters of this Draft EIR.

3.6.1.1 PAST, PRESENT AND REASONABLY FORESEEABLE PROGRAMS AND PROJECTS

The Town of Mammoth Lakes Final Program EIR (2007) for the 2005 General Plan Update includes a list and description of cumulative projects identified within the planning area or the larger cumulative effects area associated with the General Plan Update. This list includes both past and present projects considered for the cumulative effects analysis and is incorporated by reference. The hydrologic-related cumulative effects area was the Mammoth Hydrologic Basin (Town of Mammoth Lakes 2007). The majority of the related projects within the planning area are geothermal projects that, while in the same watershed as the Town of Mammoth Lakes, do not share the same water supply as the Town of Mammoth Lakes (Town of Mammoth Lakes 2007). The same holds true for the proposed project in this Draft EIR.

In addition, the quantitative baseline for the cumulative impact assessment in this Draft EIR is the Existing Condition, characterized by the MCWD Model using an existing level of demand for the 20-year period of evaluation extending from April 1988 through March 2008. Thus, the hydrologic condition in the Project Area resulting from relevant past and present projects are represented in the MCWD Model characterization of the Existing Condition.

Reasonably foreseeable, relevant programs, projects, and water management actions considered in the cumulative analysis and their interrelationships are described below. Scoping for this Draft EIR and other recent documents was used to identify projects considered in the cumulative impacts analysis.

- **2005 District Urban Water Management Plan (MCWD 2005)**

  The District's 2005 UWMP included projections of future groundwater production rates and surface water availability to meet maximum buildout (2025) level of demand. Future water availability was based on community growth projections and on type of climatic conditions, including Normal years and multiple Dry year conditions. As indicated by surface and groundwater pumping projections for the future, the volume of water supply currently available from existing sources is insufficient to meet the total demand under multiple Dry-year conditions as the Town of Mammoth Lakes approaches buildout in the year 2025. Additional sources of supply will be required to meet future demand. Potential sources of the additional water supply include increased

use of recycled water by large irrigation customers, up to two new groundwater wells, and improvements in average water use efficiency through water conservation measures. The District will be initiating the 2010 UWMP in late 2010, for completion in 2011. The 2010 Plan will include revised projections of land use in the service area, build-out water demand, and water supply availability.

- **Final Program EIR: Town of Mammoth Lakes 2005 General Plan Update, Vol. 1 (May 2007)**

  The Town of Mammoth Lakes General Plan (General Plan) is commonly referred to as a "blueprint" for where, how much, and what type of growth is planned for the future. All California cities and counties are required by the State of California to have a general plan (California Government Code 65300 et. seq.). Containing objectives, policies, diagrams and implementation strategies, the General Plan is a commitment to a course of action that leads the Town of Mammoth Lakes toward its stated physical, social and economic goals.

  The buildout population for the 20-year planning period in the Final Program EIR for the 2007 General Plan Update was established by preparing a recreational trend forecast, a demographic and economic trend forecast and a land use capacity analysis. The recreation trend forecast looked at recreational visitor trends that support factors for growth using a ratio of visitation to project a future population. The land use capacity analysis assessed the number of units and population that could be developed through certain land use designations and development assumptions.

  The assumptions of the three models support the projection that the total number of residents, visitors and workers on a winter weekend will grow to between 45,000 to 52,000 by the year 2025. Based on these analyses, the General Plan Update establishes a policy of a total peak population of residents, visitors and employees at 52,000 people. Ultimately, these land use designations could result in a buildout population over 52,000 but less than 60,000 if all land were built to capacity.

  The District currently has enough supplies to meet demand projections through the buildout of the community during Normal and Wet years. However, in the event of a single Dry year (lowest historical runoff year) or an extended dry period (i.e., multiple Dry years), it is expected that there will be a shortfall between supply and demand unless additional supplies are developed, and/or more stringent conservation measures (than those identified in the document) are implemented.

  Quantitative analysis of future District surface water diversions consistent with the 2007 Town of Mammoth Lakes General Plan Update is presented in each resource chapter.

- **Mono County General Plan and 2009 Land Use Element Update (Mono County 2009)**

  The Mono County General Plan (1997) states that "…*the environmental and economic integrity of Mono County shall be maintained and enhanced through orderly growth, minimizing land use conflicts, supporting local tourist and agricultural based economies, and protecting the scenic, recreational, cultural and natural resources of the area*." The updated 2009 Land Use Element of the plan contains specific policies for the community planning areas in the county, including the area termed the "Mammoth Vicinity", which includes the Project Area. The anticipated 80% buildout figures for dwelling units and population assume an 80% buildout in community areas and a 50% buildout on private lands outside of community areas (Mono County 2009). However, this assumption is probably high because large parcels of private land outside of community areas are in many cases

unlikely to be developed in the next 20 years due to environmental constraints, lack of access, lack of infrastructure, and community desires to keep large parcels of agricultural lands as open space. Nevertheless, the Land Use Element recognizes that "*…the Town of Mammoth Lakes currently has an insufficient water supply to support the level of growth established in the Town's General Plan. Future activities to obtain additional water supplies from areas outside of the Town's boundaries may impact resources and values on those lands*."

- **Mono County Local Agency Formation Commission Municipal Service Review And Sphere of Influence Recommendation (LAFCO 2009)**

  The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 requires Local Agency Formation Commissions (LAFCOs) to conduct comprehensive reviews of all municipal services in each county in California and to periodically update that information. The purpose of the municipal service reviews is to gather detailed information on public service capacities and issues.

  The Cortese-Knox-Hertzberg Local Government Reorganization Act requires LAFCOs to develop and determine the Sphere of Influence (SOI) for each applicable local governmental agency that provides services or facilities related to development. Government Code Section 56076 defines a SOI as "a plan for the probable physical boundaries and service area of a local agency." Service reviews must be completed prior to the establishment or update of SOIs (§56430(a)). Spheres of influence must be reviewed and updated as necessary, but not less than once every five years (§56425). The 2008 Municipal Service Review and Sphere of Influence Recommendation was conducted in response to, and in conjunction with, an update of the SOI for the District.

  Of particular relevance to the proposed project, the Municipal Service Review included the following:

  - The expansion and renovation of existing facilities will be needed to maintain or increase the quality of service provided by the District, as well as to serve development at buildout. The District has planned for the required expansion and renovation of its facilities in its long-term plans.
  - The replacement of aging equipment and/or the purchase of additional equipment will be needed to maintain or increase the quality of service provided by the District. The District has also planned for its future equipment needs in it long-term plans.
  - Growth is anticipated to occur primarily in and adjacent to existing developed areas and to include a wide spectrum of residential, resort, commercial, and industrial uses. Population is described as People at One Time (PAOT) and includes residents and visitors. PAOT is used as a measurement because of the large visitor population in the Town of Mammoth Lakes at any given time. The population in the area served by the District is projected to increase to 52,000 PAOT by 2024, creating an increased demand for water and sewer services.

- **Groundwater Monitoring and Management (Wildermuth 2009)**

  The District currently uses nine wells to extract groundwater. A considerable amount of information has recently become available through separate, but ongoing District efforts related to the development of a Mammoth Basin Groundwater Model for the Mammoth groundwater basin. In 2009, Wildermuth Environmental, Inc. completed a beta version

of the groundwater model. The current and buildout demand scenarios were evaluated with the model, using a 50-year trace of historic hydrology and future pumping levels, to determine if the projected groundwater pumping by District wells will be sustainable in the future. The model results suggest that groundwater pumping is sustainable for both the current and buildout demand scenarios.

- **USFS Applications for Storage at Mamie and Twin Lakes**

  The USFS, Inyo National Forest, has filed Application 31365 with the SWRCB for a water right permit to confirm the installation of a dam and its long-standing storage of water in Lake Mamie. The application is to collect water to storage behind an existing (constructed in 1968) 5-foot-high dam forming a 70 AF capacity onstream reservoir with a surface area of 17.2 acres. Water collected to storage is used for fish and wildlife enhancement and recreational purposes. The SWRCB considers this to be a "minor" project (the proposed diversion is 3 cfs or less by direct diversion or 200 AF or less per year by storage) as defined by Section 1348 of the Water Code.

  The USFS also has filed Application 31366 with the SWRCB for a water right permit to confirm the installation of a dam and its long-standing storage of water in Twin Lakes. The application is to collect water to storage behind an existing (constructed in 1953) 5.2-foot-high dam forming a 150 AF capacity onstream reservoir with a surface area of 37.2 acres. Water collected to storage is used for fish and wildlife enhancement and recreational purposes. The SWRCB also considers this to be a "minor" project (the proposed diversion is 3 cfs or less by direct diversion or 200 AF or less per year by storage) as defined by Section 1348 of the Water Code.

- **Ongoing Forest Plan Revision on the Inyo National Forest (USFS 2009a)**

  The National Forest Management Act (NFMA) is the primary statute governing the administration of national forests. NFMA requires the assessment of forest lands and the development and implementation of a management plan for each unit of the National Forest System with revisions every 10 to 15 years. The Land Management Plan, or Forest Plan, is the principal document that guides the decision making of Forest Service managers. Forest Plans guide where and under what conditions an activity or project on national forest lands can generally proceed. The existing Forest Plan for the Inyo National Forest was completed and signed in 1988.

  The USFS is focusing on revising 14 forest plans in California, with emphasis first placed on the Sierra Nevada forests. Regional USFS staff have initiated work on a bio-regional assessment of the Sierra Nevada forests that will be used by the individual forests in their Forest Plan revision efforts.

  Ongoing Inyo National Forest Recreation Site Facility Master Planning Analysis (USFS 2007)

  The USFS is reviewing more than 200 developed recreation sites across the Inyo National Forest through a process called "Recreation Site Facility Master Planning" (RSFMP). Many of the USFS facilities were built 30 to 50 years ago, and have reached the end of their useful life without significant deferred maintenance investment. Other facilities receive no or little use, and no longer serve the demand that existed 30 to 50 years ago. The fundamental premise of the process is to create an inventory which is sufficiently sustainable and flexible to be adapted annually to any changes in available resources.

With input and information from the public, this process will allow the USFS to provide the better forest-specific recreation opportunities. As part of the RSFMP, this study will look at the operation and maintenance of the campgrounds, picnic areas, trailheads, boat ramps, visitor centers, and other facilities in the Inyo National Forest to assure that current and future visitor and community recreation needs are met. The RSFMP involves seven steps, each bringing the forest's developed recreation sites in closer alignment with the forest's unique characteristics, projected demand, visitor expectations, costs for operation and maintenance, and revenue. The RSFMP will serve as a framework from which the Inyo National Forest will prioritize investments, and pursue changes in operations or maintenance of recreation sites.

- **Ongoing Mammoth Meadows Restoration Project (USFS 2009)**

  The Inyo National Forest is in the process of completing environmental documentation for the proposed Mammoth Meadows Restoration Project, located in the meadow west of the Snowcreek Condominiums and Golf Course. Proposed actions would include restoration activities in Mammoth Meadow to reduce soil erosion and protect meadow function. A gully, up to 6 ft deep and extending over about 200 ft of road, has formed on an existing access road through the meadow. The gully formed in the late 1990s, when water exceeded the capacity of an existing channel and flowed onto the road resulting in soil loss in the road and subsequent deposition on the meadow surface, altering meadow vegetation and soils. Additionally, there are old grade control structures in Bodle Ditch, which runs through the Mammoth Meadows, that are failing and leading to ditch bank erosion. The treatments proposed by this project would fill in the gullied road, stabilize it to prevent future erosion, and return the flow to its original channel. It would also repair or replace grade stabilization structures in Bodle Ditch. It is anticipated that the initial proposed treatment would occur during the summer of 2010, although meeting the USFS' long-term objectives of returning hydrologic function to the Mammoth Meadows will require multiple project phases.

- **Ongoing Lake Mary Road Bicycle Lanes and Off-Street Bicycle Paths Project (Town of Mammoth Lakes and USFS 2001)**

  The Mammoth Lakes Planning Commission is implementing the Lake Mary Road Bicycle Lanes and Off-Street Bicycle Paths Project for which a final environmental assessment was completed in 2001. Consistent with the Caltrans District Systems Management Plan, the Town of Mammoth Lakes General Plan, General Bikeway Plan and the Mammoth Lakes Trail System Plan, the project consisted of constructing a combination of Class II Bike Lanes[2] and Class I Bike Paths[3] along Lake Mary Road from Minaret Road to Horseshoe Lake.

  The project includes a combination of an on-street bike lane from Minaret Road to the Twin Lakes Bridge and an off-street bike path (i.e., an 8-foot wide asphalt path with two 2-foot shoulders) from the Twin Lakes Bridge to the Horseshoe Lake day-user parking lot. From the Twin Lakes Bridge to the Horseshoe Lake day-user parking lot, the bike path would be adjacent to Lake Mary Road within some constrained areas. Constrained areas include the bridge crossing at the Lake Mamie outfall (Upper Twin Lakes) and

[2] Class II Bike Lanes provide a striped lane for one-way bike travel on a street or highway (Town of Mammoth Lakes and USFS 2001).

[3] Class I Bike Paths provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with minimized cross-flows over vehicle travel lanes (Town of Mammoth Lakes and USFS 2001).

areas adjacent to Bodle Ditch (drainage channel) near the Mammoth Lakes Pack Outfit equestrian facility. The goal of this project is to provide the largest possible amount of off-street bike trail in lieu of on-street bike lanes while avoiding significant impacts to the environment.

- **Planned Increased Geothermal Pumping**

  To the northwest of the Hot Creek Hatchery, high-temperature geothermal water is extracted from a deeper hydrothermal system for commercial power generation at the Casa Diablo Power Plant, which is currently owned by the ORMAT Corporation (Wildermuth 2009). The Mammoth-Pacific geothermal power plants at Casa Diablo on the eastern front of the Sierra Nevada Range rely on binary conversion of ~320°F water from an outflow plume related to Holocene volcanic activity in the west moat of the Long Valley Caldera. A total of 37 megawatts (MW) is produced from three binary power plants. Currently, Mammoth-Pacific is exploring for new geothermal resources one to two miles west of its existing well field. The company also has long-range plans for exploring the west moat of the caldera. The latter resource is far deeper than at Casa Diablo (~3,281 ft compared to ~656 ft) but indications are that temperatures of geothermal fluids there may be 392°F to 437°F. Issues surrounding potential development of these areas include impact on temperature and pressure in Mammoth-Pacific's existing well field. Areas of new exploration are in the upgradient direction, and any fluid extraction in those areas could adversely affect existing well field production capacity (Sass and Priest 2002).

  At the time of issuance of this Draft EIR, ORMAT was expected to issue a NOP for expansion of the Casa Diablo facilities, to increase power production by 40 MW (referred to as the CD-4 Project). The expansion is anticipated to include two new generating units, a new geothermal brine supply pipeline, and up to 16 deep production wells.

  The USFS and Bureau of Land Management (BLM) also have recently completed the requisite NEPA compliance activities associated with the leasing of BLM- and USFS-administered lands with high potential for renewable geothermal resources in 12 Western states and Alaska (USFS 2010). In mid-2008, the USFS and BLM issued a Draft Programmatic EIS for Leasing of Geothermal Resources in 12 Western States and Alaska and Notice of Public Hearings, and subsequently issued a Record of Decision in late 2008. This decision required that several of the BLM and USFS geographic-specific Resource Management Plans (RMP) be amended to reflect the EIS decision-making, including the Bishop RMP. Mono County is identified as part of the Project Area that is addressed by the 2008 Programmatic EIS (USFS and BLM 2008).

- **Suggested Declaration of Mammoth Creek as a Fully Appropriated Stream System**

  During the scoping process for this Draft EIR, the issue of declaring Mammoth Creek to be a fully appropriated stream system was raised. This topic also has been the subject of previous discussion between the District and the SWRCB. As previously discussed, issues associated with downstream water rights and determining whether Mammoth Creek is fully appropriated are separate water right issues that are not related to the CEQA compliance process for this Draft EIR. Regardless, a declaration of Mammoth Creek as a fully appropriated stream system would preclude future permitted diversions along the creek.

Resource-specific cumulative impacts are analyzed and presented in each of the individual resource chapters included in this Draft EIR.