Summary

PROPOSED PROJECT

The California State Water Resources Control Board (SWRCB) has prepared a draft environmental impact report (EIR) for the review and modification of certain Mono Basin water rights held by the City of Los Angeles. The draft EIR was prepared in accordance with the provisions of the California Environmental Quality Act (CEQA). The project evaluated in the draft EIR consists of:

- the establishment and maintenance of instream flow requirements in the Mono Lake tributaries from which the City of Los Angeles diverts water; the instream flow requirements will be established in compliance with California Fish and Game Code Sections 5937 and 5946 and a court mandate to release sufficient water to reestablish and maintain fisheries that existed in these streams prior to the city's diversions; and

- the establishment and maintenance of water elevation requirements in Mono Lake to provide appropriate protection for public trust resources and beneficial uses of Mono Lake.

The SWRCB will incorporate the appropriate instream flow requirements, lake level requirements, and mitigation measures into the City of Los Angeles' water right licenses for diversion from Mono Basin.

BACKGROUND

In 1940, the city was granted permits by the State of California allowing the appropriation of flows from four major tributary streams to Mono Lake, which lies in an interior-drained basin east of the Sierra Nevada in Mono County. The lake, because of its great geologic age, is hypersaline and supports a unique and very productive invertebrate population (alkali fly and brine shrimp), which supports annual migration and nesting of millions of birds.

For more than 50 years, the city has been diverting an increasing portion of the flows of Lee Vining Creek and Rush Creek, including two of its tributaries, Parker and Walker Creeks, which flow from the snowy east side of the Sierra Nevada. By 1970, stream diversions were nearly total. Exported through

the Mono Craters tunnel, about 83,000 acre-feet (af) of water per year since the mid-1970s have augmented threefold the flows of the Upper Owens River.

The Owens River has provided a major source of water to the city since 1913, when the Los Angles Aqueduct was constructed with an intake south of Bishop near Big Pine. The Upper Owens River, regulated at Lake Crowley reservoir near Mammoth Lakes, is joined by many other streams and exports from groundwater pumping in Inyo County near Bishop before reaching the aqueduct intake. Power is generated from the Middle Owens River where it passes through the Owens River gorge. In recent decades, exports from Mono Basin made up about one-fifth of the waters taken by the aqueduct.

In 1974, the SWRCB granted licenses to the city confirming the city's right to Mono Basin waters. The city's exports have caused a decline in lake surface elevation of 40 feet and in lake surface area by 25%. Salinity and alkalinity of the lake waters have increased, bird-nesting islands have lost their security from mainland predators, riparian and freshwater habitats along the tributary streams have been irreversibly lost through erosion, and occasional massive dust storms have been induced from salt efflorescence on exposed lakebeds. Yet the lake's fascinating complex of tufa formations, formed underwater during higher lake levels, has been increasingly exposed for the enjoyment of the curious explorer.

In 1983, in response to a suit filed by the National Audubon Society, the California Supreme Court held that the public trust mandated reconsideration of the City of Los Angeles' water rights in Mono Basin. The court noted that Mono Lake is a scenic and ecological treasure of national significance and that the lake's value as a recreational and ecological resource was diminished by recession of the water level.

The court found that the city's water rights were granted without consideration of impacts on these resources and therefore the SWRCB or the court should reconsider the city's water rights. The court noted that before continued stream diversions could be approved, the effect of such diversion on interests protected by the public trust should be considered and that harm to those interests should be minimized or avoided if feasible.

In 1990, the California Court of Appeal ruled that the city's water rights licenses must be conditioned to require bypass streamflow around the diversions sufficient to reestablish and maintain the fisheries that existed before its diversion of water. The court noted that this requirement of state law must be met regardless of the city's need for water.

Subsequently, the Superior Court for El Dorado County entered preliminary injunction requiring the city to modify or cease exports as needed to maintain the surface elevation of Mono Lake at or above 6,377 feet and to provide a specified minimum flow regime in all four diverted tributary streams. These restrictions are to remain in effect until amended by the court or until the SWRCB amends the city's water rights licenses. The SWRCB decision amending the city's water rights is subject to judicial review.

DECISION PROCESS

The EIR is being circulated for 90 days to interested parties for review and submission of written comments. Following this period, public hearings will be held in Sacramento to receive evidence related to the amendment of the City of Los Angeles' water rights licenses. Based on submitted comments, modifications to this draft report may be made before any SWRCB decisions.

PROJECT ALTERNATIVES

This EIR evaluates the full range of water rights alternatives, each of which represents a lake level target and projected volume of water export based on assumed stream diversion rules. The alternatives range from imposing no new restrictions on diversion to ending all diversions. The definition of alternatives is based primarily on differing lake levels rather than on the quantity of water needed to provide instream fishery flows. Whatever fishery flows are eventually determined by the SWRCB to be appropriate will be associated with some net quantity of inflow to Mono Lake and a corresponding lake level. The range of alternatives defined in this report is sufficiently broad to cover any potential level of inflow that would result from those fishery flows.

Seven alternatives have been defined. The No-Restriction and No-Diversion Alternatives define the full range of possibilities, but the No-Restriction Alternative cannot meet the project objectives. Five intermediate alternatives have been formulated that can meet project objectives to varying degrees; they entail minimum required streamflows supplemented as needed through additional streamflow releases intended to keep the lake surface above selected target elevations whenever possible (Figure S-1).

The alternative development process included constructing several numerical models for simulation purposes and formulating appropriate diversion management rules as assumptions on which to base the simulations. Relationships between streamflows and lake volume and surface elevation were identified through the development of a monthly Mono Lake water balance model. Relationships between available water exports from Mono Basin and the city's water demand, other supplies available to the aqueduct from Owens Valley streams and the groundwater basin, and water conveyance and storage constraints throughout the aqueduct system were simulated with a numerical monthly model of the system.

The aqueduct model was used to perform simulations of specific project alternatives that embody consistent water release requirements and target lake levels. The alternatives entail minimum specified streamflows, accounting for in-basin irrigation, triggering supplemental lake releases when needed, respecting aqueduct-operating constraints, and meeting water supply targets whenever possible. The diversion management rules would specify minimum streamflows and annual supplemental releases to Mono

Lake based on the April 1 runoff forecast of each year. They also include actions to manage reservoir levels within specified ranges and to export surplus water from the basin subject to streamflow limits for the Upper Owens River.

For all simulations of the alternatives, the historical 1940-1989 hydrologic record was used to represent the normal range of climatic variation that could be expected to occur in the future. The simulations revealed that the assumed diversion rules would generally, but not always, prevent the lake surface from falling below the target lake level of the alternative. Estimates of minimum lake elevations under each alternative for prolonged droughts also were estimated based on data from the current drought and other dry years of record.

Because of variations in annual snowpack, snowmelt runoff is highly variable from year to year. During the historical period, the minimum observed runoff was a little less than half of normal, whereas the maximum observed runoff was almost twice normal. During the drought period beginning in 1987, runoff averaged about 60% of normal. In this report, dry years are defined to be the driest 20% of all years, which historically have involved runoff of 69% or less of normal. Wet years are the wettest 20% of all years, which historically have produced runoff of 132% or more of normal.

The No-Restriction (No-Project) Alternative

Under this alternative, no new restrictions would be placed on the diversions of water by the city under its water rights licenses. Minimum streamflows and lake levels would not be required. The city would be allowed to divert water based entirely on availability and need. Irrigation of in-basin lands would be discretionary and is assumed to continue at historical levels. Limiting streamflows in the Upper Owens River during exports would not be required. The alternative would entail continuation of practices that prevailed before the court's involvement in the diversion of Mono Basin waters and is therefore considered to be the "no-project" alternative.

Under this alternative, the lake surface would gradually fall to an average elevation of about 6,355 feet and fluctuate about 21 feet, depending on actual runoff. Approximately 85 thousand acre-feet per year (TAF/yr) (73%) would be exported from Mono Basin and 32 TAF/yr (27%) would be released to Mono Lake from the four streams, on average. During an average water year, none of the diverted tributary streams would have flows below the diversions in any months, but Rush and Lee Vining Creeks would be subject to floodflows from time to time that could exceed 500 cubic feet per second (cfs) in Rush Creek and 300 cfs in Lee Vining Creek.

The 6,372-Ft Alternative

This target elevation corresponds to the lowest lake level that the lake has reached in historical time, occurring at the end of 1981 after 40 years of streamflow diversions. The lake surface rose above this level

through the remainder of the 1980s and, although declining toward it again, remains above it today (about 6,374 feet).

Under this alternative, the lake surface would normally fluctuate about 6.5 feet in elevation, depending on actual runoff, and would have an average elevation of 6,375 feet. Occasionally, the lake surface would rise as high as about 6,379 feet. During extreme drought, the lake surface might fall as low as about 6,370.4 feet. Approximately 64 TAF/yr (51%) would be exported from Mono Basin and 61 TAF/yr (49%) would be released to Mono Lake, on average. During most years, streamflows would not climb above minimum levels that are imposed in the simulations. These flow levels are those low flows occurring no more than 10% of the time. Rush and Lee Vining Creeks would be subject to spilling flows from time to time, however.

The 6,377-Ft Alternative

This target elevation corresponds to that level beneath which no diversions are currently allowed under the court's preliminary injunction. It is the interim minimum target lake level, intended to protect the lake's public trust resources until action can be taken by the SWRCB. The lake level dropped below this elevation in late 1976 after 35 years of streamflow diversions but rose above it temporarily between 1983 and 1989 because of a wet period.

Under this alternative, the lake surface would normally fluctuate about 6.5 feet in elevation, depending on actual runoff, and would rise to an average elevation of 6,379 feet. Occasionally, the lake surface would rise as high as about 6,383 feet. During extreme drought, the lake surface might fall as low as about 6,373 feet. Approximately 52 TAF/yr (41%) would be exported from Mono Basin and 74 TAF/yr (59%) would be released to Mono Lake, on average.

In addition to having at least 10% of normal flows in the diverted streams in each month, this alternative would provide for system maintenance flows in June equal to historical median flows above the diversions. Larger spilling flows would occur from time to time.

The 6,383.5-Ft Alternative

This target elevation corresponds to the midpoint of the range of lake levels (6,390-6,377 feet) recommended by the U.S. Forest Service (USFS) in its management plan for the Mono Basin National Forest Scenic Area. The declining lake surface passed through this elevation in 1973 after 32 years of streamflow diversions. During the wet period of the mid-1980s, this elevation was not attained.

Under this alternative, the lake surface would normally fluctuate about 6 feet in elevation, depending on actual runoff, and would rise to an average elevation of 6,385.7 feet after 5-10 years. Occasionally, the lake surface would rise as high as about 6,389 feet. During extreme drought, the lake surface might fall as low as about 6,378 feet. Approximately 44 TAF/yr (35%) would be exported from Mono Basin and 82 TAF/yr (65%) would be released to Mono Lake, on average. The streamflow pattern for this alternative would be similar to that for the 6,377-Ft Alternative but with higher average streamflows.

The 6,390-Ft Alternative

This target elevation corresponds to the upper lake level recommended in the USFS management plan. The lake surface dropped below this elevation in 1965 after 24 years of streamflow diversions and has remained lower.

Under this alternative, the lake surface would normally fluctuate about 6 feet in elevation and would reach an average elevation of 6,391.6 feet after about 30 years. Occasionally, the lake surface would rise as high as 6,395 feet and, during extreme drought, fall as low as 6,383 feet. During the first 50 years under this alternative, approximately 30 TAF/yr (24%) would be exported from Mono Basin and 96 TAF/yr (76%) would be released to Mono Lake, on average. After equilibrium were attained, exports would rise to 37 TAF/yr (29%) and lake releases would fall to 89 TAF/yr (71%). The streamflow pattern for this alternative would be similar to that for the 6,377-Ft and 6,383-Ft Alternatives, except that higher flows would be released in wetter periods. Large spilling flows would occur from time to time that could exceed 490 cfs in Rush Creek and 320 cfs in Lee Vining Creek.

The 6,410-Ft Alternative

This target elevation corresponds to an intermediate elevation between the 6,390-Ft Alternative and the No-Diversion Alternative, providing an alternative that could reflect substantial streamflows if required by the SWRCB to protect public trust resources. The lake surface dropped below this elevation in 1951 after 10 years of streamflow diversions and has remained below this elevation.

Under this alternative, the lake surface would normally fluctuate about 7 feet in elevation, depending on actual runoff, and would eventually reach an average elevation of 6,410.8 feet in about 80 years. Occasionally, the lake surface would rise as high as 6,415 feet and, during extreme drought, fall as low as 6,401 feet. During the transition period, approximately 11 TAF/yr (9%) would be exported from Mono Basin and 115 TAF/yr (91%) would be released to Mono Lake, on average. After equilibrium were obtained, exports would rise to 22 TAF/yr (17%) and lake releases would fall to 104 TAF/yr (83%).

Streamflow pattern would be similar to those of the previous alternatives, except for higher peak flows in spring, higher flows in wet years, and slightly larger spills from time to time.

The No-Diversion Alternative

Under this alternative, diversions of the four tributary streams would be entirely curtailed. Streamflow and lake level would be determined by natural weather events and patterns, and the lake surface would rise toward or beyond the prediversion level.

After a transition period of more than 100 years, the lake surface would eventually reach an estimated average elevation of about 6,425 to 6,430 feet and would normally fluctuate about 10 feet in elevation thereafter, depending on actual runoff. No water would be exported from Mono Basin.

EVALUATING ENVIRONMENTAL CHANGES FOR THE ALTERNATIVES

In this EIR, project impacts for each alternative are described as expected changes from the resource conditions existing in 1989, just before the court's issuance of the preliminary lake level injunction. At that time, the lake stood at an elevation of 6,376 feet and minimum streamflows were required in Rush and Lee Vining Creeks of 19 and 5 cfs, respectively. No water was being released to Parker and Walker Creeks below the diversions, and no minimum flows were required. These conditions are called the "point of reference" in this EIR.

For assessment of some resource impacts such as power and water supply, the long-term implications of adhering to these minimum streamflows require characterization over some period of time. Accordingly, a "point-of-reference scenario" that evaluates conditions over a 20-year analysis period (1992-2011) was developed similarly to the alternatives simulations, using the water balance and aqueduct operations model and the historical hydrological data applied over 25-year and 50-year periods.

Cumulative impacts are assessed considering closely related past, present, and reasonably foreseeable future projects. The city's diversions since 1941 are considered a closely related project. Thus, a lake surface elevation of 6,417 feet, undiverted streamflows, and prediversion resource conditions constitute the basis of the major portion of the cumulative impact assessments in this report.

IMPACTS OF THE ALTERNATIVES

In addition to identifying significant adverse project effects and cumulative effects of the alternatives as required by CEQA, this document identifies project benefits. This forecasting allows the SWRCB to satisfy the judicial mandate of adopting an alternative that balances protection of public trust values with the city's needs for water and power.

The Mono Lake water balance model and the aqueduct operations model provide a unique opportunity to simulate many effects of the alternatives quantitatively. Although all effects of the alternatives cannot be characterized numerically, this simulation approach provides the framework for an objective treatment of Mono Basin issues. In some instances, quantified changes are given in absolute terms (e.g., acreages); in other cases, absolute values cannot be reliably forecasted but relative values among the alternatives can still be reliably estimated. Thus, the EIR relies on the measurement of impacts and benefits through the use of several numerical models and estimation procedures employing quantifiable variables. These models and estimates are based on results of the hydrologic simulations of the alternatives.

The results of these assessments are summarized in Table S-1. Resource topics in the table conform to the sequence of chapters in the document. Values of variables are given for each alternative, the point of reference or point-of-reference scenario, and the prediversion condition. Project and cumulative effects considered significantly adverse are indicated by footnote, as is the availability of measures to substantially mitigate the impacts.

The summary comparisons in the table are necessarily brief and not fully explanatory, but they provide an indication of the range of variables assessed and the general relationships of these variables to lake level, streamflow, and export as embodied by the alternatives. Table S-1 therefore can be used as an overview to guide the reader to the resource (e.g., wildlife or fisheries) chapters of interest.

Each resource chapter of the EIR describes the prediversion and point-of-reference environmental setting for the resource, impact assessment methodology, criteria for significance of impacts, and effects of the alternatives in both comparative and alternative-by-alternative format. A summary comparison of the effects of the alternatives in each chapter provides a more thorough tabular summary and explanation of the values of impact variables among the alternatives, providing the basis for those appearing in Table S-1.

MITIGATION MEASURES

Feasible mitigation measures are not available for many impacts, but most impacts can be avoided or reduced through selection of another alternative. Some impacts, particularly cumulative impacts, can be mitigated as indicated in Table S-1. The measures available to provide mitigation are shown in Table S-2.

CONCLUSIONS

Effects on Fisheries in the Tributary Streams

In addition to meeting its responsibilities under CEQA, the SWRCB must also meet specific criteria established in court orders addressing fisheries resources in Mono Lake tributaries. The California Court of Appeals has directed the SWRCB to exercise its ministerial duty to amend the Los Angeles Department of Water and Power's (LADWP's) water right licenses for appropriation of the Mono Lake tributaries to include conditions in accordance with California Fish and Game Code Sections 5937 and 5946. Most importantly, the court further specified that licenses require LADWP to "release sufficient water into the streams from its dams to reestablish and maintain the fisheries that existed in them prior to its diversion of water". This standard has an overriding influence on the evaluation and selection of alternative lake levels, as described at the end of this chapter.

Several factors limit reestablishing pre-1941 fishery conditions in the Mono Lake tributary streams. Pre-1941 fishery conditions cannot be accurately described and, consequently, it would be difficult to ascertain whether the objective of reestablishing the pre-1941 conditions was ever met. It was recognized early during preparation of the habitat restoration program ordered by the El Dorado Superior Court that existing conditions may preclude restoration of some specific pre-1941 physical conditions. The Restoration Technical Committee therefore agreed to and adopted the goal of developing and implementing programs to establish aquatic and riparian conditions and resource values equivalent to those existing in the streams before 1941 as an acceptable substitute for the court-ordered goal of reestablishing the conditions that benefited the fisheries that existed in the creeks before 1941. Establishing even equivalent conditions that benefited the pre-1941 fishery is impossible in the short term and possible in the long term only if aggressive and substantial habitat restoration, in concert with major instream flow releases, is successfully undertaken.

Compared to the 1989 point of reference, all alternatives (except the No-Restriction Alternative) have substantial fishery benefits in the Mono Lake tributaries. Compared to the pre-1941 conditions, however, significant cumulative impacts were identified for all alternatives. Similarly, none of the alternatives can restore and maintain pre-1941 fishery conditions within less than 50 or more years. Major geomorphic alterations are simply too great to allow restoration of the complex habitat functions present in lower Rush and Lee Vining Creeks in the pre-1941 period. Successful restoration efforts now will require greater short-term control of high flows while channel and habitat conditions are stabilized and restored.

California Department of Fish and Game (DFG) Stream Evaluation Reports provide fishery protection flows and other measures to optimize fishery conditions in Mono Lake tributaries. It is unclear whether these reports represent DFG's formal recommendations for each stream or are consultants' recommendations only. Nonetheless, the Stream Evaluation Reports represent the best available

information provided by DFG for establishing conditions that approach, to the greatest degree possible, the pre-1941 habitat conditions desired by the court.

Aqueduct model simulations, based on preliminary Stream Evaluation Report instream flow recommendations (see Table 2-6 in Chapter 2 or Table 3D-32 in Chapter 3D), were used to evaluate the implications of possible fisheries instream flow requirements. The recommended flows would cause the surface elevation of Mono Lake to rise to an average elevation of 6,381 feet, with a maximum Rush Creek flow of 60 cfs, or to 6,385 feet, with a maximum Rush Creek flow of 100 cfs (see Figure 2-17 in Chapter 2 or Figure 3D-24 in Chapter 3D). Uncontrolled spills would not likely occur in Mono Basin tributaries under the conditions specified. Minimum instream flow recommendations for Rush Creek would be met in most years, but available flows in Lee Vining, Parker, and Walker Creeks would often be insufficient to meet the specified minimum instream flows in dry and normal runoff years.

These simulated lake level ranges, when compared to the lake level regimes described for each alternative, indicate the degree to which each alternative is capable of meeting the pending DFG instream flow recommendations for protection of fishery resources. The 6,383.5-Ft Alternative is the alternative that most closely satisfies preliminary DFG recommendations developed to optimize fisheries conditions. The average lake level (6,385 feet) based on the 6,383.5-Ft Alternative would meet instream flow requirements based on DFG's preliminary stream evaluation reports.

Environmentally Superior Alternative

In accordance with CEQA, this report focuses on predictable changes in the environment for each of the project alternatives. The changes in the environment include changes in land, water, atmospheric conditions, aquatic ecosystems, plant and wildlife communities, and objects of historical and aesthetic significance.

The City of Los Angeles may compensate for a reduction of water supply from Mono Basin in a variety of ways, each of which could have different environmental effects in the Los Angeles area or other areas of the state. Without knowing what particular actions the city may take, it would be speculative to attempt any detailed analysis of the effects of those actions. This document, however, provides an assessment of direct effects on the city's water and power supply, and on agricultural and recreational activity in Mono Basin and the Owens River basin. These resource utilization effects must be considered by the SWRCB, together with environmental impacts and public trust values within Mono Basin, in reaching a decision on amending the city's water rights.

For the physical environment, identification of the environmentally superior alternative depends on the frame of reference used to examine the effects of the alternatives. The results of two approaches are described below. The first approach focuses on impacts relative to the 1989 point of reference, addressing which alternatives minimize adverse changes from current or point-of-reference conditions. The second

approach focuses on the degree to which each alternative would restore prediversion conditions, addressing which alternatives would minimize cumulative impacts. To assist this assessment, Tables S-3 and S-4 tabulate the occurrence of significant physical environmental impacts, as well as resource utilization impacts, for each alternative relative to the point of reference and the prediversion condition, respectively.

As required by CEQA, economic effects of the alternatives are not considered directly in identifying the environmentally superior alternative. Economic effects have been used, however, to help evaluate the significance of physical environmental changes.

Environmentally Superior Alternative Relative to the Point of Reference

Based on assessment of unmitigable impacts (Table S-3), the 6,383.5-Ft Alternative appears to be the environmentally superior alternative, and it comes closest to satisfying preliminary DFG recommendations developed to optimize fishery conditions as described previously. For this project the no-action alternative, which is the No-Restriction Alternative, is not the environmentally superior alternative; it would entail substantial losses of many environmental resources.

Higher lake level alternatives cause significant losses of tufa towers (both toppling and inundation) and complete loss of sand tufa, as well as significant losses of wildlife value as shoreline habitats are inundated. At even higher levels, the potential for significant channel erosion along the tributary streams would also materialize.

Other impacts are associated with lower lake levels. The 6,377-Ft Alternative would result in reductions in gull nesting and water bird food supply during extended drought and in insufficiently frequent high streamflows during snowmelt for optimum riparian restoration and maintenance. At the lower lake level of the 6,372-Ft Alternative, these impacts would commonly occur, and additional stream channel incision would be expected.

Environmentally Superior Alternative Relative to Prediversion Conditions

Based on an assessment of unmitigable cumulative impacts relative to prediversion conditions (Table S-4), the 6,390-Ft Alternative appears to be the environmentally superior alternative, although this judgment cannot be conclusively drawn.

The 6,390-Ft Alternative would offer substantially less lake-fringing aquatic habitats to migrating ducks than the higher 6,410-Ft Alternative (although extensive habitat restoration might provide major compensation). The 6,410-Ft Alternative, however, would result in high streamflows damaging to tributary fisheries that may be too high to be effectively mitigated. The 6,390-Ft Alternative would result in flows closer to the optimum flows for fisheries embodied in DFG's preliminary recommendations described previously.

Of the lower lake level alternatives, the 6,383.5-Ft Alternative would entail significant occurrence of dust storms and a significant reduction in brine shrimp productivity (which does not appear to significantly affect foraging water birds). The losses of lake-fringing aquatic habitats would be greater than for the 6,390-Ft Alternative. Under even lower lake levels, these effects would be more intense and additional impacts would occur (Table S-4).

Considering All Effects on Key Resources

The SWRCB will balance public trust values with the need for Los Angeles' water supply by weighing all the resources and impacts involved. Both project effects and cumulative effects will be considered for both physical environmental resources and resource utilization. Balancing may ascribe different weights to different resources and impacts, based on information in the EIR and subsequent hearing testimony.

Some of the resource areas expected to be considered key are:

- fish productivity in the diverted streams,
- lake invertebrate productivity and water bird food supply,
- gull nesting,
- riparian habitat maintenance and restoration,
- dust storms,
- tufa persistence and visibility,
- recreation use levels, and
- Los Angeles water supply.

Significant impacts in these areas for each alternative, considering either project effects or cumulative effects as appropriate, are shown on Figure S-2. This form of comparison reveals an alternative or range of alternatives that may provide an appropriate balance, and the impact tradeoffs implicit in making that decision. For the resource topics shown in Figure S-2, the 6,383.5-Ft Alternative appears to be optimum among the alternatives evaluated. Even at this level, extensive dust storms violating state and federal air quality standards would continue to occur, although less frequently and over considerably smaller area than occur currently. On the other hand, LADWP would need to participate in additional water reclamation and conservation programs to avoid a significant cost increase under this alternative, and additional restoration efforts to prevent adverse effects of high streamflows on fisheries would be required. At higher lake level alternatives, losses of tufa would be significant, and at lower lake level alternatives, dust storms would become more intense, frequent, and widespread and biological impacts would begin to materialize.

These observations are consistent with the USFS's comprehensive management plan for the Mono Basin National Forest Scenic Area, which recommended a lake management regime corresponding to the 6,383.5-Ft Alternative.

In economic terms, the 6,383.5-Ft and 6,490-Ft Alternatives offer substantial net benefits; a much smaller net benefit would accrue from the 6,377-Ft Alternative. Other alternatives would entail net economic losses.

Other Conclusions

Mono Lake Candidacy for Designation as an Outstanding National Resource Water

Mono Lake meets federal criteria for nomination as an Outstanding National Resource Water, as defined in the Clean Water Act. Actual designation would be made by the SWRCB or the Lahontan Regional Water Quality Control Board if either agency determines that Mono Lake is an outstanding national resource of exceptional recreational or ecological significance. Adoption of a minimum target lake level of about 6,380 feet would be consistent with such designation.

Irreversible Environmental Changes

The major irreversible effect of lake level lowering is the downcutting of tributary streams near the lake (incision), resulting in loss of wetland and riparian habitat directly through erosion and indirectly through lowering of the water table. Riparian losses caused by stream dewatering are reversible, although decades or centuries would be required for natural restoration.

Riparian habitat losses along the lower reaches of Rush and Lee Vining Creeks have been substantial since diversions began, both in terms of acreage and wildlife habitat value. By the point of reference, 156 acres of woody riparian vegetation were lost. This trend would continue under the No-Restriction Alternative, but under all other alternatives, natural restoration initiated by rewatering would continue. In this report, it is estimated that about one-half of the riparian losses might be restored by stream rewatering and that one-half has been irreversibly lost through stream incision. The other alternatives differ little in this regard; higher lake level alternatives create more riparian habitat because of higher streamflows but lose a corresponding acreage through lake inundation.

Growth-Inducing Impact

All the alternatives would provide reduced water supply for the City of Los Angeles compared to the No-Restriction Alternative, which would continue historical export levels. Thus, none of these other alternatives would have a growth-inducing impact. With higher lake level alternatives and correspondingly reduced water exports, the city would have to develop alternative sources of water and power; growth in the Los Angeles urban area would tend to be limited rather than induced. Under the No-Restriction Alternative, however, further growth in the area would be encouraged in the southern California area.

Short-Term Uses and the Maintenance and Enhancement of Long-Term Productivity

All the competing uses for waters from Mono Basin entail long-term, productive, beneficial uses. The issue is therefore inapplicable.

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