Testimony of Thomas A. Strekal
Before State Water Resources Control Board At Hearing Regarding
Water Right Applications 31487 and 31488 by US Bureau of Reclamation
Change Petition 5169 by Washoe County Water Conservation District,
Change Petition 9247 by Truckee Meadows Water Authority,
Change Petition 15673 by US Bureau of Reclamation
Change Petition 18006 by US Bureau of Reclamation

I. Biography

My name is Thomas A. Strekal. I have a Bachelor of Science (Biology) degree and a Master of Science (Aquatic Biology) degree from Bucknell University. I have been employed as a professional Biologist for 37 consecutive years. I worked for the Pennsylvania Department of Environmental Resources as an Aquatic Biologist/Water Pollution Biologist from 1973-1979. Since 1979, I have worked for various bureaus of the U.S. Department of the Interior in various capacities: 1979-1982, Biologist with U.S. Fish & Wildlife Service's Office of Endangered Species in Washington, DC; 1982-1991, Fishery Biologist with the Bureau of Reclamation in Carson City, NV; 1991, Fish & Wildlife Biologist with the U.S. Fish and Wildlife Service in Reno, Nevada; and, since 1991, Fish & Wildlife Biologist with the Bureau of Indian Affairs (BIA) in Carson City, NV.

The focus of my work during my 28 years in western Nevada has been water and biological resources of the Truckee, Carson, and Walker River basins, and I have, in part: assisted in development, environmental analysis, and rulemaking of 1988 and 1997 Operating Criteria and Procedures for the Newlands Project (OCAP); assisted in negotiation, development, and environmental analysis of the Truckee River Water Quality Settlement Agreement; served as Cui-ui Recovery Team leader; served as a member of the Lahontan Cutthroat Trout Recovery Implementation Team; served as Federal Team leader for Walker River basin negotiation; and been involved in development of the Truckee River Operating Agreement and many other provisions of Public Law 101-618 since its enactment. Specific to TROA, I was BIA's technical representative on the Federal team negotiating TROA and Federal Team Leader for preparation of the TROA Environmental Impact Statement / Environmental Impact Report (EIS/EIR) and Record of Decision.

II. Purpose of Testimony

My testimony provides an overview of the negotiation process for the Truckee River Operating Agreement (TROA) and the National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) process to develop the Final Environmental Impact Statement/Environmental (FEIS/EIR) and Record of Decision (ROD) for TROA and results of environmental analysis which relate, in part, to satisfying public trust.

III. Development of the Truckee River Operating Agreement

In November 1990, the Congress enacted the "Truckee-Carson-Pyramid Lake Water Rights Settlement Act," Title II of Pub. L. No. 101-618, 104 Stat. 3294 (Act), to provide authorization for measures which, if carried out, would resolve many long-standing disputes and Federal litigation among multiple parties (including the States of Nevada and California) concerning the rights to the use of the waters of the Lake Tahoe basin and the Truckee and Carson Rivers in Nevada and California. Exhibit App./Pet. Joint-16.

Section 205(a)(1) of the Act states "The Secretary shall negotiate an operating agreement (hereafter "Operating Agreement") with the State of Nevada and the State of California, after consultation with such other parties as may be designated by the Secretary, the State of Nevada or the State of California."

In December 1990, the Department of the Interior (Interior) conducted an organizational meeting to discuss its obligations and responsibilities – timing, direction, organization, coordination, and cooperation – for implementing the Act, including negotiation of TROA. That meeting was widely announced and well attended; a number of agencies, governments, and organizations, including the five mandatory signatories to TROA – United States, California, Nevada, Pyramid Lake Paiute Tribe of Indians, and Sierra Pacific Power Company (now Truckee Meadows Water Authority) – were represented.

The Preliminary Settlement Agreement as Modified by the Ratification Agreement (PSA) is a 1989 agreement between Sierra Pacific Power Company (Sierra Pacific) and the Pyramid Lake Paiute Tribe of Indians (Pyramid Tribe) to change the operation of Federal reservoirs and Sierra Pacific's exercise of its Truckee River water rights to (1) improve spawning conditions for the Pyramid Lake fishes and (2) provide additional municipal and industrial (M&I) water for the Reno-Sparks metropolitan area (Truckee Meadows) during drought situations. Exhibit App./Pet. Joint-15. Section 29(f) of PSA states that PSA cannot take effect until an operating agreement (i.e., TROA) has been executed by at least the United States, the Pyramid Tribe, and Sierra Pacific. With the requirement of section 205(a)(2)(C) of P.L. 101-618 that TROA carry out the terms, conditions, and contingencies of PSA, the Pyramid Tribe and TMWA became mandatory signatory parties for TROA to become effective. In February 1991, Interior conducted the first of many working meetings to draft a management plan for the preparation of TROA over the next 3-4 years. In addition to the five mandatory signatories, eight other parties (for a total of 13) – Washoe County, Nevada; City of Reno, Nevada; City of Sparks, Nevada; WCWCD; Town of Fernley, Nevada; Churchill County, Nevada; Fallon Paiute-Shoshone Tribes; and TCID – were identified and invited to participate in the negotiations. Invitations were also extended to other interested parties to attend as observers. The 13 negotiators were:

- United States (Departments of the Interior and Justice)
- Nevada
- California
- Pyramid Tribe
- Sierra Pacific
- Washoe County, Nevada
- Reno, Nevada
- Sparks, Nevada

- Washoe County Water Conservation District
- Fernley, Nevada
- Truckee-Carson Irrigation District (TCID)
- Churchill County, Nevada
- Fallon Paiute-Shoshone Tribes

TCID, Churchill County, and the Fallon Paiute-Shoshone Tribe did not continue to participate in the negotiations.

Since 1991, Carson-Truckee Water Conservancy District, Truckee Donner Public Utility District, Sierra Valley Water Company, and North Tahoe Public Utility District joined the negotiations. This group of 14 parties negotiated the terms of TROA.

TROA negotiations officially commenced in March 1991. Numerous public plenary meetings, negotiating sessions, technical and legal team meetings, drafting sessions, and editing team meetings were conducted in the 17 years prior to signing TROA since the first meeting, and a number of public and private interest groups from Nevada and California participated in the negotiation process as observers and commentators.

During the negotiation process, several scenarios for increasing operational flexibility and efficiency of existing reservoirs in the Lake Tahoe and Truckee River basins were developed, evaluated, and submitted to the negotiators for consideration. The negotiators considered the scenarios during negotiations and incorporated those elements which were acceptable into the developing agreement and rejected those not acceptable.

In May 1996, the parties completed a Draft Agreement, and Interior and California jointly issued a draft EIS/EIR (DEIS/EIR) for that Draft Agreement in February 1998.

Negotiations resumed in 1999 to address a number of new issues that had emerged since 1996. This second set of negotiations, completed in October 2003, resulted in another Draft Agreement that was substantially different from the May 1996 version. As a result, a decision was made to prepare an environmental analysis of the October 2003 Draft Agreement. A revised DEIS/EIR was released in August 2004. The Final EIS/EIR, published in January 2008, evaluated the Negotiated Agreement, which contained many of the same provisions as the October 2003 Draft Agreement. Exhibit SWRCB-7. The Record of Decision was signed by the Secretary on September 5, 2008. Exhibit App./Pet. Joint-17.

TROA was signed during a public ceremony in Reno, NV on September 6, 2008. Fifteen parties are signatory to TROA: United States of America; State of California; State of Nevada; Truckee Meadows Water Authority; Pyramid Lake Paiute Tribe of Indians; Washoe County Water Conservation District; City of Reno; City of Sparks; City of Fernley; Washoe County; Sierra Valley Water Company; Truckee Donner Public Utility District; North Tahoe Public Utility District; Carson-Truckee Water Conservancy District; and Placer County Water Agency.

The Bureau of Reclamation published TROA as a Final Rule (43 CFR Part 419) in the Federal Register (73 FR 74031) on December 5, 2008, in compliance with P.L. 101-618. TROA provides that it cannot be implemented until the last of the conditions set forth in Sections 12.A.4(a) through 12.A.4(g) of TROA is satisfied.

IV. Water Quality, Environment, and Public Trust Resources

The FEIS/EIR evaluated three alternatives: no action, Local Water Supply Alternative (LWSA) and TROA. As part of that evaluation, the following resources were addressed in the FEIS/EIR. Exhibit SWRBC-7.

A. Surface Water – The total amount of water stored under TROA is greater than under No Action, LWSA, or current conditions – primarily in Stampede, Boca, and Prosser Creek Reservoirs – because of credit water operations. Flow in the lower Truckee River and discharge to Pyramid Lake were also greater under TROA because of the requirement for conversion of certain excess M&I credit waters (stored by upstream senior Truckee River water rights owners) to fish credit water and storage of water quality credit water, both of which would be dedicated and released for use in the lower Truckee River and Pyramid Lake; these waters would be in addition to the lower river discharge available under current conditions or the other action alternatives.

In dry hydrologic conditions, flows in Independence Creek, Little Truckee River, and Prosser Creek downstream from the reservoirs were appreciably greater under TROA than under the other alternatives, and summer and early fall flows in the Truckee River through and downstream from Truckee Meadows were greater than under current conditions.

The Newlands Project water supply is discussed in Part V of my testimony.

In California, M&I demands in the Lake Tahoe and Truckee River basins were met under current conditions and the alternatives, as was M&I demand in the Lake Tahoe basin in Nevada. In the minimum supply year, Truckee Meadows M&I supply was greater under TROA than under No Action or LWSA; M&I water supply during drought periods was greater under TROA than under No Action and LWSA. In the minimum supply year, Fernley M&I supply was the same under all alternatives. Lower Truckee River agricultural and M&I demands were met under all alternatives and all hydrologic conditions.

B. Groundwater – Effects on the shallow aquifer in Truckee Meadows and establishment of a new groundwater equilibrium would vary among the alternatives and depend upon many local factors, such as the amount of groundwater pumping, recharge, and the localized groundwater flow gradients. Seepage loss from the Truckee Canal would be similar under all alternatives. With criteria established for new well construction in California under TROA, assumed limitations on groundwater use, and development of surface water

drought supplies, TROA likely would have the least effect on future groundwater resources among the alternatives.

C. Water Quality – Truckee River water quality was better under TROA than under No Action or current conditions because releases of water stored pursuant to TROA would, to the extent possible, be timed to enhance stream flows during periods of low flow. As a result, under TROA Nevada temperature standards were met much more often in representative dry years and somewhat more often in median years; dissolved oxygen standards were met much more often in representative dry years and about as often in median years. While on rare occasions in median years water quality could be worse under TROA, the total water quality benefits realized in representative dry years under TROA outweighed these effects.

D. Sedimentation and Erosion – Shoreline erosion at Lake Tahoe would not increase under No Action, LWSA, or TROA; water quality would not be degraded; and the maximum elevation at which the lake is currently operated would not be exceeded. Erosion and sediment transport in the Truckee River and its tributaries would not be significantly affected under any of the alternatives. The higher water surface elevation of Pyramid Lake expected under TROA could improve the connectivity between the Truckee River and Pyramid Lake for fish migration and spawning; connectivity could be adversely affected under No Action and LWSA.

E. Biological Resources – Conditions for fish in the Truckee River and its tributaries, as well as in Prosser Creek, Stampede, and Boca Reservoirs, would be more beneficial under TROA than under LWSA, No Action, or current conditions. There was potential for enhancing riparian vegetation along some reaches of the Truckee River under TROA compared to LWSA or No Action in median hydrologic conditions and along all mainstem and tributary reaches in dry and extremely dry hydrologic conditions. TROA would enhance riparian habitat along a few mainstem and tributary reaches in wet and median hydrologic conditions and along most mainstem reaches in dry and extremely dry hydrologic conditions, when compared to LWSA, No Action, or current conditions. As Mr. Caicco will later testify, habitat conditions would be better for Pyramid Lake fishes than under the alternatives because 1) the average annual discharge into Pyramid Lake would be greater and 2) more reservoir storage would be available to supplement spawning flows for cui-ui and LCT in the lower Truckee River. No significant, long-term effect would occur to Tahoe yellow cress, a Federal candidate species under ESA, under any of the alternatives. Other special status species would benefit from the riparian enhancement that TROA would provide.

Section 205(a)(9) of the Act specifically provides that "[t]he Secretary may not become a party to the Operating Agreement if the Secretary determines that the effects of such action, together with cumulative effects, are likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of any designated critical habitat of such

species." Interior elected to use the RDEIS/EIR for TROA as the Biological Assessment to facilitate ESA consultation. Informal Section 7 consultation pursuant to the ESA and the requirements of section 205(a)(9) concluded that the proposed action, approval of TROA, is not likely to adversely affect endangered cui-ui and threatened LCT and, in fact, is likely to directly or indirectly benefit both species. Satisfaction of the requirements of ESA is documented initially in Attachment H of the FEIS/EIR with a memorandum from FWS concluding that TROA is "not likely to adversely affect cui-ui, LCT, and bald eagle" and "formal consultation is not required." That initial determination was supplemented by a memorandum dated June 16, 2008, which notes the delisting of bald eagle, reaffirms the initial conclusion that TROA would not likely adversely affect cui-ui and LCT, and further discusses specific elements of TROA which FWS concludes are likely to directly or indirectly benefit cui-ui and/or LCT.

F. Recreation – Visitation at Prosser Creek, Stampede, and Boca Reservoirs generally would be greater under TROA than under No Action and current conditions because annual average water elevations would be higher under TROA, thus enhancing recreational access and ensuring a higher quality recreational experience. Effects on boat ramp usability would be the same in all hydrologic conditions at Pyramid Lake and at Prosser Creek and Lahontan Reservoirs under TROA, LWSA, and No Action. Effects on flows for fly fishing, rafting, and kayaking would be minimal under No Action, LWSA, and TROA, and none of the effects on flows for anglers under any of the alternatives is considered significant.

G. Economic Environment – Economic model results show that recreation-based employment and income are about the same under all alternatives. The benefits resulting from the transfer of agricultural water rights to meet future demands for M&I, water quality, recreation, and fish and wildlife habitat should be greater than the projected reduction in employment and income associated with the reduction of water rights for agricultural production in Truckee Meadows and the Truckee Division of the Newlands Project. Under TROA, both hydroelectric power generation and gross revenues for Truckee River run-of-the-river hydroelectric powerplants were slightly less than under No Action and current conditions in wet and median hydrologic conditions, and slightly greater than under No Action and current conditions in dry hydrologic conditions; any reduction in gross revenue would require compensation. For Lahontan Dam hydroelectric powerplants, both generation and gross revenues under TROA were about the same as under No Action and about 3 percent less than under current conditions in all hydrologic conditions. Associated capital, operation, and maintenance costs for groundwater production and recharge were least under TROA, followed by No Action, and LWSA.

H. Social Environment – Overall, effects on the social environment indicators of population, urbanization of Truckee Meadows, and air quality would be the same under TROA, No Action, and LWSA. In the future, under all alternatives, the

study area is projected to experience a steadily increasing population, expansion of M&I water use, and decline in agricultural-based living.

I. Cultural Resources – Compared to other alternatives, cultural resources at lakes and reservoirs would be affected slightly less under TROA and those along streams would be affected slightly more under TROA. Overall, though, projected effects on cultural resources under TROA would be minimal and depend on location.

J. Indian Trust Resources and Aesthetic Resources – For the Pyramid Tribe, flow in the lower Truckee River and discharge to Pyramid Lake would be greater under TROA as explained above under Surface Water. With increased flow and the capacity to manage such water, TROA would assist in improving water quality in the lower river; enhance the elevation of Pyramid Lake; enhance the riparian canopy along and assist in stabilizing the lower river; enhance recreational opportunities at Pyramid Lake; enhance spawning opportunities for cui-ui; and enhance river habitat for Pyramid Lake fishes. For Reno-Sparks Indian Colony, implementation of any of the action alternatives would have no effect on the exercise of Truckee River water rights. For the Fallon Paiute-Shoshone Tribe, the Carson Division water supply is minimally affected under any of the action alternatives and the Fallon Tribe would receive a full water supply as frequently under TROA as under No Action; diversion of Truckee River water to the Newlands Project is governed by OCAP, not TROA. For the Washoe Tribe, TROA would not affect flows of the Carson River upstream of Lahontan Reservoir and would have no effect on land and water resources in the Lake Tahoe basin. Also, implementation of TROA would allow disbursement to the Pyramid Tribe of funds contained in the Pyramid Lake Paiute Economic Development Fund (as provided in section 208(a)(3) of the Act).

K. Growth-Inducing Impacts – Although sources of water or mechanisms to meet water demands might differ among the alternatives, population growth and resulting water demand were projected to be the same under No Action, LWSA, and TROA. The projected changes were within the parameters of planning for growth within the study area, including land use, transportation, housing, schools, public services, environmental resources, and infrastructure planning; implementation of TROA would not be growth inducing.

L. Environmental Justice – Because neither LWSA nor TROA involves facility construction, population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts, neither alternative would have adverse human health or environmental effects on minority or low-income populations during the period of analysis.

V. Newlands Project Operations

The water supply for the Newlands Project is obtained from the Carson and Truckee Rivers. The Carson River is the primary water source for the Carson Division; the Truckee River is only a supplemental source of water for the Carson Division. Truckee River water is diverted into the Truckee Canal at Derby Diversion Dam for irrigation in the Truckee Division and for delivery to Lahontan Reservoir. Water stored in Lahontan Reservoir is released primarily to satisfy the exercise of water rights in the Carson Division. Newlands Project Operating Criteria and Procedures (OCAP) have been promulgated to meet Newlands Project irrigation requirements consistent with the *Orr Ditch* and *Alpine* decrees while minimizing use of Truckee River water and maximizing use of Carson River water. See testimony of Jeffrey D. Rieker.

Diversion of Truckee River water to satisfy a portion of the future Newlands Project water demand will continue to be regulated by OCAP. The potential effects of TROA on the Newlands Project were measured by comparing the quantity of Truckee River water available for diversion at Derby Diversion Dam and resulting Truckee Canal inflow to Lahontan Reservoir and Lahontan Reservoir storage and releases to the lower Carson River under the various alternatives.

There was little difference in effects on the Newlands Project between TROA and the other alternatives. Slightly less water was available for diversion at Derby Dam under TROA because the holders of upstream senior Truckee River water rights would be able to exercise their water rights more effectively by diverting the consumptive use portion of their previously-unused water to storage as credit water. Effects on Newlands Project water use would not be discernible on a long-term basis because average annual releases from Lahontan Reservoir are similar under TROA (303,360 acre-feet/year) and No Action (303,400 acre-feet/year), a difference of 40 acre-feet/year. Our analysis showed that Carson Division shortages[1] occurred in the same 9 years under No Action and TROA and were of similar magnitude: in one of the years, the shortage under TROA was approximately 7,000 acre-feet (less than 3 percent of annual demand) greater than under No Action; in another year, the shortage under No Action was approximately 5,000 acre-feet (less than 2 percent of annual demand) greater than under TROA; the shortage values were nearly identical in the other 7 years. In addition, when comparing the demand for the Carson Division in a minimum supply year for the LWSA and TROA, TROA meets the demand in a greater percentage of the years. Exhibit SWRCB-7, Table 3.9, page 3-104.

For the above reasons agriculture, wetlands uses, and Indian trust resources on Fallon Indian Reservation would not be affected. Local groundwater resources would be affected primarily to the extent of and in proportion to differences in the amount of Truckee River water diverted to the Truckee Canal (assumed maximum capacity of 900 cfs) to flow to Lahontan Reservoir. Differences in canal flow would affect slightly the

[1] A shortage is an amount of water less than a full supply during an irrigation season for the Newlands Project. The Newlands Project water supply consists of the total of Carson River discharge and supplemental Truckee River water available for diversion via the Truckee Canal to Lahontan Reservoir from the end of one irrigation season to the end of the following irrigation season. The term shortage does not and is not intended to indicate that any irrigation entitlement for any water right owner served by TCID for that season has not been satisfied.

amount of seepage to the shallow aquifer adjacent to the canal and also Lahontan Reservoir releases to the Carson Division. The minor reductions in Truckee Canal discharge and Lahontan Reservoir releases for irrigation on the Carson Division would likely have no measurable effect on groundwater resources on the Newlands Project.

For three representative hydrologic conditions – wet, median, and dry – Lahontan Reservoir elevation and quality of the recreation experience and releases to serve water rights on the Newlands Project were similar for the three alternatives, so there would be little or no economic impact from TROA compared to No Action. For biological resources, TROA would have little or no effect on fish in Lahontan Reservoir relative to minimum pool maintenance or spawning habitat. TROA would have no measurable effects on Newlands Project operations, summer recreation at Lahontan Reservoir, or on local groundwater recharge linked to the availability of Truckee Canal discharge or Lahontan Reservoir releases.

For TCID's Lahontan Dam hydroelectric powerplants, analysis shows that hydroelectric power generation and gross revenues were slightly less under TROA than under No Action (less than 1 percent), which should not significantly affect the profitability of TCID's hydroelectric power operations or the regional economy.

The FEIS/EIR includes analysis of a broad range of potential Newlands credit water operations that allow for the retention in Stampede Reservoir of potential diversions to Lahontan Reservoir prior to the end of June (in order to avoid exceeding the OCAP end-of-June storage target for Lahontan Reservoir) for release as necessary through the remainder of the irrigation season. Implementation of Newlands credit water operations in any given year would be discretionary. To the extent that such credit water operations would be implemented, the amount of carryover water in Lahontan Reservoir (i.e., water in excess of monthly storage targets after June) in certain years could be reduced. A shortage would not occur in a year when Newlands credit water storage would be implemented, and the effect on reservoir storage in a subsequent year would depend on the amount and timing of available runoff in that year to achieve monthly storage targets, as currently happens under OCAP. The potential benefits of Newlands credit water operations include greater seasonal storage in Truckee River reservoirs, greater Truckee River flows during the summer to enhance water quality as well as riverine and riparian habitat, and increased flow in the lower Truckee River for Pyramid Lake fishes and inflow to Pyramid Lake.