EXHIBIT

TMWA 2-0

Written Testimony of
Janet Carson Phillips

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STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

In the Matter of: Water Right Applications 31487 and 31488 filed by the United States Bureau of Reclamation, and Petitions to Change License 3723 (Application 5169) of Washoe County Water Conservation District, License 4196 (Application 9247) of Truckee Meadows Water Authority, Permit 11605 (Application 15673) and License 10180 (Application 18006) of the United States Bureau of Reclamation	Hearing Officers: Charles Hoppin and Tam Doduc **WRITTEN TESTIMONY OF JANET CARSON PHILLIPS ON BEHALF OF TRUCKEE MEADOWS WATER AUTHORITY** Date: July 21-23; 28-29, 2010 Time: 9:00 a.m. Dept: 1001 I Street, Second Floor Coastal Hearing Room Sacramento, California

TMWA EX. 2-0

I. EDUCATION AND EXPERIENCE

1. My name is Janet Phillips, although prior to 2007 I was known as Janet Carson. TMWA Ex. 2-1 is a true and correct copy of my professional resume. As noted thereon, I graduated from Stanford University with a degree in Economics in 1974. I went on to earn a Masters degree in Water Resources Engineering at UCLA in 1979. I am a registered civil engineer in the State of Nevada (#7830).

2. After graduate school, I held three positions in the water resources field: Deputy Federal Water Master for the Truckee and Carson Rivers (1982-1985), Water Resource Planner for the Carson River (1986-1988) and Water Resources Supervisor, Manager and Director for Sierra Pacific Power Company ("Sierra") (1989-2001). Sierra Pacific Power Company was both an electric utility and water purveyor, and was successor to The Truckee River General Electric Company. The water division was briefly called "WestPac" during the early 1990's, and became the Truckee Meadows Water Authority ("TMWA") in 2001. From 2001 to present, I have taught a professional field study course on the Truckee River for the Nevada Water Resources Association, and also founded and preside over the Tahoe-Pyramid Bikeway, a nonprofit organization building a bike/pedestrian trail along the length of the Truckee River.

II. PURPOSE OF MY TESTIMONY

3. The purpose of my testimony is to provide a bridge in understanding between the historic operation of the Truckee River and its reservoirs and the future operation under the Truckee River Operating Agreement ("TROA"), particularly in providing a municipal water supply during droughts. I will also describe some examples of how select TROA operations will work, and what corresponding changes are needed in reservoir licenses or permits to implement them.

III. FAMILIARITY WITH THE TRUCKEE-TAHOE-CARSON WATERSHEDS

4. My professional experience has provided me an in-depth knowledge of the region's rivers from both an administrative standpoint and also from a practical operating perspective. When I was Deputy Water Master, both under Claude Dukes and later Garry Stone, I was involved with daily operations of the Truckee River and its reservoirs based on its decrees, agreements and flood regulations. This involved daily evaluation of such things as whether or not Floriston Rates were being met, and if not, which reservoir should be used to fulfill them; which reservoir was in priority to store water; how much of its annual allowance had an Orr Ditch Decree right received; and many other practical real-time decisions.

5. As water resource planner for the Upper Carson River, I was principal author of *Carson River Basin Study, February 1, 1987, by Kennedy/Jenks/Chilton for the Legislative Committee to Study the Carson River*, in which I analyzed water supply and demand in the Carson City-Minden-Gardnerville area. As in Reno-Sparks, the future municipal water supply of the Upper Carson basin will include conversion of irrigation water rights to municipal use, with backup drought storage necessary to provide water service in dry years. As part of the study, I evaluated the yield and feasibility of proposed reservoir sites in the Upper Carson basin, since the only significant storage on the Carson River is Lahontan Reservoir, many miles downstream of the capital population center. Among the reservoir sites I evaluated at that time was Watasheamu, a then authorized, but never built, component of the 1956 Washoe Project, which authorized Stampede and Prosser Reservoirs.

6. During my years at Sierra I was responsible for the Water Resource Plan, which examines first and foremost how our community would be served water during future droughts. Since the normal flow in the Truckee River is sufficient to meet community needs under our comparatively senior water rights, the heart of the analysis was where to build water storage for subnormal years. The plan identified up to 18 possible reservoirs, most located in Nevada,

before the advent of the Settlement Act created the opportunity to use existing vacant storage space in upstream reservoirs instead of building new dams.

7. Other duties at Sierra included many negotiating efforts, not only as a member of Sierra's TROA team, but also other water operations and water rights issues. The defining event of my 1989-2001 tenure at Sierra was the worst drought of record, 1988-1994, during which time I was heavily involved with strategic management of our dwindling water reserves in Donner and Independence Lakes, and seeking ways to make those reserves last as long as possible, not knowing when the drought would end.

IV. HISTORIC AND MODERN TRUCKEE RIVER OPERATIONS

8. As a result of my employment at the U.S. Water Master's office and at Sierra, I became aware of the history of the Truckee River that led to most provisions of its governing documents. At the turn of the 20th Century, the Truckee River had only one significant dam—the Truckee River General Electric Company's Lake Tahoe Dam—which had been used for floating logs downriver to various mills, and also to regulate flow in the river at a uniform rate to produce hydro-mechanical power at those mills. In the early 1900's two important changes came to the river: the construction of five run-of-the-river hydroelectric plants by Truckee River General Electric Company and the initiation of the Newlands Project by the United States, with its attendant need for an adjudicated water supply and water storage in Lake Tahoe. The United States brought an action to condemn Tahoe Dam, and after a decade of litigation and negotiation, The Truckee River General Electric Decree (often called the 1915 Decree) (App./Pet. Joint-2) was finalized. It (a) resulted in an easement being granted to the United States to operate Tahoe Dam and (b) incorporated uniform rates of flow in the Truckee River near Floriston in the amount of 500 cfs from March 1 to September 30 and 400 cfs the remainder of the year. This flow regime, imposed nearly 100 years ago, still generally controls the Truckee River in 2010.

9. Because the Truckee River General Electric case only addressed Tahoe Dam, and the United States still did not have an adjudicated water supply for the Newlands Project, in 1913 it filed another lawsuit, *United States vs Orr Water Ditch Company*, to adjudicate the water rights of the Truckee River so that water released from Lake Tahoe for the Newlands Project and water right holders below Derby Dam would not be over-diverted by intervening users between Farad and Derby Dam. Unlike the 1915 Decree case, which involved only a few parties, the Orr Ditch case included substantially all water right holders on the Truckee River downstream of Floriston. It adjudicated all diversions as to quantity, place and manner of use. Eventually, the United States, Washoe County Water Conservation District, Sierra, and Truckee-Carson Irrigation District and others entered into the Truckee River Agreement in 1935 (App./Pet. Joint-6). Pursuant to the Truckee River Agreement: (a) Washoe County Water Conservation District agreed to build Boca Reservoir on the Little Truckee River to help support Floriston Rates; (b) the level of Lake Tahoe was required to be maintained below a maximum elevation of 6229.1 feet (Lake Tahoe datum) if possible; and (c) Floriston Rates were elaborated to create lesser flows when Lake Tahoe's water level was low. The Truckee River Agreement, which was incorporated into the Orr Ditch Decree (App./Pet. Joint-7), became effective in 1944, and controls Tahoe and Boca operations today.

10. The history and effect of these documents may be clarified by some real-time operating examples of how they actually work, the rigidity of the system operation today, and why changes are needed in modern times.

Example 1: On an average June day, the flow in the river is 500 cfs, as required by current rules governing the river (Floriston Rates). Say a farmer in Reno in the 1950's would have diverted 10 acre-feet of water to irrigate his land on a day like this, in accordance with his Orr Ditch water right quantity and priority. However, his water right has been converted under Nevada law to municipal use, and the water utility doesn't need that 10 acre-

feet on this particular day, but anticipates needing it later in the year, or next year if a drought develops. Under current operating rules, there can be no reduction in the river's flow at Farad to retain the consumptive use portion of this water right in upstream storage, so the water utility is forced to watch it flow by its point of diversion, or build a new reservoir in the Truckee Meadows to store it. Under the changes already approved by the Nevada State Engineer (TMWA Ex. 1-5), it will be possible to "credit store" the consumptive use portion of this water right, while allowing the non-consumptive portion to flow downstream as it would have historically. (The consumptive use portion is 6.25 acre-feet in this example, according to the Nevada State Engineer.) In TROA, this operation is one means to "establish credit water" (*TROA Section 7.A.3*).

Example 2: In a severe drought year, suppose the water utility needed to withdraw a large volume of water from its private reserves in Independence Lake. However, the intended release schedule, designed to meet customer demands, would cause uneven instream flows in the Little Truckee River, a valuable fish habitat. More uniform instream flows and improved reservoir levels could be achieved if the utility could exchange its Independence Lake water for an equivalent volume of water in another reservoir, and make releases from there. The Change Petitions would facilitate this type of transaction by making the place and purposes of use and points of downstream rediversion broad and identical among the system reservoirs.

Example 3: The current regulation of the river is very rigid in the use of each reservoir for specific purposes, as illustrated by the operation of Stampede Reservoir for fish spawning in the Lower Truckee River during 1981. In an April 17, 1981, Bureau of Reclamation press release, it was reported that the U.S. Fish & Wildlife Service desired 90,000 acre-feet of water in the river at Nixon for fish spawning from mid-April to mid-June. A copy of that press release is TMWA Ex. 2-2. The only source of water for this purpose was

Stampede, and this volume of water, if delivered at a uniform flow rate, would require approximately 750 cfs to be released from Stampede. This large flow is triple the 250 cfs maximum flow in the Little Truckee River now recommended under proposed "California Guidelines", and could have been avoided by some water exchanges with one or more other reservoirs.

V. SIERRA/TMWA OBJECTIVES IN TROA

11. Sierra's primary objective in negotiating, first, the 1989 Preliminary Settlement Agreement ("PSA") with the Pyramid Lake Paiute Tribe, and then TROA, was to firm up its drought water supply. The manner in which TMWA and its predecessor Sierra provide a dependable water supply has changed significantly since the mid-1900's. At the time of the Orr Ditch Decree, the worst drought of record had been the period 1928-35, which was lengthy but not as acutely dry as years that were to come, as shown by the Lake Tahoe water level graph which is TMWA Ex. 2-3. Reno-Sparks' water supply was provided by the Decree's "40 cfs right" plus Donner and Independence Lakes and Hunter Creek. By the 1950's, Sierra had begun acquiring irrigation water rights and converting them to municipal use, but not much focus was given to drought storage, because the authorization and construction of Stampede Dam in 1969 held promise of a substantial increase in municipal water storage. The expectation of both the Carson-Truckee Water Conservancy District, the agency created to contract for Stampede storage, and Sierra was that Stampede Reservoir would be operated for municipal purposes.

12. In the late 1970's, the current system for routinely adding irrigation water rights to the municipal water supply was established by the Nevada State Engineer and the Public Utilities Commission, following the drought of 1976-77. The acquisition of irrigation water rights by developers for dedication to the utility only provides a full supply of water during normal or near-normal water years, and falls short during drought years. By foregoing the use

of some of those dedicated water rights during normal years, and storing the consumptive use fraction of them in upstream or local reservoirs, Sierra's customers would have a larger buffer against future droughts that could be as bad, or worse, than any experienced before.

13. TMWA Ex. 2-4 includes Reports of Licensee for the Years 1955 through 1978 from the State Board's files for License 4196. These Reports demonstrate a regular release of water from Independence Lake during those times. As a result of the 1976-1977 drought and the 1982 ruling that Stampede Reservoir was not to be available for municipal supply, the operation of Independence Lake shifted from regular large releases of water from the lake during both wet and dry years to placing more emphasis on keeping the Independence water in reserve against drought conditions. This more conservative approach to managing Independence Lake paid off in the 1988-94 drought, as discussed below.

14. The PSA and some of the cornerstones of TROA were negotiated during the worst drought of record: 1988-94. Therefore it is important to understand Sierra's experience during that period in order to realize the critical need for its Independence Lake water and the ability to re-store it in other reservoirs, as well as the capture and carry-over of the consumptive use portion of former irrigation rights in upstream reservoirs.

15. During a normal or near-normal water year, the flow of the Truckee River is sufficient to satisfy all of Sierra's water rights, and provide a full water supply to the Reno-Sparks community. However, in some very dry years, Lake Tahoe's water level is so low that no flow comes out of the lake, and releases from Boca comprise most of the flow at Farad. When Boca becomes depleted, the flow in the Truckee River at Farad will abruptly drop off to a relative trickle. The specific date on which the river flow drops off will determine how much private stored water will be needed to get through the rest of the summer and fall. During the 1990's drought, this date fell as early as June 5 (in 1992) to as late as September 26 (in 1993). On that day, and for the rest of the summer and fall, Sierra had three potential supplemental

water sources: groundwater pumping, Donner Lake, and Independence Lake. Although Sierra increased its well pumping capacity during the drought, there was still a need for additional surface water during the critical 2-4 month summer period; and Independence Lake became Sierra's last-and-best drought supply, with over half the reservoir's water—9,000 acre-feet—used in 1992. My colleagues and I spent sleepless nights wondering if there would be enough water for the next year, if it continued to be dry. To analyze this question, we used graphs of Independence drawdown, under different "what-if" scenarios as the basis for water supply management from 1989 to 1994. TMWA Ex. 2-5 is a sample of one such drawdown graph, showing that in June 1992, if the drought did not ease and extraordinary measures were not taken, the community would run short of water in 1993.

16. Another drought operation used Sierra's half of Donner Lake water. Since there is no downstream reservoir to re-capture released Donner water, as is possible for Independence, the method of saving Donner water was by releasing it for Floriston Rates and then reducing the flow from Boca correspondingly, to create a quantity of water in Boca that would not otherwise have been retained there and labeling it as Sierra's private stored water.

17. Both of the re-capture operations described above were accomplished by Sierra through a contract with the Washoe County Water Conservation District ("District") dated July 18, 1988, a true copy of which is provided as TMWA Ex. 2-6. By letter dated May 10, 1990, the District notified Sierra of its desire to terminate the storage agreement, under which 2,300 acre-feet of Independence water was then in Boca. The purpose of the notice was to give the District time to review the purpose, intent and operating criteria of the contract, as well as storage charges. On October 11, 1991, the Bureau of Reclamation responded to the District's May, 1990 letter to it requesting review of the storage contracts for Boca. True and correct copies of these letters are provided in TMWA Exs. 2-7 and 2-8, respectively. The Bureau questioned the legality of that agreement, and suggested that any private water in Boca should

be removed. This position, being asserted in the throes of the worst drought of record, created a storage crisis for Sierra, which added impetus to the completion of TROA and several intermediate measures.

18. In the early 1980's, at about the same time the courts determined that Stampede Reservoir would not be available as a source of municipal water supply, Sierra prepared its first formal Water Resource Plan, pursuant to order of the Nevada Public Service Commission. Besides contractual storage in Boca, there were other measures Sierra evaluated as drought reserves for its customers. The first Plan (1985) had four various reservoir options, and by the issuance of the 1994 edition, there were 18 different reservoir options, all but one of them located in Nevada. The analyses during the 1980's and early 1990's contemplated storing the consumptive use portion of any extra water rights that had been collected from developers, plus any unused Donner or Independence water, in whichever reservoir proved most viable. Once PL 101-618 had been passed in 1990, Sierra, by its own evaluation and by order of the Nevada Public Service Commission, put its greatest effort into the TROA storage option.

19. Included in PL 101-618 is a paragraph (Section 205(b)(3)) authorizing "interim storage" for Sierra in federal reservoirs until TROA takes effect. The Act recognized that our region was in a severe drought and full implementation of TROA might take several years, necessitating a separate provision for short-term storage. As it turned out, the Interim Storage Agreement ("ISA") (TMWA Ex. 1-4) was not consummated until 1994, necessitating several stop-gap agreements to be signed:

- In March 1993, there was a "Contract for Exchange of Non-Project Water for Project Water" between Prosser and Independence of up to 5,000 acre-feet in a 5-year contract commonly referred to at Sierra as the "borrowing agreement", since the water from Prosser was to be used during the drought and repaid with private water after the drought ended. This contract provided a fallback water supply for Sierra, but the

water was never actually used. A true and correct copy of that Contract is TMWA Ex. 2-9.

- In October 1993, a one-year storage agreement under the Drought Relief Act was entered into by Sierra, Bureau of Reclamation, and the Washoe County Water Conservation District. It provided a temporary window of time to complete the "interim storage" allowed under PL 101-618 and allowed up to 3,050 acre-feet of Donner and Independence water to be stored in Boca. That Contract was amended on October 8, 1994. A true and correct copy of that Contract and the amendment thereto is TMWA Ex. 2-10.
- On June 29, 1994 the Interim Storage Agreement ("ISA") authorized under PL 101-618 was finally signed, providing Sierra with a 25-year contract to store its water in Boca or Stampede under the California water rights of each. The quantity stored could be up to 5,000 acre-feet on September 1, with additional amounts allowed at other times. The ISA mirrors some provisions of TROA in that spill sequence and evaporation losses are prescribed, and excess water is turned over to the Pyramid Lake fishery. A copy of the ISA is provided in TMWA Ex. 1-4.

Paradoxically, after the Interim Storage Agreement was signed in 1994, the drought ended in 1995. A significant benefit to Sierra, and now TMWA, from the implementation of TROA is knowing what its drought storage is, rather than relying on assorted stop-gap agreements such as those used in the 1990's drought.

VI. INDEPENDENCE AND OTHER CHANGE PETITIONS

20. The petition to change Independence Reservoir's license is not only needed to implement TROA, it is also needed to reflect conditions that already exist:

- The current place of use of Independence water needs to be expanded to match TMWA's current water service area, and

- Points of re-diversion need to include two added water treatment plant intakes in Reno (Chalk Bluff and Glendale).

Overall TROA implementation requires a consolidated set of reservoir permit/license changes, due to TROA's many mechanisms for flexible and coordinated water operations, but one basic water right need is the same in all of them: that all owners of water who exchange water in one reservoir for water in another reservoir have the ability to legally use the water received as if it was still the same water from the original reservoir. This basic need gives rise to a common place of use and purposes of use and downstream points of re-diversion in all the reservoir change petitions for TROA.

21. In the case of the three reservoirs on the Little Truckee River, another change is sought: to add new points of diversion among them. The intended result is that if environmental goals make it desirable to either bypass water which is in priority to store upstream to a reservoir farther downstream, or the reverse, those initial diversions to storage can be made without losing the original priority and character of the water storage right involved.

22. With a few examples of operations allowed by TROA, the logic of the Change Petitions is illustrated in the following table, which can be explained as follows:

- Column 1 provides a brief narrative description of a typical water operation that might be taken under TROA, and a likely reason for it.
- Column 2 cites the section of TROA that allows the operation.

  Column 3 describes the change requested in the Change Petitions that will facilitate the operation.

EXAMPLES OF TROA ACTIONS AND
CALIFORNIA WATER RIGHT CHANGES INDICATED

ACTION NARRATIVE	TROA SECTION	SWRCB ACTION NEEDED
TMWA releases water previously stored in Independence under its license to be recaptured in Boca or Stampede for TMWA's purposes.	7.B.2	• Add Boca & Stampede as new points of rediversion and redistribution to Independence license.
To enhance instream flows in Independence Creek, TMWA lets inflow which it is in priority to store, pass through Independence Reservoir for initial capture in Boca or Stampede, in accordance with Independence license priority.	8.N.3	• Add new points of diversion (Boca & Stampede) to Independence license; limit to actual flow available for storage in Independence Creek.
TMWA emergency water in Stampede (previously stored) is swapped with fish credit water in Prosser in order to maintain a higher lake level at Prosser.	5.B.6 (c)(5)	• Add municipal places and purposes of use and points of rediversion to Prosser license. • (Since Stampede already has fishery places and purposes of use, no change is needed in its permit.)
TMWA trades its previously stored water in Independence with California's previously stored water in Stampede Reservoir, to avoid a large drawdown of Independence.	5.B.7 (h)	• Add fishery places and purposes of use to Independence license. • Add municipal places and purposes of use and points of rediversion to Stampede Permit
On April 15 of a non-drought year, a portion of TMWA's water in Stampede previously released from Independence Lake is converted to Fish Credit Water.	7.B.4 (e)	• Since Stampede already has fishery places and purposes of use, no change is needed in its permit.
In order to increase flows in the Truckee River at Tahoe City, additional Floriston Rate water is released to flow to Pyramid Lake in lieu of a Stampede release, resulting in Floriston Rate water in Stampede.	8.S.1 (b)	• Add common places and purposes of use and points of rediversion to the Stampede permit. • (No action needs to be taken at Tahoe.)

VII. CONCLUSION

23. The complex and litigious history of the Truckee River made it necessary to develop lengthy rules among the parties on how to exchange water from multiple reservoirs for

various places and purposes of use, which probably would not be necessary in a single-owner reservoir network. The end result, among other things, will be much-needed storage flexibility for all signatory parties.