Testimony of

Robert L. Reiter

Background and Qualifications

1. I am the court-appointed Watermaster for the San Bernardino Valley Municipal Water District ("Muni"). I am a registered civil engineer and a registered control system engineer. A true and correct copy of my resume has been submitted as Muni/Western Exhibit 3-2.

2. I serve as the Muni-nominated and court-appointed representative on the five-member Santa Ana River Watermaster committee, a position I have held since 1985. I am the Chairman/Treasurer of the Watermaster. The Watermaster committee is appointed by the Superior Court of Orange County to administer and enforce the provisions of the Stipulated Judgment entered in *Orange County Water District v. City of Chino et al.*, Case No. 117628 ("*Orange County* Judgment") and the instructions and subsequent orders of the Court. A true and correct copy of the *Orange County* Judgment has been submitted as Applicants' Joint Exhibit 2-1. A true and correct copy of the most recent Santa Ana River Watermaster Annual Report has been submitted as part of Applicants' Joint Exhibit 2-21.

3. I also serve as Muni's court-appointed representative on the two-member Western-San Bernardino Watermaster committee established under the Stipulated Judgment entered in *Western Municipal Water District of Riverside County* et al. *v. East San Bernardino County Water District* et al., Superior Court of Riverside County, Case No. 78426 ("*Western* Judgment"). A true and correct copy of the *Western* Judgment has been submitted as Applicants' Joint Exhibit 2-7. A true and correct copy of the most recent Western-San Bernardino Watermaster Annual Report has been submitted as part of Applicants' Joint Exhibit 2-22.

Overview of the Santa Ana River System

Hydrology

4. The Santa Ana River watershed is depicted on the map submitted as Muni/Western Exhibit 3-3. The watershed comprises approximately 2,450 square miles from the Pacific Ocean to the San Gabriel and San Bernardino Mountains. Features of the Santa Ana River System that are particularly relevant to this proceeding include Prado Dam, Riverside Narrows and Seven Oaks Dam. Muni/Western Exhibit 5-6 is a map of the chief water resources features of the Santa Ana River System.

5. During storm periods, the Santa Ana River flows from Mount San Gorgonio in the San Bernardino Mountains to the Pacific Ocean at Newport Beach, a distance of over 75 miles. The Santa Ana River starts in San Bernardino County and flows through Riverside County and Orange County prior to ending at the Pacific Ocean. The Santa Ana River flows through Muni, Western Municipal Water District of Riverside County ("Western") and Orange County Water District ("OCWD") on its way to the Ocean.

6. During most years the Santa Ana River has little or no surface flow from the Cuttle Weir below Seven Oaks Dam to just above the point at which the Santa Ana River crosses the San Bernardino/Riverside County line. From that point there is continuous surface flow to the OCWD diversion points in Orange County. These flows are largely composed of the discharges from several waste water treatment plants located in San Bernardino and Riverside Counties. The Santa Ana River is often dry between OCWD's last diversion point and the Pacific Ocean.

7. The Santa Ana River watershed below the San Bernardino and San Gabriel Mountains has been partitioned into two areas: the Upper Area includes the lands upstream of Prado Dam at the head of the lower Santa Ana Canyon in the Santa Ana Mountains and; the Lower Area which includes the lands below Prado Dam to the Pacific Ocean. The Upper Area lies mostly within San Bernardino and Riverside Counties and is also largely within Muni, Western and Inland Empire Utilities Agency ("IEUA," formerly Chino Basin Municipal Water District). The Lower Area lies within Orange County and OCWD.

Moving from east to west, the major Upper Area tributaries joining the Santa Ana River from the north out of the San Bernardino and San Gabriel Mountains include Bear Creek, Plunge Creek, Warm Creek, East Twin Creek, Cajon Creek, Lytle Creek, Cucamonga Creek and San Antonio Creek. Again moving from east to west, the major Upper Area tributaries joining from the south include Mill Creek, San Timoteo Creek, and Temescal Creek. In the lower area, Santiago Creek joins the Santa Ana River from the south. The major geologic features along the Santa Ana River after it leaves the San Bernardino Mountains are Bunker Hill Dike at the southwest corner of the San Bernardino Basin in San Bernardino County, Riverside Narrows at the lower end of Riverside Basin in Riverside County and the narrows below Prado Dam in Riverside County.

8. The completion of Seven Oaks Dam located in the upper Santa Ana Canyon just upstream of the point at which the Santa Ana River leaves the San Bernardino Mountains and enters the San Bernardino Valley added a second major man-made flood control structure. The first major man-made structure for flood control was Prado Dam. It was built at the downstream end of Prado Basin just above the beginning of the Lower Santa Ana Canyon. The other major dam on the Santa Ana River system is Big Bear Dam, which is located on its tributary Bear Creek in the San Bernardino Mountains.

9. The United States Geological Survey ("USGS") is the primary agency which continuously monitors flow quantities and quality (Total Dissolved Solids or TDS only) on the Santa Ana River. The Santa Ana River Watermaster relies on the USGS records when making its annual determinations of the components of flow under the Orange County Judgment. USGS streamflow gages are located on the Santa Ana River itself near Mentone (upper end of San Bernardino Basin) and at "E" Street (lower end of San Bernardino Basin) in San Bernardino County; Riverside Narrows (lower end of Riverside Basin) and Prado (below Prado Dam) in Riverside County; and 5th Street in Santa Ana in Orange County. Major tributaries are also gaged. Quality (TDS only) is also continuously monitored at the Riverside Narrows and Prado gaging locations.

10. Historically, under average or below-average conditions, rainfall and melting snow generate flows which are easily contained within the Santa Ana River channel. It is the

isolated periods of high rainfall and/or sudden melting of heavy snowpack which cause the flood events for which Prado and Seven Oaks dams were built.

The 1969 Judgments

11. The civil action that culminated in the *Orange County* Judgment was commenced on October 18, 1963 by OCWD. The complaint sought an adjudication of water rights against substantially all water users (in excess of 2,500 named and served) in the area tributary to Prado Dam in the Santa Ana River Watershed. Thirteen cross-complaints were subsequently filed in the period of February 22 to March 22, 1968, by which the adjudication of rights was extended to substantially all water users (more than 1,500 named and served) within the Santa Ana River Watershed downstream from Prado Dam. In total, the litigation involved more than 4,000 parties and the water supply of an entire stream system covering more than 2,450 square miles and reaching into four counties.

12. The *Orange County* Judgment was approved for entry by Judge John P. McMurray on April 17, 1969, pursuant to stipulation of the four major parties to the litigation: OCWD, Muni, Western, and Chino Basin Municipal Water District (now IEUA). Judge McMurray, who also presided over the *Western* litigation, supervised the terms of the two judgments so as to ensure that the two judgments would create a coordinated plan for the further development and use of the water resources of the Santa Ana River System. The benefits of that approach, which has secured to all parties certain minimum rights to the waters of the Santa Ana River System and which allows all parties the opportunity to develop new supplies, can be seen in the fact that none of the applicants in this proceeding objects to any of the other applications. In fact, it is my understanding that, consistent with the terms and intent of the *Orange County* Judgment, all of the applicants support each others' applications.

13. The *Orange County* Judgment provides a basis for division of the water resources of the Santa Ana River Watershed between the "Upper Area" (as defined in the *Orange County Judgment*, the area of the watershed which lies upstream from Prado Dam) and the "Lower Area" (the area of the watershed which lies downstream from Prado Dam). All other parties to the litigation were dismissed subject to their stipulations "… *to cooperate*

and support the inter-basin water quality and water management objectives of the physical solution and this Judgment."

14. In this way, the *Orange County* Judgment divided the areas involved in the litigation into an Upper Area comprised of Muni, Western and IEUA and a Lower Area comprised of OCWD. The Upper Area parties are required to guarantee certain annual Base Flow quantities and qualities (as determined annually by the Watermaster in accordance with the provisions of the Judgment) in the Santa Ana River ("SAR") at Riverside Narrows and at Prado. The Muni Riverside Narrows obligation is 15,250 acre-feet per year. The joint obligation of Western and IEUA at Prado is 42,000 acre-feet per year. The Base Flow at Riverside Narrows flows on to Prado and provides a portion of the 42,000 acre-foot obligation at that location each year. Credit is given each year at the respective locations, Riverside Narrows or Prado, for Base Flow delivered in excess of the quantity required. The Base Flow quantities at each location are adjusted based upon the quality (total dissolved solids only) of the water pursuant to a formula given in the Judgment. Any cumulative credits remain on the books of account until used to offset any subsequent debits, or until otherwise disposed of by the Parties at their respective obligation locations. However, without regard to any cumulative credits, during any given water year, in no case may less than 12,250 acre-feet of Base Flow, unadjusted for quality, be delivered at Riverside Narrows each year, nor less than 34,000 acre-feet, unadjusted for quality, be delivered at Prado.

15. Muni has contracts with the Cities of San Bernardino and Colton under which each city must provide certain minimum wastewater discharges (16,000 ac-ft/yr for San Bernardino and 2,450 ac-ft/yr for Colton) to the SAR. Western has contracts with Riverside and Corona under which each city must provide certain minimum wastewater discharges (15,250 ac-ft/yr for Riverside and 1,625 ac-ft/yr for Corona) to the SAR. IEUA is the wastewater agency for their service area and entered into an agreement with Western through which it obligated itself to deliver 16,875 ac-ft/yr to the SAR. Given that the quantities of wastewater being discharged by San Bernardino and Colton are now delivered much closer to Riverside Narrows, significantly reducing percolation and evapotransporation losses, the total annual commitment for wastewater discharges is

52,200 ac-ft. Therefore, these wastewater discharges are sufficient – in and of themselves – to meet the Upper Area's minimum Base Flow requirements.

16. The *Orange County* Judgment expressly provides that, so long as the minimum flow guarantees at Prado are honored, the water interests above Prado are free to develop conservation measures by which the usable flow of the stream can be captured for the benefit of those upstream interests. Paragraph 5(a) of the Judgment provides in part as follows: "Insofar as Lower Area claimants are concerned, Upper Area water users and other entities may engage in unlimited water conservation activities, including spreading, impounding and other methods, in the area above Prado Reservoir, so long as Lower Area receives the water to which it is entitled under the Judgment and there is compliance with all of its provisions." The Muni/Western applications represent an exercise of this right to engage in unlimited water conservation activities.

17. The *Orange County* Judgment did not purport to divide the waters of the SAR above Prado Dam among the various upstream claimants as all parties deferred in a stipulation to the overlying municipal agencies. The *Western* Judgment, however, did address that question, insofar as the San Bernardino Basin Area is concerned. The *Western* Judgment was also approved for entry by Judge McMurray pursuant to stipulation on April 17, 1969.

18. Parties to the *Western* Judgment were Muni, acting on behalf of the dismissed parties within its service area (including San Bernardino Valley Water Conservation District, East Valley Water District, North Fork Water Company, City of Redlands, Bear Valley Mutual Water Company, and others) and plaintiffs Western, City of Riverside, Riverside Highland Water Company, Agua Mansa and Meeks & Daley Water Companies, and the Regents of the University of California. Under the continuing jurisdiction of the Court over this Judgment, Western normally appears in its representative capacity on behalf of the other plaintiffs. Western appears as a joint applicant in this proceeding in its representative capacity on behalf of the other plaintiffs under the *Western* Judgment.

19. The *Western* Judgment, like the *Orange County* Judgment, contemplates "new conservation" in the San Bernardino Basin Area (paragraphs IV(i), VI(b)1., VI(b)2., and

VI(c)). The *Western* Judgment divides the right to such new conservation between water users within Muni (72.05%) and the six plaintiffs represented in this proceeding by Western (27.95%).

20. The applications of Muni/Western before the State Water Resources Control Board are consistent with the intent of the *Orange County* and *Western* Judgments with regard to new opportunities to capture and use SAR flows in the Upper Area within their respective service areas. Muni and Western have entered into a memorandum of understanding with other water users in the SAR Watershed stating that Muni and Western recognize that these proceedings must be consistent with the terms of the *Orange County* and *Western* Judgments. A true and correct copy of that memorandum of understanding is attached as Applicants' Joint Exhibit 2-2. As noted in the testimony of Randy Van Gelder (Muni/Western Exhibit 1-1), as a result of the *Orange County* and *Western* Judgments, there is now no controversy among the applicants for water from the Santa Ana River in these proceedings.

Water Conservation at Seven Oaks Dam

Studies of Water Conservation

21. Seven Oaks Dam is located above Prado Dam on the Santa Ana River, approximately one mile upstream of the mouth of the upper Santa Ana Canyon at the confluence of the Santa Ana River and Government Canyon. This 550-foot-high earth-rockfill dam provides downstream flood protection by capturing the flows from a drainage area of 177 square miles. The dam impounds the flow of the Santa Ana River for flood control purposes from October until the end of February. During the rest of the year, the excess storage space behind the dam provides an excellent opportunity to augment local water supply by conserving runoff slowed by the dam. Under a conservation program, water would be impounded during the flood transition period from the beginning of March to the end of May. During the dry months of June through September, the stored water would be released to users downstream to meet their diversion and recharge requirements. In addition, the water right applications submitted by Muni/Western seek authorization for the direct diversion of water at several diversion points in the vicinity of the Dam.

22. Seven Oaks Dam was not originally a part of the Corps of Engineers' Santa Ana Mainstem Project. At one time the Corps planned to raise Prado Dam to provide for the upstream storage volume needed in the case of a 100-year storm event in the Upper Area. When that plan proved impractical, the Corps proposed a smaller enlargement for Prado in conjunction with a dam in the eastern portion of the San Bernardino Valley. This 250 foot high, 2 ½ mile long dam was to be named Mentone Dam. This proposed dam was not to have a water conservation element. Moreover, it was to be built over prime groundwater recharge areas in that portion of the Valley. Many of the existing and potential future spreading areas would have been silted over with the first significant flood event captured by the Mentone Dam. The silt layer would most probably have been voluminous enough so as to be impractical to remove. Muni and other water agencies in the East Valley area were successful in convincing Congress to mandate that the Corps study other alternatives. Muni suggested the Corps study three dams which had been studied by the California State Engineer in a 1928 report. One of those locations was the approximate location of Seven Oaks Dam today. After studying the proposed alternatives, the Corps decided to abandon the Mentone Dam location and move upstream to the Seven Oaks Dam site.

23. Congress provided the Corps with funding to conduct a reconnaissance study regarding the possibility of seasonal water conservation storage at Seven Oaks Dam and at Prado Dam. It should be noted that Prado was already being used to a limited extent for water conservation in accordance with OCWD's right to do so as defined in the *Orange County* Judgment. The reconnaissance study found that water conservation should be possible at Seven Oaks Dam and that "further detailed study was needed."

24. In 1997, the Corps completed that next study of the feasibility of water conservation at Seven Oaks Dam. The Corps analyzed the local water districts' service area water demands and supplies, and found that even with a reduction in water usage, the existing local supplies for these service areas will need to be supplemented to meet the area's future demand. The Corps' study evaluated four alternative water conservation scenarios designed to help meet these local water needs. All of the alternatives included comprehensive analysis of the impacts of water conservation on dam safety and

operations for flood control, as well as the environmental effects and economic benefits of a water conservation program.

25. To determine the potential water conservation yield at Seven Oaks, the Corps obtained raw data from a USGS report which memorialized the daily flow of the Santa Ana River at Mentone. Focusing on the 1914-15 to 1990-91 period of record, the Corps determined the conservation yield by adding the daily values at the end of May for each year. The Corps then divided that number by the total number of years to obtain an average annual inflow of 24,000 acre-feet. Using that base inflow, the computer simulation estimated that the dam could make approximately 12,950 acre-feet per year of conserved water available to downstream users. A true and correct copy of the Corps' Feasibility Report is attached hereto as Muni/Western Exhibit 3-4.

26. The Corps is currently initiating a supplemental study to the 1997 feasibility study which will lead to a record of decision. This supplement is necessary due to the listing of additional endangered species which may affect the flood control operation of Seven Oaks Dam. Muni has entered into an agreement with the Local Sponsors (Orange County Flood Control District, Riverside County Flood Control & Water Conservation District and San Bernardino County Flood Control District) to fund the non-federal share of this study. I understand that the Board of Directors of Western will consider approval of that agreement during its meeting on April 18, 2007.

Proposed Water Conservation Operations

27. The Draft EIR (Muni/Western Exhibit 4-3) fully describes the manner in which Muni/Western propose to engage in water conservation operations at Seven Oaks. Nonetheless, there are several points that are important to note about Muni/Western's proposed water conservation operations.

28. First, water conservation operations involving construction of facilities in the inundation area upstream of Seven Oaks Dam or involving the reoperation of Seven Oaks Dam can only occur once the Corps of Engineers fully analyzes the effects of those activities (including, for instance, compliance with the National Environmental Policy Act and the

Federal Endangered Species Act) and then approves such reoperation in a Record of Decision and a revised Water Control Manual. The purpose of the supplemental study described above is to compile the information necessary for the Corps to make this decision. Muni/Western believe that, based on the results from the 1997 feasibility study and the analysis included in the Draft and Final EIRs, the supplemental study will show that water conservation can occur without interfering with flood control operations; that determination, however, ultimately belongs to the Corps.

29. Second, Muni/Western can conserve substantial quantities of water without using Seven Oaks Dam storage, *per se*. The very presence of Seven Oaks Dam regulates flows in the Santa Ana River and so, with the construction of a 1,500 cfs pipeline intake at the Cuttle Weir, Muni/Western would be able to divert the same quantity of water as with the use of conservation storage at Seven Oaks.

30. Third, even though the Draft and Final EIRs (Muni/Western Exhibits 4-3 and 4-4) demonstrate that Muni/Western could divert the same quantity of water with or without conservation storage, there are substantial benefits to Muni/Western from the use of conservation storage at Seven Oaks Dam. For instance, as shown in the testimony of Jack Safely (Muni/Western Exhibit 7-1), during a repeat of WY 1969 hydrology, Muni/Western would use almost 45,000 af of conservation storage in Seven Oaks. Muni/Western would rather use that storage rather than conveying the water to other locations because leaving the water in Seven Oaks provides Muni/Western with substantial flexibility to deliver water to virtually any location within our combined service areas. Storage in other locations (above or below ground) would provide less flexibility for deliveries and subsequent use.

31. Fourth, the use of Seven Oaks Dam for water conservation provides substantial flexibility for Muni/Western to match deliveries of water with demands and so provides reliability. The modeling contained in the Draft and Final EIRs, which is consistent with the modeling performed for other major water resources projects, uses 20-20 hindsight to determine where water would have gone during a repetition of historical hydrology. Real-time operations, though, do not have the luxury of time to determine the best place

to deliver water during a wet year. For this reason, the flexibility provided by Seven Oaks is particularly important to real-time operations, because it gives the operators of the system additional time to make decisions on water deliveries.

32. Fifth, although access to Seven Oaks Dam is not essential to the Muni/Western proposed water conservation operations, it certainly would be a significant benefit. Because of these benefits, Muni/Western intend to pursue the acquisition of rights to access at Seven Oaks, preferably by amicable agreement with the Local Sponsors, but if necessary by other means.

33. Muni/Western understand that the Local Sponsors are parties to a Local Cooperation Agreement ("LCA") with the Department of the Army dated December 13, 1989, which establishes the rights and responsibilities of the Local Sponsors and the Department of the Army regarding the Santa Ana River Mainstem, Including Santiago Creek, California Flood Control Project ("Project"). A true and correct copy of the LCA is attached as Muni/Western Exhibit 2-4. Seven Oaks Dam and Reservoir are elements of the Project, as described in the LCA. In general, the Local Sponsors are the owners and operators of Seven Oaks Dam, and are responsible for ensuring that any water conservation at Seven Oaks Dam does not unreasonably interfere with the Dam's primary use as a flood control facility. Seven Oaks Dam is presently operated as a flood control facility and operation of Seven Oaks Dam is governed by the Water Control Manual prepared by the Corps.

34. As mentioned above, Muni is a signatory to the "Agreement Among Santa Ana River Mainstem Project Local Sponsors and San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County Funding a Seven Oaks Dam Water Conservation Feasibility Report" (hereinafter "Funding Agreement") a true and correct copy of which is attached as Muni/Western Exhibit 3-5. Under the Funding Agreement, Muni will provide 72.05 percent share of the "Study Costs," as defined in the Funding Agreement, relating to the updating of the 1997 Feasibility Report prepared by the Corps and associated analyses, studies, reports and documents prepared by the Corps with the support and assistance of the Local Sponsors, regarding the feasibility of water conservation at Seven Oaks Dam.

35. The Board of Directors of Muni recently adopted Resolution No. 931, a true and correct copy of which is attached hereto as Muni/Western Exhibit 3-6. This resolution directs Muni staff and legal counsel to seek, in the first instance, to secure rights of access, for purposes of the activities contemplated in Applications 31165 and 31370, by negotiation and agreement. Based on the past history of a strong and cooperative working relationship between Muni/Western and the Local Sponsors, I am confident that Muni/Western will be able to negotiate a mutually acceptable access agreement with the Local Sponsors. In the unlikely event that Muni/Western cannot reach agreement with the Local Sponsors regarding access rights, Resolution No. 931 directs Muni to proceed with acquisition of access rights pursuant to its statutory power of eminent domain.

36. As noted above, the use of Seven Oaks would be advantageous for water conservation but is not essential. Pursuant to the settlement agreement among Muni/Western and the San Bernardino Valley Water Conservation District (Applicants' Joint Exhibit 2-10) and the easement agreement that, in part, implements that settlement, a true and correct copy of which is attached hereto as Muni/Western Exhibit 3-7), Muni/Western already have access to the Cuttle Weir, which is the main point of diversion necessary to divert water from the Santa Ana River.

37. Muni agrees to accept the following permit term to be included in all water right permits granted by the SWRCB pursuant to the Applications 31165 and 31370:

> This permit shall not be construed as conferring upon permittees any right of access over lands not owned by the permittees. To the extent that rights of access over lands not owned by the permittees are required in connection with the exercise of rights granted under this permit, permittees shall obtain such rights of access through agreement or otherwise.

38. Sixth, it is important to recognize the way in which the "flashy" Santa Ana River hydrology should be reflected in any permits granted to Muni/Western. The analysis contained in the Draft and Final EIRs shows that very wet years, like WY 1969 or WY 1980, are infrequent. As shown in Muni/Western Exhibit 5-83, Muni/Western would only be able to capture 100,000 af, or more, in four of the thirty-nine years of the hydrologic base period. Muni/Western would be able to capture about 200,000 af in only

one of the thirty-nine years of the hydrologic base period. Consequently, it would be entirely appropriate for the State Water Resources Control Board to include a 50-year period of development in any permits issued to Muni/Western. Fifty years reflects a reasonable time to build the necessary facilities and allows a reasonable period of time for there to be an extremely wet year, given the erratic hydrology of the Santa Ana River.

List of Exhibits

Muni/Western Ex. 3-1	Testimony of Robert L. Reiter
Muni/Western Ex. 3-2	Resume of Robert L. Reiter
Muni/Western Ex. 3-3	Map of Santa Ana River System
Muni/Western Ex. 3-4	Seven Oaks Dam Water Conservation Feasibility Report
Muni/Western Ex. 3-5	Funding Agreement with Local Sponsors
Muni/Western Ex. 3-6	Resolution 931
Muni/Western Ex. 3-7	Easement Agreement with San Bernardino Valley Water Conservation District