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ORANGE COUNTY WATER DISTRICT

STATE WATER RESOURCES CONTROL BOARD

OF THE STATE OF CALIFORNIA

In the Matter of State Water Resources Control Board Hearing on Water Rights Applications 31165 and 31370 of San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County; Application 31174 of Orange County Water District; Application 31369 of Chino Basin Watermaster; Application 31371 of San Bernardino Valley Water Conservation District; and Application 31372 and Waste Water Change Petition WW-0045 of the City of Riverside.	Application No. 31174 DIRECT TESTIMONY OF RICHARD ZEMBAL, ON BEHALF OF ORANGE COUNTY WATER DISTRICT FOR WATER RIGHTS APPLICATION 31174 Date: May 2, 2007 Time: 9:00 a.m. Location: Cal EPA Building Coastal Hearing Room

DECLARATION OF RICHARD ZEMBAL

I, Richard Zembal declare and state as follows:

1. I make this declaration as my direct testimony for the State Water Resources Control Board Hearing on Water Right Application 31174 of Orange County Water District (OCWD). This Declaration is exhibit OCWD 6-1. I am the Natural Resources Director for OCWD, a position I have held since June 2000. My duties include management of the natural resources of the Santa Ana River, as well as review and input of CEQA documents, such as OCWD's Recirculated Draft Program Environmental Impact Report issued in 2006, SCH # 2002081024, on which I provides a review and comment role.

2. I previously worked for the U.S. Fish and Wildlife Service (FWS) for 20 years and rose to the level of Deputy Field Supervisor. I ran the operations of the Carlsbad Field Office (CFO). I established multiple programs to do great things directly with resources and habitat. I was deeply involved with endangered species recovery and the establishment of management programs for listed species. I instituted multiple species planning in the CFO which led to the Habitat Conservation Programs of today, Western Riverside County's, for example. When I did leave the FWS I had many opportunities because of my experience and expertise with wetland ecology, endangered species, regulatory permits, and multi-species planning, and chose to go to the OCWD because of their nationally significant environmental program. OCWD was the one water agency I worked with at the FWS whose water revenues were returned in part to the environment. My resume is attached as Exhibit OCWD 6-2.

3. Congress and the FWS recognized OCWD's work in the Santa Ana River Watershed as nationally significant in 2003 with the FWS National Wetlands Conservation Award (Exhibits OCWD 6-3 and 6-4). This is the FWS' most prestigious environmental award. OCWD has received many additional awards in recognition of environmental accomplishments, including the 2001 Theodore Roosevelt Environmental Award. However, the most important aspect of the OCWD Natural Resources Program is the

unprecedented accomplishments with natural resources, as summarized below.

4. These accomplishments stem from the working philosophy that "Excellence in water management and stewardship of natural resources go hand in hand". This slogan can be found on the wall as one enters the OCWD Fountain Valley Office.

5. OCWD's staff and Board of Directors realize that maximizing water yield and quality can only be achieved with sound management and maximization of the river's natural resources. OCWD's environmental programs have been touted as national models and are exemplary on a national scale because of the vision and philosophy that drive them. Although some of the environmental contributions OCWD has made were originated by mitigation requirements (see Exhibit OCWD 6-5), the efforts would not have been successful except for the District's commitment to go beyond the requirements in pursuit of sustainable natural resources. OCWD operates in a way that ensures that on the way to the ground water basin, the river water grows and nurtures habitat and wildlife. In my unique position, I am expected to figure out how to maximize the yield and sustainability of the river's natural resources. Some of the OCWD Natural Resources activities are as follows.

6. OCWD owns about 2,150 acres of land in the Prado Basin. This acreage includes approximately 465 acres of constructed wetlands. The areas that became constructed wetlands were originally ponds developed and managed for waterfowl hunting. However, with the increases in nitrate on the Santa Ana River due to upstream treatment plant discharges and agricultural runoff, the OCWD converted the ponds to constructed wetlands to provide nitrate removal. Water diverted and passed through the wetland system can have as much as 100% of the nitrate removed. Spreading so much water and significantly increasing its retention time, has also created regionally significant habitat diversity and wildlife value. The wetlands are tantamount to oxbow wetlands that were an historic part of the river system but were largely lost when the floodplain was diminished. The wetlands accommodate species like white-faced ibis (*Plegadis chihi*) that are found in few other places in coastal southern California. The Prado Wetlands and environs are

regionally significant and widely known for their abundance and diversity of wildlife, particularly birds. Visitors come from all over the nation and the world to tour the wetlands and experience the wildlife.

7. The OCWD Board has set a goal of operating constructed wetlands above its diversion points on each of the tributaries that enter the Prado Basin in mid-river. The River Road Wetlands would treat the half of the low flow of the river that currently bypasses the Prado Wetlands. The feasibility of the River Road Wetlands and a separate Chino Creek Wetlands are currently under investigation. The proposed River Road Wetlands were designed specifically to provide 10 miles of riparian woodland/water interface, potential habitat for the willow flycatcher (*Empidonax traillii extimus*). These many hundreds of acres of diverse habitat will greatly benefit wildlife and significantly improve water quality. On Mill Creek, OCWD is partnering with the City of Ontario to evaluate the feasibility of a regional treatment wetland. The water quality benefits associated with the eventual operation of these wetlands will also greatly benefit native fishes, particularly the threatened Santa Ana sucker (*Catostomus santaanae*). Because the sucker feeds on algae, it will be greatly benefited by enhanced water clarity and light penetration in the canyon below Prado Dam (see Exhibit OCWD 6-6). The District was a founding member and has continued to participate and provide leadership to the Santa Ana Sucker Conservation Team (see below).

8. When I was a FWS Biologist, I rediscovered a small remnant population of endangered least Bell's vireos (*Vireo bellii pusillus*) in the Prado Basin. The population was so impacted by parasitism by brown-headed cowbirds (*Molothrus* ater) that it would not survive without management. However, neither the U.S. Army Corps of Engineers nor the FWS had the funding budgeted that could provide the management needed to prevent the extirpation of this imperiled population. Then, in 1988 and 1989 OCWD stepped up and funded a management plan for the endangered least Bell's vireo in the Prado Basin at a cost of $70,000 plus significant staff time. This was done proactively by the District in

order to partner with the regulators. Since then, OCWD has continued a management program and has recovered the vireo in the Prado Basin from just 21 territories in 1986 to 600 territories in 2005 (Exhibit OCWD 6-7). Because of the District's efforts, the Santa Ana River population of least Bell's vireos was not only saved from extirpation but headed toward significant recovery (Exhibit OCWD 6-8).

9. At one time considered common, the least Bell's vireo was widely distributed throughout the Central Valley and other low elevation riverine systems through southern California and Baja California, Mexico. However, by the mid-1900s habitat loss due to agricultural, urban, and commercial developments, flood control and river channelization projects, livestock grazing, and other activities had severely reduced the available habitat and the vireo was extirpated from much of its former range. Nest parasitism by brown-headed cowbirds greatly limited the vireos' reproductive output and in concert with habitat loss, vireo numbers plummeted. When the vireo was finally listed as endangered in 1980, there were only 300 pairs known to exist throughout the historic range.

10. Because there were so few of these endangered birds left in existence, the Regulatory Agencies were extremely cautious about issuing permits for construction or activities anywhere near streamside woodlands. Agencies whose routine activities took them into the river bottoms found themselves growing trees, hiring the services of field biologists, and generally going to a lot of trouble and expense to continue their usual activities. One of the entities hardest hit was the U.S. Marine Corps, Camp Pendleton. Most of the vireos still in existence were there on the Santa Margarita River because of its relative isolation and pristine nature. However, Camp Pendleton actively manages the lower river for groundwater production, relies on an airstrip in mid-river, and ran troop maneuvers through the riparian forests. They counteracted these activities by initiating one of the first major endangered species management efforts in southern California to shepherd the vireo, adding other species later. Consequently, since the very beginning of efforts for the newly listed vireo, Camp Pendleton held the premiere population, nurtured that

population, and has been the measuring rod. For a long time, no other site even came close to Pendleton's numbers or engendered the associated reverence. Thoughts of Camp Pendleton conjure visions of de facto wilderness in the midst of concentrated human development. The size of the vireo population on Camp Pendleton was only possible there; nowhere else left in southern California was wild or big enough to come close.

11. The OCWD's vireo management program began in 1986 when 21 territories and 19 pairs were documented. Nineteen nesting seasons later in 2004 there were 590 vireo territories found in the Prado Basin (Exhibit OCWD 6-9). The potential negative effects to listed birds in the Basin of water conservation and wetland operations had been compensated beyond reasonable expectation. The efforts in the basin (Exhibit OCWD 6-10) have been mirrored outside the basin throughout the watershed since 2000 by OCWD and its partners in the Santa Ana Watershed Association (SAWA) (Exhibit OCWD 6-11) and an additional 247 vireo territories were observed on the river and tributaries in 2004. What many considered impossible was achieved on the Santa Ana River. For the first time on record the Santa Ana River Watershed vireo population was the largest in existence in 2004 with 837 territories.

12. The expansion of the vireo population on the Santa Ana River was achieved by dedicated field staff adaptively managing natural resources. The significance of this achievement is that it happened on a river system that has been greatly altered by human activity and has been dramatically narrowed and heavily urbanized. It demonstrates that consistent wildlife management works for some species. It also illustrates the expertise and ability focused through OCWD's programs to steward endangered species in consort with water conservation and wetland operations. Based upon the successes of vireo management on the Santa Ana River and others, the FWS recommended in 2006 that the vireo should be down-listed from endangered to threatened status (Exhibit OCWD 6-12).

13. Some of the other milestones in the OCWD Natural Resources Program include the following. In March 1991, the endangered bird management program for the

Prado Basin was endowed with long term funding by OCWD ($450,000) to offset the effects of water conservation in the Basin. OCWD also contributed another $450,000 into a habitat restoration fund (which was later reimbursed by the County of Orange) and donated 124 acres of District land for habitat restoration. By 1995, these restored acres held the highest nesting density of vireos in the Basin. The restoration and management was achieved by the Nature Conservancy (TNC) through an agreement amongst the Army Corps of Engineers (Corps), U.S. Fish and Wildlife Service (Service), TNC, and OCWD.

14. In 1993, as part of an interim agreement to continue water conservation in the Basin, OCWD contributed another $100,000 to the restoration and management funds. Then, in 1995 a landmark agreement was signed by the Service, Corps, and OCWD (Exhibit OCWD 6-13) which included:

- A $1 million contribution to the conservation fund that was to be used to sustain restoration efforts throughout the watershed, beginning in the upper watershed, and focusing upon Arundo control.
- OCWD hired a full time permanent and an additional limited-term environmental specialist to assist with vireo management activities.
- The Service, Corps, and OCWD agreed to partner in the environmental management of the District's 2,400 acres and the Federal land in the Basin.

15. In 1997, the OCWD established the Santa Ana River Conservation Trust Fund in partnership with the Service and many other entities. The Trust Fund was to be a repository for money to manage watershed resources through the Santa Ana River Watershed Program over a long enough period of time to ensure resource recovery with the eventual control of Arundo. Arundo requires many years of monitoring and follow-up treatment to achieve control because of the massive root systems supporting new growth. The problems associated with abundant Arundo, and the costs and benefits of Arundo control have been summarized in many reports and presentations (Exhibit OCWD 6-14). OCWD administered the fund at no cost to the program and the 3 Resource Conservation

Districts (RCD) on the river do most of the work on the ground. The fund has taken in approximately $27 million since 1997 and about $10 million are still in the endowment for follow-up work. Approximately 3,000 acres of Arundo have been removed and endangered bird management is underway in most of the river's riparian forests. Funding to date has been approximately 50% grants and 50% mitigation money, mostly from large Federal projects on the river.

16. The Santa Ana River Watershed Program is an attempt to counter-balance human-induced changes on the river through control of invasive species, habitat restoration, wildlife management emphasizing endangered species, and public education and involvement. The Santa Ana Watershed Association (SAWA) (Exhibit OCWD 6-15) implements the program in partnership with Federal, state, county, and city agencies, many organizations and private interests. SAWA became a 501(c)(3), nonprofit organization in March 2003. The governing Board is comprised of one voting member from each of 5 agencies, the Orange County Water District, Inland Empire Resource Conservation District (RCD), Riverside-Corona RCD, San Jacinto RCD, and the US Army Corps of Engineers. The US Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game, and many other agencies participate in the monthly meetings, review work plans, and participate in plan formulation and report preparation (Exhibit OCWD 6-16). Until 2006, the Orange County Water District managed a trust fund for SAWA as part of the District's contribution toward the overall efforts. SAWA now runs an In-Lieu-Fee Mitigation Bank and continues to sustain its activities through grants and mitigation money. Total revenues in 2006 were $4,426,958 and expenditures were $1,088,351 (Exhibit OCWD 6-17).

17. As a result of the work accomplished thus far by the Watershed Program, the entire upper watershed has been cleared of Arundo and associated invasive plants and is under management to prevent re-infestation. This work is monitored by biologists to ensure that no damage occurs to native habitat or sensitive species. In the process the watershed

biologists are out there monitoring and managing wildlife over the entire watershed. SAWA employs 6 full-time biologists, up to 8 seasonal field assistants, and 2 employees who do follow-up control work at selected invasive removal sites. The weed control work is accomplished under contract for the first 5 – 10 years after which it is worked by SAWA employees. Two additional full-time biologists and one seasonal biologist are funded jointly by SAWA and OCWD, and OCWD funds a Habitat Restoration Manager and Natural Resources Director. Our partnerships involve dozens of other biologists from various agencies and firms who help survey the watershed during the endangered bird nesting season.

18. Since 1998, OCWD has participated and provided leadership in the efforts to conserve the Santa Ana Sucker through the Ad-Hoc Discussion Team. OCWD has contributed in excess of $20,000 annually to fund studies and restoration activities. OCWD staff, in partnership with Riverside-Corona RCD submitted a grant application that was just funded to restore native fishes to Sycamore Canyon, eventually perhaps, including suckers. Staff are currently removing exotic predators and working on agreements to augment water as needed to maintain the creek flow year-round. OCWD staff have begun working with the University of California, Riverside and Northwest Mosquito Abatement District to explore the feasibility of using native fishes for mosquito control in the Prado Basin. OCWD staff are drafting a document under the California Environmental Quality Act for restoration activities for the sucker in the river, including habitat creation and monitoring above River Road and in the Prado Basin.

19. Other on-going programs and activities of the OCWD include the annual Children's Drinking Water Festival, a 2-day educational program that is entirely environmentally focused, primarily for third and fourth graders and their teachers. In 2002, 7,000 youngsters and teachers attended at a cost of $100,000 plus many staff hours. The District sponsors wetland tours on the weekends and an educational program for Orange and Riverside County schools. Business water audits, wastewater recycling, and

hotel/motel programs reduce water and detergent use, improving water quality and reducing dependence on imported water. OCWD recently received Board approval to embark upon a $427 million project to build the treatment and conveyance systems needed to recycle wastewater into the groundwater supply. This Groundwater Replenishment System Project will reduce the need for imported water. OCWD sponsors youth fishing programs and scout projects that result in environmental awareness and benefits including: reduced populations of nonnative fishes; installation and maintenance of 200 bird-nesting boxes; habitat restoration through weeding and re-vegetation in the Prado Basin; and reduction of nonnative plants and replacement with edge riparian species to benefit listed species in partnership with the Corps, Service, and Caltrans. OCWD is developing the infrastructure and agreements needed to turn Santiago Creek into more of a perennial stream.

20. Other On-going Programs or Activities include:

- Wetlands ecology education program for Orange/Riverside County children to visit Prado for a day
- Hotel/motel program to reduce water and detergent use through towel and sheet reuse before washing, which helps environment
- Bird tours monthly at Prado (non-hunting season)
- Fishing-in-the-park and bird capture-and-release programs
- Treatment through Prado wetlands and recharge in Forebay improves ocean quality by reducing runoff to ocean and reducing nitrates
- Wastewater recycled for WF-21 and Green Acres reduces discharge to the ocean
- Santiago Creek recharge, improves creek environment
- Santiago Basins Recharge, provides environment for birds and wildlife
- WQ staff investigates and reports to RWQCB on illicit discharges into SAR
- OCWD provided intensified WQ testing during and after El Nino fish kill
- WQ staff provides response to spills

- OCWD did investigation of UV disinfection as a potential means to reduce use of chlorine in environment
- OCWD Laboratory uses solid-phase extraction as a means to reduce volatile solvent use
- OCWD Geology and WQ departments investigate MTBE and VOC contamination in the groundwater basin, and develop VOC cleanup proposals
- SARWQH program lead to measurement of WQ parameters in the SAR, including stormflow testing, improvement through wetlands, etc.
- OCWD planned, designed, constructed and is operating Dairy Wetlands Demo project
- OCWD provided dairy waste-tipping fee subsidy
- Tested and developed wellhead NDMA treatment
- OCWD groundwater modeling provided information to confirm that groundwater was not contributing to beach contamination in Huntington Beach
- OCWD is investigating possible sources of bacteria in SAR

Most of these activities are no longer driven by specific mitigation requirements (a summary of OCWD's original environmental mitigation measures are in Exhibit OCWD 6-18) and go well beyond endangered birds. Some examples follow. We are accomplishing surveys for past candidate species, like the greenest tiger beetle, that has received little attention otherwise. Our Watershed Biologists are running herp arrays to sample amphibians and reptiles on Santiago, Temescal, and San Timoteo Creeks and in the Prado Basin. We have deployed approximately 300 bird nesting boxes for tree swallows (Exhibit OCWD 6-19), bluebirds and other cavity-nesting, insect-eating birds to reduce insect populations without chemicals. We have a nesting-box program for other species including barn owls to see if their presence will help reduce small mammal predation on vireos, among other benefits. We have embarked on a long-term investigation of the diversity and abundance of bats on the river in relation to water quality and aquatic habitat diversity.

In the Prado Basin, OCWD is constantly finding new ways to restore habitat and benefit beleaguered species. A partnership was formed with Caltrans, for example, to help them with their mitigation needs but also to serve the vireo beyond mitigation requirements. Dead and dying Eucalyptus on the higher edges of the basin are occupying some of the best potential habitat for nesting vireos and other songbirds. OCWD established a partnership with Caltrans to remove Eucalyptus trees and replace them with native habitat. By growing plants that provide vireo nest-placement niches, we are taking advantage of the existing forest in areas where nest cover is scant. These areas are also high enough that they will afford refuge during high water years.

21. Our leadership with the Santa Ana sucker, a threatened fish, started well before the fish was listed with the formation of the Sucker Conservation Team. We funded the original life history investigations in 1998 and continue to participate, provide leadership, and manpower for the field efforts, and $25,000 per year in support of ongoing studies. We have designed and are implementing monitoring and restoration projects for sucker and other native fishes. Most recently, in a 2006 Agreement with the California Department of Fish and Game OCWD has committed to implementing a control program for non-native aquatic predators in the Prado Basin (Exhibit OCWD 6-20), to focus upon the plight of the threatened Santa Ana sucker, and develop habitat restoration and recovery projects.

Executed under the penalty of perjury under the laws of the State of California in Fountain Valley, California on April 11, 2007.

For: Richard Zembal