JILL N. WILLIS, # 200121
STEFANIE D. HEDLUND, # 239787
BEST BEST & KRIEGER LLP
3750 University Avenue
P.O. Box 1028
Riverside, California 92502
Telephone: (951) 686-1450
Telecopier: (951) 686-3083

CITY OF RIVERSIDE
GREGORY PRIAMOS, City Attorney # 136766
SUSAN WILSON, Dep. City Attorney # 157652
3900 Main Street
Riverside, California 92522
Telephone: (951) 826-5567
Telecopier: (951) 826-5540

Attorneys for City of Riverside

STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

In the matter of:

Santa Ana River Water Right Applications 31165, 31174, 31369, 31370, 31371, and 31372 and Wastewater Change Petition No. WW-0045.

Hearing Officer: Arthur Baggett, Jr.

WRITTEN TESTIMONY OF TONY BOMKAMP ON BEHALF OF THE CITY OF RIVERSIDE

Date: May 2, 2007
Time: 9:00 a.m.
Dept: 1001 I Street, Second Fl.
Costal Hearing Room
Sacramento, CA

Riverside Ex. 3-0

1. I am a Senior Wetlands Specialist and Biologist with Glen Lukos Associates. I received a M.S. in Environmental Studies at California State University, Fullerton. I have been teaching various graduate courses in biology and environmental studies at California State University, Fullerton for 14 years. As a botanist, I have diverse field experience extending over 30 years in all of the major vegetation communities in Southern California. My curriculum vitae is attached as Riverside Ex. 3-1.

2. I have conducted wetland delineation and functional assessment for the Arroyo Trabuco Golf Course, adjacent to Trabuco Creek in Mission Viejo, California. For this project I designed a detailed program for monitoring riparian habitat occupied by least Bell's vireo ("LBV") which may be affected by the diversion of stream flows for golf course irrigation. This project remains ongoing and includes collection of vegetation data as well as water potential data from upstream and downstream of the diversion site. I have conducted protocol surveys for LBV and other special-status riparian birds on numerous sites throughout southern California including: Mill Creek in Chino; the Santa Ana River in Riverside and Orange Counties; Santiago Creek and Peter's Canyon Reservoir in East Orange; San Diego Creek and Santa Ana River mouth in Central Orange County; San Juan and Trabuco Creeks in south Orange County; San Mateo Creek in northern San Diego County, and; Pacoima Wash and Basin and La Tuna canyon Creek in Los Angeles County. Additionally, I have conducted protocol surveys for various other small drainages in Orange, Riverside, San Bernardino, San Diego and Los Angeles Counties.

3. I have also conducted numerous surveys for sensitive and endangered plant species, including, but not limited to: Santa Ana River woolystar; Braunton's milk vetch; Orcutt's spineflower; big-leaved crown beard; and Conejo buckwheat.

4. My testimony will cover the biological impacts to LBV habitat in the site area, if any, associated with the City of Riverside's Application 31372 and Wastewater Change Petition WW-0045. Attached is Riverside Ex. 3-2 which illustrates the site area and riparian vegetation.

5. To prepare for this testimony, I toured the site area, reviewed hydrologic data from a variety of sources as well as summary reports regarding LBV within areas potentially affected by the water diversion.

6. After a site tour of the area, review of documents and the below mentioned methodologies, I have concluded that City's proposed uses of recycled water, as described in Application 31372 and Wastewater Change Petition WW-0045 (the "Project") will not have any negative effects on LBV habitat in Reach 3 of the Santa Ana River and the Prado Basin.

I. OVERVIEW OF LEAST BELL'S VIREO

7. LBV is a State and Federally listed species that requires riparian vegetation for breeding. Historic declines in LBV populations were due to widespread habitat loss and degradation and brood parasitism by cowbirds. LBV populations have recovered rapidly since their listing in 1986 and the U.S. Fish and Wildlife Service ("USFWS") proposed to downlist LBV from endangered to threatened in the five-year review just completed. The rapid recovery of the LBV has largely been due to intensive cowbird trapping programs and to a lesser extent to habitat restoration and creation. Attached as Riverside Ex. 3-3 is the *Least Bell's Vireo 5-Year Review Summary and Evaluation*, U.S. Fish and Wildlife Service, September 2006.

8. LBV is known to occur in Prado Basin and much of the Santa Ana River (including the Hidden Valley wastewater treatment wetlands), while only one nesting pair of southwestern willow flycatchers, and no yellow-billed cuckoos (State and Federally listed species) were sited within Prado Basin. Neither of these species has been recently documented to nest in Reach 3 of the Santa Ana River. Other special-status species that are likely common in Prado Basin include yellow warblers and yellow-breasted chats; in general any impacts to LBV would also impact these species. To the extent that LBV is unaffected, these other species with similar habitat requirements would also be unaffected.

9. According to the USFWS five-year review, in 2005 the Santa Ana River supported the second largest number of LBV breeding territories (813) of the 11 locations where LBV have been surveyed and observed; the Margarita River in Camp Pendleton supported the greatest number of territories (827). Moreover in comparison with the year 2000, the LBV populations in the Santa Ana River exhibited a positive growth trend, whereas the Margarita River populations exhibited a slight negative trend in 2005.

10. Riparian vegetation used by LBV during the nesting season largely consists of willow-dominated riparian habitat and mulefat scrub; one recent study showed that 79-percent of 306 nests were placed in willows (*Salix* spp.) and mulefat (*Baccharis salicifolia*). Open water and emergent marsh, which account for most of the cover in the Hidden Valley treatment wetlands is not suitable for LBV, southwestern willow flycatcher, yellow-billed cuckoo, yellow-breasted chat, or yellow warbler.

II. METHODOLOGY

11. In order to evaluate potential impacts to LBV, it is necessary to determine whether habitat used by the LBV would be affected by the proposed diversion and net loss of up to 11,000 acre-feet per year. The primary adverse impact was considered to be potential "dewatering" of LBV habitat leading to stress and ultimately death of occupied or potential habitat. In order to determine whether such effects would occur, a water-budget based approach was used that considered the following: Existing hydrologic input into Reach 3 and Prado Basin; Water requirements of LBV habitat; Post- diversion hydrologic input into Reach 3 and Prado Basin; Determination of whether potential "dewatering" adverse impacts could occur as a result of the diversion/net loss of flows.

12. Hydrological data, for both existing and post-project conditions, used in this report were obtained from a variety of sources including:

- Wildermuth Environmental, Inc. (fifty-year average flows for subject creeks and Santa Ana River) attached as Riverside Ex. 3-4.
- Wildermuth Environmental, Inc. (estimate of Chino Watermaster Diversion based on the past 50-years of precipitation data) attached as Riverside Ex. 3-5.
- City of Riverside (flow data at the MWD crossing, Riverside Treatment plant, and Hidden Valley Treatment Wetlands) attached as Riverside Ex. 3-6.
- US Army Corps of Engineers, Reservoir Regulation Section (average yearly outflow from Prado Dam, 1995-1999) attached as Riverside Ex. 3-7.
- County of Orange Resources and Development Management Department, Watershed

& Coastal Resources Division (average yearly transpiration data collected at Villa Park Dam Station #173 from 1974 –2004) attached as Riverside Ex. 3-8.

13. Water use by willows was obtained from empirical studies in Water Bulletin 50 assembled by the California Department of Public Works, Division of Water Resources, as reported in "Use of Water by Native Vegetation," attached as Riverside Ex. 3-9.

14. As noted above, the purpose of this analysis is to determine whether diversion of a small percentage of annual average flows from Reach 3 of the Santa Ana River, exhibits potential to adversely affect willow-dominated riparian habitat in Reach 3 and Prado Basin. In order to exhibit a potential impact, it must be determined that the diversion would reduce water levels in Prado Basin to such a degree that existing willow riparian habitat would no longer have sufficient water to survive. The results section below address: Water use by riparian habitat; Pre-project water availability for Reach 3 and Prado Basin; and Post-project water availability for Reach 3 and Prado Basin.

III. ANALYSIS

15. Based on empirical studies summarized in Water Bulletin 50, one acre of willow habitat can use up to 4.11 feet of water per year. Reach 3 of the Santa Ana River supports about 2,938 acres of willow-dominated riparian habitat, which could use up to about 12,075 feet of water per year. Attached is Riverside Ex. 3-10, which illustrates the extent of riparian habitat in Reach 3.

16. The Prado Basin supports about 6,121 acres of willow-dominated riparian habitat, which could use up to 25,157 acre-feet of water per year. Attached is Riverside Ex. 3-11, which illustrates the extent of riparian habitat in the Prado Basin.

17. The total water needed for riparian vegetation in Reach 3 and Prado Basin could be up to 37,232 acre-feet per year; however this represents the maximum use and as such is a "conservative" estimate. Also, other components of the habitat such as mulefat are more drought-tolerant than willows, further supporting the conservative nature of expected water use.

18. At the MWD crossing the projected flow averages 153,240 afy. Attached is Riverside Ex. 3-12, which summarizes the average flow at the Metropolitan Water District Crossing.

19. The Riverside Regional Water Quality Control Plant currently discharges approximately 36,000 afy and San Sevaine and Day Creeks add another 18,416 and 7,268 afy respectively. (See Riverside Ex. 3-12.) Discharges from Temescal Creek, Hole Lake, percolation, rising groundwater, and local runoff to the Santa Ana River from Reach 3 add a total projected average of 17,137 afy. Subtracting average evaporation of 13,709 afy and transpiration 12,075 afy in the 2,938 acres of riparian habitat, leaves 206,277 afy in excess of the amount used/required by the existing riparian habitat. Attached is Riverside Ex. 3-12, which demonstrates the current water budget for Reach 3 of the Santa Ana River.

20. The Project at build-out causes a maximum reduction of 11,000 afy from the Santa Ana River in Reach 3 meaning that approximately 195,277 afy in excess of riparian habitat requirements for Reach 3 will reach the Prado Basin. Attached is Riverside Ex. 3-13 a schematic which demonstrates the at-build out conditions for Reach 3 of the Santa Ana River.

21. At Project build-out, Prado Basin will receive the 195,277 afy from Reach 3 plus water from Mill Creek and Chino Creek, which contribute 71,112 afy and 68,249 afy respectively. Subtracting evaporation of 28,769 and transpiration of 25,157 afy in the 6,121 acres of riparian habitat leaves 280,712 afy in excess of the amount used/required by the existing riparian habitat. (See attached Riverside Ex. 3-14 illustrating effects at build-out on riparian habitat in the Prado Basin.)

22. Including the Chino Basin Watermaster diversion of 17,691 afy, the 280,712 afy excess would be reduced to 263,021 afy in excess of the water needed by existing riparian habitat. (See Riverside Ex. 3-15 illustrating at Project build-out effects of Riverside and Watermaster diversions on riparian habitat in the Prado Basin.)

IV. CONCLUSIONS

23. The proposed water diversion from Reach 3 in the Santa Ana River will not significantly affect willow-dominated occupied or potential LBV habitat in Reach 3 or Prado Basin.

24. Reach 3 receives a projected average of about 206,277 acre-feet of surface water per year, whereas the 2,938 acres of LBV habitat requires a maximum of about 12,075 AFY, meaning that only about 5.9 percent of the water that currently enters Reach 3 is used by the existing riparian habitat. Stated simply, there is a substantial amount of surplus water (greater than one order of magnitude) relative to the needs of existing riparian habitat in the Santa Ana River/Prado Basin system.

25. My water budget calculations predict that Prado Basin receives a projected average of 334,588 afy of surface water per year, with the 6,121 acres of LBV habitat using a maximum of about 25,157 afy. Subtracting evaporation of 28,769 afy leaves 280,712 afy, meaning that only about 9 percent of the water that enters Prado Basin is used by the existing riparian habitat. Addition of the Chino Watermater Diversion of 17,691 afy still leaves about 262,971 afy in excess of riparian habitat requirements (less than 10-percent, or about 90-percent in excess).

26. Outflow data from Prado Dam has a 5-year average (1995-1999) of 299,972 afy (Riverside Ex. 3-7.), with a range of 237,619 afy to 429,163 afy, which includes losses due to evapo-transpiration, meaning that an average of about 300,000 afy in excess of the vegetation requirements currently passes through because it is not "needed" by the vegetation, which corresponds closely with my water budget model (less than 10-percent difference).

27. These conclusions are based on surface flow calculations only. Groundwater in Prado Basin (Riverside Ex. 3-2) and increases in flow due to increasing development in the watershed (Riverside Ex. 3-16) may be substantial components that would only add water to the system, further supporting the conclusions that the proposed diversions pose no potential threat to habitat used by LBV or other special-status avifauna.

28. Under any of the scenarios used to evaluate the amount of water available to

riparian habitat in the Santa Ana River Reach 3 and Prado Basin, there is more than an order of magnitude of surplus water in the system after any potential diversions occur, meaning that there is no potential impact on LBV habitat associated with the Project.