



Santiago Basin Saddle Repair Project

Appendix A

Streambed Alteration Agreement Notification No. 1600-2012-0013-R5

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
SOUTH COAST REGION
3883 RUFFIN ROAD
SAN DIEGO, CALIFORNIA 92123



STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2012-0013-R5
SANTA ANA RIVER, SANTIAGO CREEK, AND 24 EARTHEN BASINS

ORANGE COUNTY WATER DISTRICT
REGIONAL MAINTENANCE PLAN FOR GROUNDWATER RECHARGE FACILITIES

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Orange County Water District (OCWD)(Permittee) as represented by Daniel Bott.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified CDFW on January 24, 2012 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The OCWD operates 26 groundwater recharge facilities in the cities of Anaheim and Orange, and in unincorporated Orange County. The primary source of recharge water is the Santa Ana River, supplemented by recycled water from the OCWD Groundwater Replenishment System and imported water. The recharge facilities are grouped into four major components: Main River System (1 basin), Off-River System (5 basins), Deep Basin System (13 basins) and Burris Basin/Santiago System (7 basins).

Main River System

The Main River System consists of approximately 291 acres along a 6-mile long stretch of the Santa Ana River, beginning immediately west of Imperial Highway and extending to Chapman Avenue.

Off-River System

The upstream portion of the Off-River System begins at the Imperial Inflatable Rubber Dam (IIRD). The IIRD was installed in 1993 and later replaced in 2011. The rubber dam is 7 feet in diameter and 300 feet in length. Base flows are passively diverted by the IIRD to the Off-River System. The system includes four “weir ponds” and the Off-River Recharge Channel, this system is up to 200-feet wide running parallel to the Main River System for approximately 2 miles from the IIRD to Five Coves Basin, just beyond the Carbon Canyon Diversion Channel.

Deep Basin System

The Deep Basin System is composed of Warner Basin, Huckleberry Basin, Conrock Basin, Warner Basin, Little Warner Basin, Anaheim Lake, Mini-Anaheim Lake, Miller Basin, Kraemer Basin, Miraloma Basin, La Jolla Basin, Placentia Basin and Raymond Basin. These recharge basins range in depth from 10 to 60 feet. Periodically, the basins are drained and mechanically cleaned with heavy equipment to increase groundwater percolation.

Burriss Basin/Santiago System

The Burriss Basin/Santiago System consists of approximately 360 acres of recharge basins. This system consists of Five Coves Basin, Lincoln Basin, Burriss Basin, Riverview Basin, Fletcher Basin, Santiago Basin, and Santiago Creek. The system originates at the Five Coves Inflatable Dam which diverts surface water flows from the Santa Ana River into Five Coves Basin. The water passively flows into Lincoln Basin and Burriss Basin. At Burriss Basin, the Burriss Basin Pump Station pumps water approximately five miles through the Santiago Pipeline to other facilities within this system. A pump station is located within Santiago Basin that allows water to be pumped back to Burriss Basin, Riverview Basin, Fletcher Basin, or Santiago Creek.

Table 1: Groundwater Recharge Facility Locations

Facility	Size (Wetted Acres)	Location	USGS	Latitude/ Longitude
Anaheim Lake	74	Tustin Ave. @ Miraloma Ave.	Orange-T4S/R9W	33 51 58/117 50 51
Burriss Basin	99.2	Ball Road & SR 57	Orange T4S/R9W	33 49 31/117 52 13
Conrock Basin	19.6	Richfield Rd. @ La Palma Ave.	Orange-T4S/R9W	33 51 20/117 49 36
Five Coves Basin	32.2	Lincoln Ave. @ Kingsley St.	Orange T4S/R9W	33 50 27/117 51 38
Fletcher Basin	4.89	Fletcher Ave. @ Batavia St.	Orange-T4S/R9W	33 49 41/117 51 35
Huckleberry Basin	21.7	Taylor St. @ La Palma Ave.	Orange-T4S/R9W	33 51 26/117 49 17
Kraemer Basin	29	Miraloma Ave. @ Kraemer Blvd.	Orange T4S/R9W	33 51 37/117 51 27
La Jolla Basin	5.6	La Jolla St. @ Red Gum St.	Orange T3S/R9W	33 51 38/117 52 09

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Lincoln Basin	8.3	Lincoln Ave. @ Andalusia Ave.	Orange T4S/R9W	33 55 02/117 51 55
Little Warner Basin	9.8	La Palma Ave. @ Van Buren	Orange-T4S/R9W	33 51 02/117 50 03
Miller Basin	20.9	Miraloma Ave. @ Miller St.	Orange T4S/R9W	33 51 52/117 51 21
Mini-Anaheim Lake	5.5	Tustin Ave. @ Miraloma Ave.	Orange T4S/R9W	33 51 59/117 50 35
Miraloma Basin	13	Miraloma Ave.@ Kraemer Blvd.	Orange T4S/R9W	33 51 40/117 51 35
Off-River Channel	64.4	Tustin Ave. @ SR91	Orange-T4S/R9W	33 51 12/117 49 31
Olive Basin	4.6	SR-91 @ Tustin Ave.	Orange T4S/R9W/S5	33 50 59/117 50 25
Placentia Basin	6.9	State College @ Orangethorpe	Anaheim T4S/R10W	33 51 28/117 53 10
Raymond Basin	13.3	La Palma Street/East St.	Anaheim T4S/R10W	33 50 55/117 54 29
Riverview Basin	3.5	Batavia Street @ Fletcher Ave.	Orange T4S/R10W	33 49 26/117 51 58
Santa Ana River Reach 1	96.2	Imperial Highway to SR 91	Orange T3,4S/R9W	33 51 23/117 48 49
Reach 2	73.2	SR 91 to Lincoln Ave.	Orange T4S/R9,10W	33 50 38/117 51 08
Reach 3	50.8	Lincoln Ave. to Ball Road	Orange T4S/R9,10W	33 49 29/117 52 00
Reach 4	52.6	Ball Road to Orangewood Ave.	Anaheim T4S/R10W	33 47 59/117 52 38
Reach 5	18.79	Orangewood Ave. to Chapman Ave.	Anaheim T4S/R10W	33 47 28/117 52 51
Santiago Basin	166.2	Prospect Avenue@ Bond Street	Orange T4/R9/S16	33 48 15/117 48 23
Santiago Creek Reach 1	2.7	Chapman Ave. Crossing	Orange-T4S/R9W	33 47 22/117 49 41
Reach 2	4.9	SR 55 to Tustin St.	Orange-T4S/R9W	33 46 55/117 50 01
Reach 3	2.6	Cambridge St. to Schaffer St.	Orange- T4S/R9W	33 46 44/117 50 49
Warner Basin	68.4	La Palma Ave. @ Van Buren	Orange-T4S/R9W	33 51 14/117 49 54
Weir Pond 1	5.4	Imperial Hwy.@ La Palma Ave.	Orange-T4S/R9W	33 51 24/117 48 11
Weir Pond 2	6.4	Imperial Hwy. @ La Palma Ave.	Orange-T4S/R9W	33 51 26/117 48 09
Weir Pond 3	15.7	Taylor St. @ La Palma Ave.	Orange T4S/R9W	33 51 24/117 48 56
Weir Pond 4	4	Taylor St. @ La Palma Ave.	Orange-T4S/R9W	33 51 21/117 49 05

If future OCWD groundwater recharge facilities are constructed, the required ongoing routine maintenance activities for those facilities would be incorporated into this Agreement by submitting a "Request to Amend Lake or Streambed Alteration" form and receiving confirmation back from CDFW.

Previous Authorization:

Several of the OCWD groundwater recharge facilities pre-date the Clean Water Act and have no regulating agency authorization to maintain the recharge facilities. Below is a list of groundwater recharge facilities projects that have approved CDFW authorization. The avoidance and minimization measures of these Agreements have been incorporated into OCWD's Groundwater Recharge Facilities Maintenance Plan (i.e., this Agreement).

Santiago Basin - 5-86-245

Santiago Creek Groundwater Recharge Enhancement - 1600-2007-0003-R5

Burriss Basin Reconfiguration Project - 1600-2008-0346-R5

Five Coves Basin Pipeline Project - 1600-2009-0379-R5

Off-River Basin Desilting Demonstration Project - 1600-2010-0332-R5

Fletcher Basin Improvement Project - 1600-2011-0318-R5

PROJECT DESCRIPTION

The project is limited to the new permanent impact of 4.36 acres of riparian scrub vegetation and the routine maintenance of groundwater recharge facilities operated by OCWD totaling over 1,000 acres of habitat subject to FGC section 1602 permitting requirements. Identified routine maintenance activities are described below. Table 2 identifies routine maintenance activities that will occur at each groundwater recharge facility. Timing and frequency of these activities are described in the *Orange County Water District Groundwater Recharge Facilities Maintenance Plan*, dated April 2012.

Table 2: Maintenance Activities

	Basin	Sediment Disturbance/ Removal	Vegetation Removal	Maintain Access Ramps	Maintain Existing Structures	Maintain Dikes and Levees
1.	Anaheim Lake	X	X	X	X	
2.	Burriss Basin	X		X	X	X
3.	Conrock Basin	X		X	X	
4.	Five Coves Basin	X		X	X	
5.	Fletcher Basin	X		X	X	
6.	Huckleberry Basin	X		X	X	
7.	Kraemer Basin	X	X	X	X	
8.	La Jolla Basin	X		X	X	

9.	Lincoln Basin	X		X	X	
10.	Little Warner	X			X	
11.	Miller Basin	X		X	X	
12.	Mini-Anaheim Lake	X		X	X	
13.	Miraloma Basin	X		X	X	
14.	Off-River Channel	X		X	X	
15.	Olive Basin	X		X	X	
16.	Placentia Basin	X			X	
17.	Raymond Basin	X			X	
18.	Riverview	X		X	X	
19.	Santa Ana River			X	X	X
20.	Santiago Basin	X		X	X	
21.	Santiago Creek	X				
22.	Warner Basin	X	X	X	X	
23.	Weir Pond 1	X	X		X	
24.	Weir Pond 2	X	X		X	
25.	Weir Pond 3	X	X		X	
26.	Weir Pond 4	X	X		X	

Sediment Disturbance/Removal: Sediment disturbance will occur under dry or wet conditions. During dry conditions, the recharge facilities are drained and dried out, then sediment and silt on the bottom and side walls of the basins are broken up and/or scraped and removed by heavy construction equipment. During wet conditions, a submerged cleaning device will vacuum silt from the basin bottom.

Vegetation Removal: Native and non-native vegetation removal activities along the banks of existing recharge facilities and around existing water conveyance structures are described in the Permittee's Notification. A combination of hand tools, mechanical vegetation cutters and heavy equipment will be used to remove vegetation.

Maintenance and Repair of Existing Access Roads and Ramps: Maintenance and repair of existing dirt access roads and ramps will provide continuous access into OCWD recharge facilities. Heavy equipment such as dozers and scrapers will re-grade and repair access roads and ramps.

Maintaining Existing Water Conveyance Structures: This project includes maintenance of existing water conveyance structures, including culverts, transfer tubes, inlet and outlet structures, weirs, flumes, sluice gates, trash racks, rubber dams, rip rap, grade stabilizers, sump pumps and valves. Maintenance activities would not include the construction of new water conveyance structures or the replacement of existing structures that would involve a larger construction footprint.

Sand Levee Creation and Repair: OCWD will create and repair sand levees in the Santa Ana River. Flows that exceed 350 cubic feet per second are expected to wash away the created sand levees. Heavy construction equipment will operate within the Santa Ana River to create and repair sand levees as necessary.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: FISH – Santa Ana sucker (*Catostomus santaanae*); AMPHIBIANS – western toad (*Anaxyrus boreas*), arboreal salamander (*Aneides lugubris*), black-bellied salamander (*Batrachoseps nigriventris*), pacific treefrog (*Pseudacris regilla*); REPTILES – orange-throated whiptail (*Asidoscelis hyperythra beldingi*), western skink (*Eumeces skiltonianus*), common kingsnake (*Lampropeltis getulus*), coast horned lizard (*Phrynosoma coronatum*); BIRDS – spotted sandpiper (*Actitis macularia*), Cooper's hawk (*Accipiter cooperii*), rufous-crowned sparrow (*Aimophila ruficeps*), coastal cactus wren (*Campylorhynchus brunneicapillus*), snowy plover (*Charadrius alexandrinus*), killdeer (*Charadrius vociferus*), yellow warbler (*Dendroica petechia brewsteri*), white tailed kite (*Elanus leucurus*), common yellowthroat (*Geothlypis trichas*), black-necked stilt (*Himantopus mexicanus*), yellow-breasted chat (*Icteria virens*), black-crowned night heron (*Nyctanassa violacea*), coastal California gnatcatcher (*Polioptila californica californica*), American avocet (*Recurvirostra americana*), black skimmer (*Rynchops niger*), black phoebe (*Sayornis nigricans*), California least tern (*Sterna antillarum browni*), forester tern (*Sterna foresteri*), least Bell's vireo (*Vireo bellii pusillus*); MAMMALS – coyote (*Canis latrans*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), striped skunk (*Mephitis mephitis*), Yuma myotis (*Myotis yumanensis*), raccoon (*Procyon lotor*), California ground squirrel (*Spermophilus beecheyi nudipes*), Audubon's cottontail (*Sylvilagus audubonii*), Mexican free-tailed bat (*Tadarida brasiliensis*); PLANTS – chaparral sand-verbena (*Abronia villosa* var. *aurita*), mulefat (*Baccharis salicifolia*), southern tarplant (*Centromadia parryi australis*), many-stemmed dudleya (*Dudleya multicaulis*), Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*), Mexican spangletop (*Leptochloa uninervia*), willow weed (*Polygonum lapathifolium*), sandbar willow (*Salix exigua*), black willow (*Salix gooddingii*), and all other riparian/wetland vegetation which provides habitat for those species, and all other aquatic and wildlife resources in the project vicinity.

The adverse effects the project could have on the fish or wildlife resources identified above include: loss of natural bed or bank; change in contour of bed, channel or bank; change in gradient of bed, channel or bank; degradation or aggradation of channel; accelerated channel scour; loss of bank stability during construction; increase of bank erosion during construction; change in composition of channel materials (substrate particle size); soil compaction or other disturbance to soil layer; restriction or increase in sediment transport; debris dams; increased turbidity; increased sedimentation (chronic or episodic); change in pH; short-term release of contaminants (e.g., incidental from construction); change in water temperature; change in dissolved oxygen (DO); loss or decline of riparian and/or emergent marsh habitat; colonization by exotic plant or animal

species; loss or decline of instream channel habitat; loss or decline of instream woody material; creation of predatory fish habitat; change to, or loss or decline of natural bed substrate; direct take of fish and other aquatic species; direct impacts from dredging on benthic organisms; disruption to nesting birds and other wildlife; disturbance from project activity; loss or decline of aquatic species' habitat: migration corridors, spawning or rearing areas; change in stream flow (Q); diversion of flow water from, or around, activity site; dewatering; rewatering; impoundment above intake; change in hydrology below intake; change (increase or decrease) in sediment delivery below intake; change in flow depth, width or velocity; flow deflection; flow restriction; change in percolation; change in channel form; direct take of aquatic species from pumps; direct loss of resources for aquatic organisms; impediment to migration of aquatic and terrestrial species; entrapment in isolated pools due to loss of water surface elevation.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify CDFW if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that CDFW personnel may enter the project site at any time to verify compliance with the Agreement.
- 1.5 Notification Prior to Work. The Permittee shall notify CDFW, in writing, at least 5 days prior to initiation of construction (project) activities and at least 5 days prior to completion of construction (project) activities, each time project activities occur. Notification shall be sent to CDFW's South Coast Office at the address on page

1, ATTN: Streambed Alteration Program – SAA # 1600-2012-0013-R5, or alternatively by electronic mail to R5LSACompliance@wildlife.ca.gov.

- 1.6 Payment of Outstanding Fees. The Permittee shall submit a fee for each individual maintenance project to CDFW as described in the California Code of Regulations, Title 14, section 699.5. CDFW acknowledges receipt of the Long Term Routine Maintenance base fee. Annual fees shall be submitted in January of the year following completed maintenance activities. The fee shall be based on the total number of maintenance activities completed during the calendar year. A maintenance activity for this Agreement is defined as a single activity described in Table 2 at a single recharge facility.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

- 2.1 Protected Species Defined. This Agreement does not authorize take, incidental or otherwise, of any protected species. For the purpose of this Agreement, “protected species” means the following: a species fully protected under state law; a candidate species or species listed as threatened or endangered under the California Endangered Species Act (CESA; Fish & G. Code § 2050 et seq.) and/or Endangered Species Act (ESA; 16 U.S.C. § 1531 et seq.); a species identified by CDFW as a species of special concern; or any other species for which take is prohibited under state or federal law. No direct or indirect impacts shall occur to any protected species, except as may be authorized by one or more individual permits that authorize such impacts.

Resource Protection

- 2.2 Designated Biologist. Permittee shall submit the names, qualifications, business addresses, and contact information for all lead biological monitors (Designated Biologists) to CDFW. The Designated Biologists shall be knowledgeable and experienced in the biology and natural history of local fish and wildlife resources present at the project site. The Designated Biologists shall be responsible for monitoring all project activities, including construction and any ground or vegetation disturbing activities in areas subject to this Agreement. Permittee shall keep CDFW informed of current Designated Biologists.
- 2.3 Annual Employee Education. Permittee shall conduct an annual education program for all persons employed or otherwise working within CDFW jurisdictional habitat. The program shall consist of a presentation from a Designated Biologist that includes a discussion of the biology of the habitats and species identified in this Agreement and present at this site. The Designated Biologist shall also include, as part of the education program, information about the distribution and habitat needs of any special status species that may be

present, legal protections for those species, penalties for violations and project-specific protective measures included in this Agreement. The program shall clearly explain that the Designated Biologist shall determine if maintenance activities within 300 feet of an active avian nest can proceed or be postponed if there is a potential for nesting birds to be adversely affected. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers prior to their performing work on-site. Upon completion of the education program, employees shall sign a form stating they attended the program and understand all protection measures. These forms shall be filed at the worksite offices and be available to the CDFW upon request.

- 2.4 Herbicide Use Only for Invasive Vegetation. Herbicides shall be used only for selective treatment of non-native invasive vegetation species identified in the California Exotic Pest Plant Council's database, which is accessible at: <http://www.cal-ipc.org/ip/inventory/weedlist.php>. Herbicide use to kill native vegetation is prohibited.
- 2.5 Herbicide Use in Aquatic Environment. Any herbicide used where there is the possibility that the herbicide could come into direct contact with water shall be approved for use in an aquatic environment (e.g. Rodeo/Aquamaster). Great care shall be taken to avoid contact with any native vegetation, and it shall only be applied on calm days to prevent airborne transfer of the herbicide.
- 2.6 Herbicide Mixing. Herbicide mixing sites shall only be located in areas devoid of vegetation, and where there is no potential of a spill reaching a vegetated area or a stream, for example avoid mixing at a storm water-inlet.
- 2.7 Removal and Disposal of Non-Native Vegetation. Any non-native vegetation removed shall be disposed of legally in a manner which prevents its reestablishment and in a manner that does not negatively affect other sensitive native habitat.

Wildlife and Habitat Protection

- 2.8 Nesting Bird Avoidance and Protection. To avoid impacts to nesting birds, maintenance activities adjacent to nesting habitat shall not take place within CDFW jurisdictional habitats from March 15 through September 15, unless CDFW agrees to modify this restricted work period. If avoidance of the nesting bird season is not feasible, maintenance activities may occur during the restricted work period if the Designated Biologist conducts a focused survey for active nests within 500 feet of the maintenance activity area. Surveys shall be conducted once a day for 5 days at an appropriate time of day, ending no more than 48 hours prior to work in the area. The Designated Biologist must have previous experience in nesting surveys for bird species known to inhabit the work area. The results of the survey shall be submitted to the CDFW in the form of an annual written report and shall include the following information; dates of survey,

total field time of survey efforts, map of survey routes, names of investigators, and if any active nests were found. If any survey identifies an active nest, a buffer shall be established between the maintenance activities and the active nest so that nesting activities are not interrupted. The buffer shall be delineated by temporary fencing, and shall be in effect throughout construction or until the nest is no longer active. The buffer shall be a minimum of 300 feet. If the Designated Biologist determines that a maintenance activity can proceed within the 300-foot buffer without adversely affecting non-listed nesting birds, a qualified biologist shall be present during the activity and is authorized to cease project activities that appear to be disrupting nesting behavior. Maintenance activities shall not occur within 300 feet of the active nest of a protected species.

- 2.9 Burriss Basin Nesting Islands. To avoid impacts to nesting California least terns (a CESA and ESA-listed endangered species, and a state fully protected species under Fish & G. Code § 3511) at Burriss Basin, maintenance activities within this basin shall not take place from April 1 through August 31, unless CDFW agrees to modify this restricted work period. If avoidance of the least tern nesting period is not feasible, maintenance activities may occur no closer than 500 feet from any nesting island during this restricted work period.
- 2.10 Use of Electric Bulldozers. To reduce construction equipment noise levels when conducting sand levee maintenance activities in the Santa Ana River, the Permittee shall use electric bulldozers to the maximum extent feasible.
- 2.11 Bats at Bridges. To minimize indirect impact to bats, equipment shall only be underneath bridge structures for the minimum time necessary to complete the maintenance activity. Construction equipment shall not be parked or unnecessarily idle underneath any bridge within the project boundaries.
- 2.12 Bats at Culverts. Prior to project activities modifying or replacing culverts or other water conveyance structures, the site shall be surveyed for bats by a qualified bat biologist approved by CDFW. If bats are found, there shall be no further disturbance to the culvert until CDFW has been consulted. CDFW reserves the right to provide additional provisions to this agreement designed to protect nesting/roosting bats.
- 2.13 Stranded Aquatic Wildlife. When dewatering any groundwater recharge facility, a qualified biologist shall check daily for stranded aquatic species as the water level in the dewatering areas drops. All reasonable efforts shall be made to capture and move isolated or stranded aquatic species observed in the dewatered areas. Capture methods may include fish landing nets, dip nets, buckets, and by hand. Captured aquatic animals shall be identified to the species level, and then immediately released in the closest body of water adjacent to the work site. The location, condition after relocation, and approximate size of each aquatic animal shall be incorporated into the required annual reporting for the project. This measure does not allow for the capture, relocation or take of any CESA or ESA-

listed species, or State listed species of special concern. Any CESA or ESA-listed isolated or stranded species observed, including Santa Ana sucker (*Catostomus santaanae*), shall be reported to CDFW (see 2.14).

- 2.14 Work Suspension. Permittee shall not continue work once stranded aquatic Protected Species (see 2.1; a species fully protected under state law; a candidate species or species listed as threatened or endangered under CESA and/or ESA, state species of special concern) are discovered until CDFW has been notified and concurrence has been received by CDFW that work may continue.
- 2.15 No Pets on Construction Site. Project personnel will be prohibited from bringing domestic pets to construction sites to ensure that domestic pets do not disturb or deplete wildlife in adjacent native habitats during construction.
- 2.16 Project Lighting. Lighting required to complete project activities shall not illuminate CDFW jurisdictional habitat. Light fixtures shall incorporate shields to direct light away from the bed, bank, or channel of any lake or stream within the project footprint.
- 2.17 Pump Intakes. All pump and vacuum intakes placed in stream shall be fitted with (1/8) inch or smaller mesh screens during January 1 through March 30, and (1/4) inch or smaller mesh screens thereafter.

Fill and Spoil

- 2.18 Location of Spoil Sites. Spoil sites shall not be located within the stream or locations that may be subjected to high storm flows, where spoil may be washed back into the stream, or where it may impact streambed habitat, aquatic or riparian vegetation.
- 2.19 Alluvium Fill. Except as otherwise specified in this Agreement, fill material other than on site alluvium shall consist of clean silt free gravel or river rock.
- 2.20 Dredged Material. Sediment removed from any recharge facility shall be stockpiled outside of any stream. If soil testing determines the soil contains hazardous material, it will be disposed of in a legal manner and not be relocated within habitat subject to CDFW jurisdiction.

Structures

- 2.21 Repair of Existing Structures. The Permittee may repair damage to any water conveyance structures including: culverts, transfer tubes, inlet and outlet structures, weirs, flumes, sluice gates, trash racks, rubber dams, rip-rap, grade stabilizers, sump pumps, and valves. Such repair shall employ the same type of materials used in the original construction and shall occur only in the previously existing locations. New sites requiring water conveyance structures, expansions

in size of existing structures, or changes in the materials to be used, are not covered by this Agreement. As such, a separate Notification and Agreement would be required for such work.

- 2.22 New Structures. Existing conditions are described in the *Orange County Water District Groundwater Recharge Facilities Maintenance Plan*, dated April 2012. New structures within any groundwater recharge facilities are not authorized as a part of this Agreement.

Erosion, Turbidity, and Siltation

- 2.23 Minimize Turbidity and Siltation. Permittee shall take precautions to minimize turbidity/siltation during construction and post-construction periods. Precautions shall include, but are not limited to: pre-construction planning to identify site specific turbidity and siltation minimization measures and best management erosion control practices; best management erosion control practices during project activity; and settling, filtering, or otherwise treating silty and turbid water prior to discharge into a stream or storm drain.
- 2.24 Erosion Control Measures. Permittee shall utilize erosion control measures throughout all phases of operation where sediment runoff from exposed slopes threatens to enter the stream.
- 2.25 Erosion Control Monitoring. Permittee shall monitor erosion control measures before, during, and after each storm event and repair and/or replace ineffective measures immediately.

Equipment and Access

- 2.26 Equipment and Vehicle Spills and Contaminants. Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. Permittee shall maintain all vehicles and equipment in proper working condition to minimize fugitive emissions and accidental spills from motor oil, antifreeze, hydraulic fluid, grease, and other fluids or hazardous materials. All fuel or hazardous waste leaks, spills, or releases shall be stopped or repaired immediately and cleaned up at the time of occurrence. Permittee shall be responsible for spill material removal and disposal to an approved offsite landfill and spill reporting to the permitting agencies. Service/maintenance vehicles shall carry appropriate equipment and materials to isolate and remediate leaks or spills. A spill containment kit shall be available onsite for all fueling, maintenance, and construction activities.
- 2.27 Equipment in Stream. Equipment operating in the wetted portion of the stream will due so for the minimum time necessary to complete the maintenance activity. Working in the wetted portion of the stream is only authorized when the

equipment is completely clean of petroleum products (including lubricants and fuels) and the water level remains below the gear boxes such that inundation by water shall not result in leaks. Equipment may operate with water above gear boxes only if gear boxes sealed to prevent contamination of water resources.

- 2.28 Stationary Equipment. Stationary equipment such as motors, pumps, generators, and welders, located within or adjacent to the stream or shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak.
- 2.29 Equipment Maintenance and Fueling. No equipment maintenance or fueling shall be done within or near any stream channel where petroleum products or other pollutants from the equipment may enter these areas.
- 2.30 Clean All Equipment Before Entering Stream. The Permittee shall clean all equipment of soil containing seed and plant material prior to entry into the streambed to prevent the spread of invasive exotic plant species from adjacent areas or other sites where equipment may have been previously used.
- 2.31 Equipment Access. Access to the work site shall be via existing maintenance access roads and ramps. Access roads will be maintained on an annual basis to discourage woody riparian vegetation from establishing.
- 2.32 Speed Limit. A 15-mile per hour speed limit shall be observed on dirt access roads at all times.

Pollution, Litter, and Clean-Up

- 2.33 On-Site Specialist. Permittee shall have on site a person properly trained in spill containment/clean up to implement spill control devices in the event a spill occurs.
- 2.34 Storm Water Management. Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows.
- 2.35 Litter and Pollution. Permittee shall comply with all litter and pollution laws. All contractors, subcontractors and employees shall also obey these laws and it shall be the responsibility of the Permittee to ensure compliance.
- 2.36 Secure Trash Receptacles. The Permittee shall install and use fully covered trash receptacles with secure lids (wildlife proof) to contain all food, food scraps, food wrappers, beverage and other miscellaneous trash.
- 2.37 Hazardous Substances. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project

related activities, shall be prevented from contaminating the soil and/or entering the Waters of the State. Any of these materials, placed within or where they may enter the stream by Permittee or any party working under contract, or with the permission of Permittee, shall be removed immediately.

Replanting and Restoration

- 2.38 **Native Plant Materials.** Revegetation shall include only local plant materials native to the project area, unless otherwise approved by CDFW in writing.
- 2.39 **Prohibited Plant Species.** Permittee shall not plant, seed or otherwise introduce invasive exotic plant species. Prohibited exotic plant species include those identified in the California Exotic Pest Plant Council's database, which is accessible at: <http://www.cal-ipc.org/ip/inventory/weedlist.php>
- 2.40 **Monitor Wildlife Use of Mitigation Areas.** The Permittee shall have a qualified wildlife biologist survey the restoration sites to monitor the recovery of wildlife and aquatic resources in the mitigation areas. Monitoring of wildlife and aquatic resources shall be done in summer and winter of each year, through the term of the restoration and subsequent reporting. Results and analysis shall be submitted with the required reporting for the project.
- 2.41 **Success Criteria.** All mitigation planting shall have a minimum of 100% survival the first year and 80% survival thereafter and/or shall attain 75% cover of native woody perennials after 3 years and 90% cover of native woody perennials after 5 years. If the survival and cover requirements have not been met, the Permittee is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting. At the completion of the monitoring period, the mitigation site shall have received no supplemental irrigation for a period of two consecutive years, nonnative plants shall not make-up more than 5% of the entire cover of the site, no more than 5% of the site shall consist of bare ground and the site shall be free of invasive exotic plant species.

3. Compensatory Measures

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee shall implement each measure listed below.

- 3.1 **Santa Ana Sucker Habitat Restoration.** The Permittee will continue to participate as an active member of the Santa Ana Sucker Conservation Team and shall contribute annual fees to help fund population studies and restoration programs for the Santa Ana Sucker.
- 3.2 **Mitigation for Authorized Impacts.** The Permittee shall mitigate project impacts according to the *Orange County Water District Groundwater Recharge Facilities Mitigation Plan*, dated January 2012 and as described below. Restoration

activities shall include the removal of all nonnative plant species, trash, and debris, and the installation of site appropriate native plant species. All plant species installed within the restoration sites shall include only local California native container plants, cuttings, and/or seed mix. In total, a minimum of 97.18 acres of native habitat within the following 7 basins shall be preserved and managed in perpetuity.

Smith Basin: Smith Basin is located immediately north of Santiago Basin and is no longer an actively managed part of the groundwater recharge system. 1.84 acres of bare ground and non-native riparian vegetation will be replaced with native riparian vegetation. Additionally, 2.49 acres of non-native upland vegetation will be removed and restored with native upland vegetation.

Conrock Basin: 1.60 acres of existing open water will be converted into riparian woodland habitat and 0.40 acres of open water will be converted to freshwater marsh habitat. Additionally, 2.27 acres of non-native vegetation will be removed and restored with native riparian vegetation.

Huckleberry Basin: 0.80 acres of non-native vegetation along the banks of this basin will be removed and restored with native riparian vegetation.

Santiago Basin: 5.74 acres of non-native riparian vegetation will be removed and restored with native riparian vegetation. Additionally, 7.74 acres of non-native upland vegetation will be removed and restored with native upland vegetation.

Five Coves Basin: 1.70 acres of riparian forest will be created along the northwest end of the basin. The existing 1.40 acres of riparian forest and 0.35 acres of fresh water marsh habitat will be managed and maintained.

Burris Basin: The 5.80 acres of riparian habitat and the 2.40-acre sand island required by Streambed Alteration Agreement 1600-2008-0346-R5 will be managed and maintained.

Mills Pond: Mills Pond is located near Weir Pond 3 and is no longer actively managed as a part of the groundwater recharge system. 1.16 acres of riparian vegetation will be created along the banks of the pond. Additionally, 3.84 acres of freshwater marsh will be created on site.

Table 3. Summary of Habitat Mitigation Obligations (in Acres)

Basin	Existing Native Vegetation	Native Riparian Vegetation Created*	Native Vegetation Restored		Overall Amount of native vegetation maintained
			Riparian	Upland	
Smith Basin	**27.47	0.0	1.84	2.49	**31.80
Conrock Basin	4.71	2.0	2.27	0.0	8.98
Huckleberry Basin	1.07	0.0	0.80	0.0	1.87
Santiago Basin	24.2	0.0	5.74	7.74	37.68
Five Coves Basin	1.75	1.7	0.0	0.0	3.45
Burris Basin	8.4 (includes 2.6-acre sand island)	0.0	0.0	0.0	8.4
Mills Pond	0.0	5.0	0.0	0.0	5.0
Totals	67.6	8.7	10.65	10.23	97.18
* Includes riparian woodland and freshwater marsh					
** Includes 8.6 acres of open water habitat that would not be disturbed					

3.3 Timing of Mitigation Implementation. 19.35 acres of riparian habitat will be created, converted, or restored as described above (8.7 acres of creation and 10.65 acres of restoration). Mitigation of riparian habitat in the form of creation, conversion, or restoration shall occur at a rate of at least 2.0 acres per year. Thus, at least 10.0 of the 19.35 acres shall have the mitigation implemented by year 5 of the Agreement, and the entire 19.35 acres shall be implemented by year 10 of the Agreement. The remaining acreage outside of this 19.35 acres shall occur within the term of this Agreement or as required by other permits. All mitigation activities shall be accomplished while complying with the avoidance and minimization measures of this Agreement.

3.4 Mitigation for Unauthorized Impacts. The Permittee shall mitigate at a minimum 5:1 ratio for impacts beyond those authorized in this Agreement. In the event that additional mitigation is required, the type of mitigation shall be determined by CDFW, and may include creation/establishment, enhancement and/or re-establishment.

4. Reporting Measures

Permittee shall meet each reporting requirement described below.

4.1 Reporting of Maintenance Activities. The Permittee shall submit a report to CDFW annually for the term of the Agreement that describes the maintenance activities conducted during the previous calendar year. Each report shall include at a minimum: a summary of the annual maintenance activities conducted for

each maintenance facility, including: location, type of activity, time of year activities were conducted, duration of activities, methods/equipment used to conduct activities, quantity of sediment removed, quantity and type of vegetation removed, total area of impact for each location, and before and after photographs of the maintenance areas.

- 4.2 Mitigation Installation Report. Permittee shall submit a report to the CDFW, within 45 days after finalizing each replanting effort, acknowledging the completion of the replanting site and documenting its as-built status. The report should be sent to CDFW's South Coast Region office at the address below, ATTN: Streambed Alteration Program – SAA # 1600-2012-0013-R5.
- 4.3 Mitigation Monitoring Report. Once every two years, the Permittee shall submit a report to CDFW summarizing the on-site mitigation efforts. This report shall include at a minimum:
 - a. A summary of all creation, conversion, or restoration activities initiated during the reporting period, including: site preparation, including the removal of nonnative plants, trash, and debris; plant installation, including the types and quantity by species of plants installed, and an overview of the planting effort; and when the activities were initiated.
 - b. Current site conditions of all installed mitigation, including: the percent survival, percent cover, and height of both tree and shrub species planted; percent cover of non-natives; the methods used to access these parameters; and the number by species of plants replaced at each site.
 - c. A summary of fish and wildlife species observed at the restoration areas during monitoring surveys and/or incidental sightings. Photos from designated photos stations shall be included to document the progress of each enhancement/restoration area over time.
- 4.4 Required Quadrennial Reporting. The Permittee shall provide a status report to CDFW every four years in accordance with FGC section 1605(g), with the first four-year period beginning on the effective date of this Agreement. The status report shall be delivered to CDFW no later than 90 days prior to the end of each four-year period, and shall include all of the following:
 - a. A copy of the original Agreement
 - b. The status of the projects covered by the Agreement
 - c. An evaluation of the success or failure of the avoidance measures in this Agreement designed to protect the fish and wildlife resources that the projects this Agreement covers may substantially adversely affect;
 - d. A discussion of any factors that could increase the predicted adverse impacts on fish and wildlife resources, and a description of the resources that may be adversely affected.

- 4.5 Department Mandated Response to Status Report. Upon receipt of the status report, CDFW shall comply with the provisions of FGC section 1605(g).
- 4.6 Failure to Provide Status Reports. If the Permittee fails to provide timely status reports as required by this Agreement and FGC section 1605(g), CDFW may suspend or revoke this Agreement.
- 4.7 Sensitive Species Observations. The Permittee shall be responsible for reporting all observations of threatened /endangered species or of species of special concern to CDFW's Natural Diversity Data Base (CNDDDB) within ten (10) days of sighting. The form and instructions for completing the form and submitting the information are available on-line at http://www.dfg.ca.gov/biogeodata/cnddb/submitting_data_to_cnddb.asp. In addition to sending the information to CNDDDB a copy should be sent to CDFW's South Coast Office at the address on Page 1, ATTN: Streambed Alteration Program – SAA #1600-2012-0013-R5.

CONTACT INFORMATION

Any communication that Permittee or CDFW submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or specifies by written notice to the other.

To Permittee:

Mr. Daniel Bott
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708
dbott@ocwd.com

To CDFW:

Department of Fish and Wildlife
South Coast Region
3883 Ruffin Road
San Diego, California 92123
Attn: Streambed Alteration Program
Notification #1600-2012-0013-R5

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers,

employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 et seq. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and Permittee. To request an amendment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after Permittee's signature; 2) after CDFW complies with all applicable requirements

under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire on January 31, 2025 unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR ORANGE COUNTY WATER DISTRICT

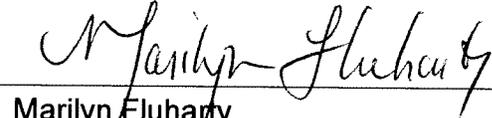


Daniel Bott
Principal Environmental Planner

1/28/2013

Date

FOR DEPARTMENT OF FISH AND WILDLIFE



Marilyn Fluharty
Acting Environmental Program Manager

2-4-13

Date