

ADDENDUM NO. 1

Strand Ranch Integrated Banking Project Final EIR

1. Introduction

This document is Addendum No. 1 to the Final Environmental Impact Report (EIR) prepared by Rosedale-Rio Bravo Water Storage District (Rosedale) and Irvine Ranch Water District (IRWD) for the Strand Ranch Integrated Banking Project. The Final EIR evaluated the potential environmental effects of the Project, which proposed construction of groundwater banking facilities at Strand Ranch, including recharge basins, conveyance channels, and recovery wells. The Final EIR was certified on May 27, 2008 by Rosedale's Board of Directors, which acted as the Lead Agency pursuant to the California Environmental Quality Act (CEQA) (*CEQA Guidelines* (Title 14, California Code of Regulations, Section 15300 et. seq.) §15090). The Final EIR was approved on May 27, 2008 by IRWD's Board of Directors, which acted as the Responsible Agency. A Notice of Completion for the Final EIR was filed with the county clerks of both Kern County and Orange County.

Rosedale and IRWD are proposing to make changes to the project description for the Strand Ranch Integrated Banking Project. Under CEQA, an addendum may be prepared when minor modifications are proposed for a project that has already been approved and when no additional significant environmental impacts would result (*CEQA Guidelines*, §15164, 15162, 15163). This Addendum No. 1 evaluates whether any new significant impacts would result from implementation of the two proposed modifications.

2. Purpose of Addendum

Under CEQA, the lead agency or a responsible agency shall prepare an addendum to a previously-certified EIR if some changes or additions are necessary to the prior EIR, but none of the conditions calling for preparation of a subsequent or supplemental EIR have occurred (*CEQA Guidelines* §15164). Once an EIR has been certified, a subsequent EIR is only required when the lead agency or responsible agency determines that one of the following conditions has been met:

- (1) Substantial changes are proposed in the project, or substantial changes occur with respect to the circumstances under which the project is undertaken, which require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects (CEQA Guidelines §15162(a)(1), (2));

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- (2) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
- a. The project will have one or more significant effects not discussed in the previous EIR;
 - b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative (*CEQA Guidelines* §15162(a)(3)).

If one or more of the conditions described above for a subsequent EIR exist, but only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation, then the lead agency may prepare a supplement to an EIR, rather than a subsequent EIR (*CEQA Guidelines* §15163(a)).

CEQA recommends that a brief explanation of the decision to prepare an addendum rather than a subsequent or supplemental EIR be included in the record (*CEQA Guidelines* §15164(e)). This Addendum has been prepared because the proposed modifications to the Strand Ranch Integrated Banking Project do not meet the conditions for a subsequent or supplemental EIR. This Addendum explains why the proposed modifications would not result in new significant environmental effects or result in a substantial increase in the severity of previously-identified significant effects. There is no new information that would show that the proposed modifications would have new effects or more severe effects on the environment. This Addendum provides new information to show that the proposed modifications would not have any adverse environmental effects and would not change the conclusions of the previously-certified Final EIR.

An addendum does not need to be circulated for public review, but rather can be attached to the final EIR (*CEQA Guidelines* §15164(c)). Prior to initiating the modified Project, the IRWD Board of Directors will consider this Addendum together with the Final EIR and make a decision regarding the modified Project (*CEQA Guidelines* §15164(d)).

3. Integrated Banking Project Overview

The Rosedale-Rio Bravo Water Storage District as the Lead Agency, in consultation with Irvine Ranch Water District as a Responsible Agency, prepared and certified the Final EIR for the Strand Ranch Integrated Banking Project in 2008. The purpose of the Project was twofold: to augment the recharge and extraction capacity of Rosedale's Groundwater Storage, Banking,

Exchange, Extraction and Conjunctive Use Program, and to provide water supply reliability and redundancy to IRWD customers.

The Project is located on Strand Ranch in western Kern County, California. Strand Ranch is owned by IRWD and consists of approximately 611 acres of land six miles west of the City of Bakersfield. Strand Ranch has been used for agriculture, including production of cotton, wheat, alfalfa, garlic and almonds. Strand Ranch is under a Williamson Act contract, pursuant to the California Land Conservation Act of 1965. The Williamson Act contract restricts land use activities on Strand Ranch to agricultural uses and other compatible uses as determined by Kern County, such as groundwater recharge.

The Project integrates Strand Ranch into Rosedale's existing Conjunctive Use Program. Groundwater banking facilities, including recharge basins, conveyance channels, and recovery wells, are being developed on Strand Ranch to recharge and recover up to 17,500 acre-feet per year (afy) for IRWD. All groundwater banking facilities on the Strand Ranch will be owned by IRWD and operated and maintained by Rosedale for the duration of the Project. When not in use by IRWD, the groundwater banking facilities could also be used by Rosedale to serve its existing commitments. In 2004, Rosedale entered into a Memorandum of Understanding (MOU) with the Kern County Water Agency (KCWA) and other Adjoining Entities in the Kern Fan area. The MOU provides guidelines for operation and monitoring of Rosedale's Conjunctive Use Program. The MOU was amended on January 1, 2003 to include the Project. The Project is subject to and will be consistent with the conditions of the MOU.

IRWD has completed construction of 502 acres of groundwater recharge ponds on Strand Ranch, as described in the Final EIR, and the facilities necessary to divert water from the Cross Valley Canal (CVC). In addition, groundwater wells and pipelines that will be used to recover banked water are currently being constructed and are expected to be completed by the middle of 2011. In addition, the Project provides flexibility for IRWD to construct and Rosedale to pump from up to three additional offsite wells within the Rosedale service area. The Project wells on and off the Strand Ranch could be used by Rosedale when not needed by IRWD; however, production from the wells located on the Strand Ranch for any purpose will not exceed 17,500 afy. Extraction on Strand Ranch by IRWD will be limited to the amount previously recharged onsite by IRWD less losses as specified in the MOU. Extraction on Strand Ranch by Rosedale also will be limited to the amount previously recharged by Rosedale in its service area less losses as specified in the MOU.

4. Proposed Modifications to Project Description

Offsite Recharge

The project description in the Final EIR allows Rosedale to use the Strand Ranch wells to recover groundwater on behalf of itself that has been recharged offsite at other facilities within the Rosedale service area. The project description limits IRWD to recharge water only at Strand Ranch for recovery onsite or at three other wells within Rosedale's service area. Irrespective of

the recharge location, the project description limits groundwater recovery at Strand Ranch to 17,500 afy for both Rosedale and IRWD combined.

For purposes of operational flexibility, Rosedale and IRWD are proposing to modify the operation of the Strand Ranch Integrated Banking Project to allow both IRWD and Rosedale to recharge water offsite at other existing facilities within Rosedale's service area and recover it at Strand Ranch. (See Figure 2-1 in the Final EIR for location of offsite recharge facilities.) The annual combined extraction limit at Strand Ranch of 17,500 af would remain unchanged.

Conventional Farming

In addition, Rosedale and IRWD are proposing to modify the operation of the Integrated Banking Project to allow conventional (non-organic) farming on Strand Ranch, most likely carrot farming. During interim periods when the basins are not used for active recharge operations, the Final EIR stated the recharge basins and berms would be used for organic farming or grazing for a minimum of eight months per year, in accordance with the Williamson Act contract for Strand Ranch and Kern County's Agricultural Standard Uniform Rules for agricultural preserves. As the property owner, IRWD would lease the Strand Ranch site to a contract farmer to allow agricultural operations to be implemented within the recharge basins.

The proposed modification would not result in any changes to the proposed design or construction of Integrated Banking Project facilities at Strand Ranch. Conventional farming would be in compliance with all applicable regulatory requirements of the U.S. Environmental Protection Agency (USEPA), California Department of Pesticide Regulation (DPR), and Kern County Agricultural Commissioner (CAC). There would be no mixing, loading, or storing of pesticides onsite at Strand Ranch. There would be no rinsing of spray equipment or pesticide containers onsite at Strand Ranch. There would be no maintenance of spray equipment that could result in a pesticide or pesticide residue spill onsite at Strand Ranch. Transport of all restricted materials would be in accordance with federal, state and local hazardous materials regulations. The contract farmer would be required to inform Rosedale and IRWD and the CAC in the event of any accidental spill or inappropriate application of pesticides onsite at Strand Ranch. The contract farmer would be required to remediate completely and dispose of properly all contaminated soil to prevent the transport of pesticides into the groundwater and protect public health.

Strand Ranch Recharge Basins

Carrot farming operations on Strand Ranch could include the use of restricted or unrestricted materials, including pesticides that are listed in Title 3, California Code of Regulations (3 CCR), Section 6800(a) and/or 6800(b). In accordance with DPR regulations, Section 6800(a) pesticides would be restricted from application below the high water mark inside the Strand Ranch recharge basins, unless the pesticide is applied six months or more before the basin is used for groundwater recharge. Section 6800(b) pesticides could be used within the Strand Ranch recharge basins without restriction, also in accordance with DPR regulations.

Rosedale and IRWD would require the contract farmer to obtain a permit from the CAC for application of restricted materials and to comply with all conditions of the permit in order to ensure the protection of human health and the environment. The contract farmer also would be required to notify the CAC 24 hours prior to application of any restricted materials on Strand Ranch.

Strand Ranch Extraction Wells

As described in the Final EIR, the new extraction wells constructed onsite would be large-diameter (18 to 24 inches) steel-cased wells. Wellheads would consist of riser pipes, discharge pipes, wellhead motors, submersible pumps, and other appurtenances. Wellheads would be protected by lockable, roofed, metal-mesh pumphouses that are approximately four feet in height and constructed on 12-foot square concrete pads. As stated above, there would be no mixing, loading, or storing of pesticides, no rinsing of spray equipment or pesticide containers, and no maintenance of spray equipment onsite at Strand Ranch. In addition, if the wellheads are not protected from runoff or surface water contact, then the application of preemergent herbicides from the 6800(a) and 6800(b) lists would be prohibited within 100 feet of unprotected wells.

5. Regulatory Background

Pesticides Commonly Used in Carrot Farming

Broad-spectrum fumigants, fungicides, and herbicides are typically applied as part of conventional farming practices. Fumigants are used prior to planting a crop to control weeds, nematodes, and fungi. Crops are planted after these chemicals have degraded. Fumigants work best when they are kept close to the soil surface, and require water (via irrigation) to become active within the soil profile. Herbicides and fungicides are used to prevent weeds and soil and plant-based fungi. They can be applied a variety of ways, including: liquid foliar sprays, dry wettable powders, and granular band treatments.

Table 1 includes a summary of pesticides associated with carrot production in California and includes information regarding application amounts, groundwater contaminant potential, and chemical attributes. The pounds of pesticides applied are taken from the Pesticide Action Network (PAN, 2009), which uses California's Pesticides Use Reporting (PUR) Database. PAN information regarding groundwater contamination potential, regulatory status, and chemical attributes are taken from a variety of sources (e.g. CA DPR/PUR, Manufacturer's MSDS). These pesticides are among the top pesticides applied to carrots in California in 2007 (PAN, 2009); this list is not exhaustive and other pesticides may be used in addition to those noted above.

DPR maintains a list of registered pesticides known to cause groundwater contamination in California; these pesticides are listed in Title 3, California Code of Regulations (3 CCR), Section 6800(a): atrazine, bantazon, bromacil, diuron, norflurazon, prometon, simazine. Section 6800(a) pesticides have certain use restrictions. Section 6800(a) pesticides are prohibited below the high water mark inside artificial recharge basins, unless the pesticide is applied six months or more before the basin is used to recharge groundwater (3 CCR Section 6487.1).

**TABLE 1
PESTICIDES APPLIED TO CARROTS IN CALIFORNIA**

Pesticide Name	Trade Name	Pounds Applied in 2007	Groundwater Contamination Potential	Regulatory Lists	Chemical Attributes
Fumigants					
Metam-sodium	Vapam, Busan	4,457,630	Unknown	None	Water soluble; Half-life: Hydrolysis half-life, avg 3.17 days; aerobic soil half-life, avg 0.02 days, anaerobic soil half-life: 1.0 days
1,3-dichloropropene	Telone, InLine, D-D92	1,088,830	Known GW contaminant by the PAN Database*	CA Prop 65 known carcinogen	Water solubility: 2,250 mg/L; Koc: 0.39; Half-life: Hydrolysis half-life 21.8 days, aerobic soil half-life 32.7 days, no info for anaerobic soil half-life
Metam-potassium	Sectagon, K-Pam	304,726	Unknown	Unknown	Water soluble
Chloropicrin	Chlor-O- Pic, Metapicrin, Timberfume, Tri-Clor	7,438	Potential GW Contaminant	3 CCR 6800(b)	Water solubility: 2,000 mg/L; Koc: 25; Half life: hydrolysis half-life 191 days, aerobic soil half-life 3 days, anaerobic soil half-life not given
Herbicides					
Linuron	Lorox	48,170	Potential GW Contaminant	3 CCR 6800(b)	Water solubility: 77 mg/L; Koc: 341; Half life: hydrolysis half-life 262 days, aerobic soil half-life 22 days, anaerobic soil half-life 102 days
Pendimethalin	Prowl	16,523	Unknown	None	Water solubility: 0.28 mg/L, Koc: 310.6; Half-life: Hydrolysis half-life 28 days, aerobic soil half-life 1,320 days, anaerobic soil half-life 60 day
Trifluralin	Treflan	14,117	Unknown	None	Water solubility: 0.30 mg/L, Koc: 121; Half-life: Hydrolysis half-life 32 days, aerobic soil half-life 169 days, anaerobic soil half-life 37 days
Fungicides					
Sulfur	n/a	603,46	Unknown	None	Not listed by PAN
Chlorothalonil	Daconil, Bravo, Clortosip	24,964	Potential GW Contaminant	3 CCR 6800(b)	Water solubility: 1.0 mg/L, Koc: 1,787; Half-life: Hydrolysis half-life 49 days, aerobic soil half-life 35 days, anaerobic soil half-life 8 days
Iprodione	Kidon, Rovral, Chipco	21,413	Potential GW Contaminant	3 CCR 6800(b)	Water solubility: 12.0 mg/L; Half-life: Hydrolysis half-life 5 days, aerobic soil half-life 64 days, anaerobic soil half-life 32 days
Copper hydroxide	n/a	15,279	Unknown	None	Not listed by PAN
Mefenoxam	Ridomil Gold	13,631	Unknown	None	Not listed by PAN
Coper oxide	n/a	7,375	Unknown	None	Not listed by PAN
*Chemical is a known groundwater contaminant in other states or countries					

DPR also maintains a list of pesticides that have the potential to move to, but are not currently found in groundwater, listed in 3 CCR 6800(b). Section 6800(b) pesticides are not prohibited for use in artificial recharge basins (DPR, 2009).

DPR also has regulations pertaining to wellhead protection and the use of pesticides, as listed in 3 CCR 6609 (DPR, 2009). These measures apply to all wells (irrigation, domestic, municipal, monitoring, abandoned, dry, or drainage wells) where pesticides are mixed, loaded, rinsed, or otherwise used within 100 feet of the well. The following management measures are given by DPR to protect wellheads:

- Wells protected from runoff:
 - The well should be sited so that no surface water runoff can contact the wellhead including the concrete base, or;
 - A berm should be constructed adjacent to the wellhead to prevent movement of surface water to the wellhead. Preemergent herbicides from the 6800(a) and 6800 (b) lists are prohibited between the berm and the wellhead.

- Wells not protected from runoff: The following activities are prohibited within 100 feet of an unprotected well:
 - Mixing, loading, and storing pesticides,
 - Rinsing of spray equipment or pesticide containers,
 - Maintenance of spray equipment that could result in a pesticide or pesticide residue spill,
 - Application of preemergent herbicides from the 6800(a) and 6800 (b) lists.

Restricted Material Pesticides

The State of California maintains a list of pesticides that are especially dangerous to human health or the environment if used incorrectly, commonly called restricted materials. These pesticides are listed in 3 CCR 6400. DPR puts special controls and limitations on these pesticides; furthermore, the purchase or use of restricted materials for agricultural purposes requires a permit from the CAC. Use requirements for these pesticides are given in 3 CCR 6445 through 6489. The permit application must list the types of restricted materials to be used, the areas to be treated, their location and size, crops to which the pesticide will be applied, pest problems, and the type of pesticide application method. Surrounding areas that could be harmed by pesticide application must also be described or shown on a map. The CAC reviews the permit to decide if pesticide application will have an impact on human health or the surrounding environment; if the CAC believes harm may be likely, he or she can request the applicant to evaluate pesticide alternatives or impose extra controls (i.e. permit conditions) in addition to those already on the pesticide label or in regulations. If the CAC determines a pesticide cannot be used safely, he or she may deny the permit. (DPR, 2008)

Several of the pesticides used for carrot farming in California are on the 3 CCR 6400 (i.e. restricted materials) list and would require a restricted materials permit to be applied for agriculture. These chemicals include, but are not limited to:

- Carbaryl

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- Chloropicrin
 - 1,3-Dichloropropene
 - Metam-sodium
 - Metam-potassium
 - Methomyl
 - Methyl-parathion
 - Paraquat

Restricted materials permits are generally issued for one year, and require applicants to notify the CAC 24 hours prior to the scheduled pesticide application each time they plan to apply a restricted material. The CAC may inspect a site if he or she deems it necessary.

If a pesticide is not on the restricted materials list (3 CCR 6400), a farmer does not need a permit to apply it unless a local permit is required.

6. Analysis of Potential Environmental Impacts Associated with the Proposed Modifications

The proposed modifications would not change the environmental setting, regulatory framework, impact discussion, mitigation measures, or significant conclusions for the following resource areas as currently described in the Final EIR: Aesthetics; Air Quality; Biological Resources; Cultural Resources; Geology, Soils and Mineral Resources; Land Use, Planning and Recreation; Noise; Transportation and Traffic; and Utilities and Public Services.

Hydrology, Groundwater Resources, and Water Quality

Offsite Recharge

The Final EIR analyzes the potential for Project operations to affect groundwater levels at neighboring wells (Impact 3.8-1 and Impact 3.8-3). Under Impact 3.8-1, the Final EIR describes the results of groundwater modeling conducted for the Project to assess the potential for operation of the Strand Ranch wells to affect neighboring groundwater extraction wells. The modeling includes both a 7-well pumping scenario and a 3-well pumping scenario. Assuming pumping occurs continuously over a 250-day period, which is required to achieve the maximum annual production of 17,500 af, the 7-well pumping scenario concludes that the highest drawdown potential would occur at two Kern Water Bank Authority (KWBA) wells immediately adjacent to the Strand Ranch property.

Pumping at the maximum rate would result in temporary drawdown of between 3 and 29 feet at land sections with neighboring KWBA wells. Given the average depth of the KWBA wells (900 feet) and the historic groundwater fluctuations in the region (up to 140 feet), the Final EIR concludes that the Project's potential to lower water surface elevations by up to 29 feet would not significantly impact the function of neighboring wells. The temporary impacts to neighboring wells would be subject to the existing commitments and conditions of the MOU, which provides

language that mitigates the potential for adverse effects of adjoining entities. Under the MOU, the groundwater banking operations are to be “consistent with avoiding, mitigating or eliminating to the greatest extent practicable, significant adverse impacts” (KCWA, 2004). Potential mitigation measures are identified in the MOU; groundwater recovery operations at Strand Ranch would adhere to the requirements of Rosedale’s current MOU. The Final EIR does not require additional mitigation beyond the existing commitments contained within the MOU.

The groundwater modeling conducted for the Final EIR assessed the impacts of operating the Strand Ranch wells, irrespective of any groundwater recharge. Thus, the analysis provided in the Final EIR evaluated the impacts of Rosedale recharging water offsite and recovering groundwater onsite at Strand Ranch wells. As such, the same groundwater modeling would characterize impacts associated with the proposed modification to the Project, which would involve offsite recharge by IRWD and groundwater recovery onsite at Strand Ranch wells. As explained in the Final EIR (page 11-10, Comment KWBA-IIf), Rosedale’s service area overlies a continuous aquifer that is in direct connection with the Strand Ranch as well as other water users in the region. The impact analysis in Section 3.8.4 of the Final EIR assesses extraction of up to 17,500 afy from Strand Ranch irrespective of water recharged at Strand Ranch. As such, the proposed modifications to the Project would not result in any new adverse impacts to groundwater levels or neighboring wells.

Under Impact 3.8-3, the Final EIR describes the results of groundwater modeling conducted for the Project to assess the potential for operation of the Strand Ranch recharge basins to result in groundwater mounding and impact underground structures, impair recharge efforts of adjacent groundwater banking operations, or affect neighboring groundwater extraction wells. The recharge modeling studies included the following scenarios:

- Annual recharge volume of 17,500 afy: Recharge was simulated in a 450 acre recharge pond with different infiltration rates of 0.20, 0.25, and 0.30 ft/day for as many days as it takes to achieve an annual recharge volume of 17,500 af/year.
- Annual recharge duration of 365 days: Recharge was simulated in a 450 acre recharge pond with different infiltration rates of 0.20, 0.30, and 0.40 ft/day for 365 days. These scenarios simulate use of all recharge basins on Strand Ranch during wet hydrologic periods when high-flow Kern River water would be available year round and recharge basins would be kept full for 365 days per year.

The Final EIR concludes that Strand Ranch recharge operations would result in a temporary increase in groundwater surface elevations that range between one and 36 feet. Groundwater levels in the area have been recorded as shallow as 20 feet below ground surface (bgs) and as deep as 270 feet bgs (Final EIR page 3.8-26). A high groundwater table can result in a reduced capacity for groundwater banking, cause flooding of lower lying areas, and impact subsurface structures, such as those on Strand Ranch associated with the CVC. Mitigation Measure 3.8-1 imposes recharge restrictions on the Strand Ranch during periods of time when the groundwater levels are extremely shallow. With this mitigation, impacts to subsurface structures from recharging water would be less than significant (Final EIR, page 3.8-27). The Final EIR also

concludes that adverse effects of higher water surface elevations to adjacent groundwater banking operations or extraction wells are covered under the MOU. The Project is subject to the existing commitments and conditions of the MOU, which provides language that mitigates the potential for adverse affects of adjoining entities. Groundwater recharge operations at Strand Ranch will adhere to the requirements of Rosedale's current MOU. No mitigation is required beyond the existing commitments contained within the MOU.

Additional groundwater modeling was conducted for this Addendum No. 1 to simulate water level impacts from the proposed modifications for offsite recharge, as described in Section 4. To simulate these impacts, a numerical groundwater flow model was developed. Details of the model, model input data and results are presented in **Appendix A**. The simulations were conducted without groundwater extraction, resulting in the most conservative or severe analysis of groundwater mounding under current water level conditions. The simulated initial water level in the unconfined aquifer roughly reflect Strand Ranch water level conditions in October 2010, where groundwater levels are approximately 200 feet below the ground surface and the groundwater gradient varies from 0.1 to 0.4 % to the west and northwest.

Scenario 1 simulated the recharge of 17,500 acre-feet of water at the Strand Ranch and the resultant mounding and mound dissipation within the model domain. A conservative infiltration rate was set at approximately 0.23 feet per day, requiring a recharge duration of 5 months.

The results of the simulation show a maximum water level mound of approximately 38 feet beneath the Strand Ranch recharge ponds and 0 feet at the Allens Road Basins at the conclusion of recharge. Following the cessation of recharge the mound both flattens and widens as recharge water moves laterally and vertically away from the Strand Ranch in an elliptical pattern toward the northwest. Three months after the cessation of recharge the mound height beneath the Strand Ranch is approximately 13 feet, and within 4 miles of the Strand Ranch the groundwater level has increased approximately 2 feet. Six months after the cessation of recharge the mound height beneath the Strand Ranch is approximately 10 feet, and within 4 miles of the Strand Ranch the groundwater level remains approximately 2 feet higher than initial conditions. Twelve months after the cessation of recharge the mound height beneath the Strand Ranch is approximately 9 feet, and within 4 miles of the Strand Ranch the groundwater level has increased approximately 2 to 4 feet. The groundwater level at the Allens Road Basins remains unchanged from the initial condition throughout the simulation period. In the absence of groundwater extraction, the mound will continue to slowly dissipate to the initial condition.

Scenario 2 simulated the recharge of 17,500 acre-feet of water at the Allens Road Basins and the resultant mounding and mound dissipation within the model domain. A conservative infiltration rate was set at approximately 0.23 feet per day, requiring a recharge duration of 14 months. Since the Allens Road Basins are smaller than the Strand Ranch Basins, it take 8 months longer to recharge the same amount of water at 0.23 feet per day.

The results of the simulation show a water level mound of approximately 14 feet beneath the Allens Road Basins and approximately 5 feet at the Strand Ranch at the conclusion of recharge. Following the cessation of recharge the mound both flattens and widens as recharge water moves

laterally and vertically away from the Allens Road Basins toward the west and northwest. Three months after the cessation of recharge the mound height beneath the Allens Road Basins is approximately 3 feet, and the maximum mound height is approximately 6 feet one mile northwest of the Strand Ranch. Six months after the cessation of recharge the mound beneath the Allens Road Basins is less than 2 feet, and the maximum mound height is approximately 6 feet with a northwest trending lenticular shape. Twelve months after the cessation of recharge, the 6-foot high mound continues to spread beneath the model domain in a northwest direction.

The results of this analysis show water level impacts beneath the Strand Ranch from recharge at either Strand Ranch or offsite at Allens Road Basins are not significantly different. Table 2 summarizes the water level mounding beneath the Strand Ranch during recharge under Scenario 1 (Strand Ranch) and Scenario 2 (Allens Road Basins). Three months after the cessation of recharge at the Strand Ranch, the mound height beneath the Strand Ranch is 13 feet. Three months after the cessation of recharge at Allens Road Basins, the mound height beneath the Strand Ranch is 5 feet; a difference of only 8 feet. At 12 months post-recharge, the mound height difference beneath the Strand Ranch is only 3 feet.

Table 2: Summary of Recharge Mounding

Elapsed Time from End of Recharge	Strand Ranch Mound Height		Mound Height Difference between Recharge at Strand Ranch vs. Allens Road Basins
	Scenario 1 Strand Ranch Recharge	Scenario 2 Allens Road Recharge	
(months)	(feet)		
0	38	5	33
3	13	5	8
6	10	6	4
12	9	6	3

Since the Allens Road Basins are the furthest away from the Strand Ranch, the two scenarios represent a worst case scenario when comparing conditions on the Strand Ranch subsequent to recharge at another location within the Rosedale service area versus recharge on the Strand Ranch. The modeling results for the above scenarios indicate that water levels at the Strand Ranch subsequent to recharge at the Strand Ranch or any other recharge facility in the Rosedale service area will not be significantly different. In addition, the water level impact of recharge at the Strand Ranch or any other Rosedale recharge facility location is insignificant compared to historical water level fluctuations within the model domain.

The modeling results shown in Table 2 indicate that recharge by Rosedale and/or IRWD at any of the recharge facilities within the Rosedale service area or the Strand Ranch will result in insignificant differences in water levels at the Strand Ranch prior to any recovery of water from the Strand Ranch. The Allens Road Basins are the furthest Rosedale recharge facilities from the Strand Ranch. Similar model scenarios with recharge occurring at other Rosedale facilities would yield the same conclusions. It is concluded from this additional modeling work that recovery events at the Strand Ranch would be initiated from the same conditions irrespective of where the water is recharged by IRWD and/or Rosedale within Rosedale's service area or the Strand Ranch.

The groundwater modeling conducted for the Final EIR already assessed the impacts of operating the Strand Ranch Wells, irrespective of any groundwater recharge and evaluated the impacts of Rosedale recharging water offsite of the Strand Ranch and recovering water on the Strand Ranch. The impact analysis in Section 3.8.4 of the Final EIR assesses extraction of up to 17,500 afy from Strand Ranch irrespective of water recharged at Strand Ranch. As such, the proposed modifications to the Project would not result in any new adverse impacts to groundwater levels or neighboring wells. The additional modeling work presented in the Addendum No. 1 substantiates that recovery events at the Strand Ranch would be initiated from the same conditions irrespective of where the water is recharged by IRWD and/or Rosedale within Rosedale's service area or the Strand Ranch and this does not change any conclusion of the Final EIR. The proposed modification would not create new groundwater mounding or drawdown impacts.

Any adverse effects on water surface elevations at adjacent groundwater banking operations or extraction wells are covered under the MOU. No mitigation is required beyond the existing commitments contained within the MOU.

Conventional Farming

The Final EIR analyzes the potential for the Integrated Banking Project to affect hydrology and water quality for both surface water and groundwater. As described in Chapter 3.8, potential impacts to surface waters include less than significant impacts to flooding in the event that the earthen berms surrounding the recharge basins fail, and less than significant storm water-induced erosion and sedimentation during construction with implementation of the BMPs included in Mitigation Measure 3.8-2.

Regarding groundwater, the Final EIR stated that any groundwater mounding that results due to the Project would have less than significant impacts to groundwater quality and groundwater levels at neighboring wells. The Project would have less than significant impacts to underground structures and adjacent groundwater banking operations with implementation of Mitigation Measure 3.8-1, which requires IRWD and Rosedale to develop and implement a groundwater monitoring and operations plan to avoid impacts to CVC facilities. In addition, implementation of Mitigation Measure 3.8-3 would ensure that the quality of groundwater extracted from Strand Ranch meets the pump-in water quality requirements of the CVC and California Aqueduct by requiring water quality testing prior to introducing product water into either conveyance structure.

The proposed modification would introduce the potential to affect groundwater quality underlying Strand Ranch due to transport of pesticides applied during conventional farming operations when basins are not otherwise flooded and being used for active groundwater recharge. Residual pesticide concentrations from application during farming could be transported to the underlying groundwater table during active recharge operations where the cultivated areas are flooded with imported surface waters. As described in the Final EIR, in some areas within the Kern Fan region, agrichemical compounds, such as ethylene dibromide, have been detected in the groundwater. However, ethylene dibromide has nearly disappeared from current agricultural uses.

The proposed modification would require the contract farmer to comply with all USEPA, DPR and CAC regulations and requirements to protect public health and groundwater quality. Rosedale and IRWD would require the contract farmer to obtain and comply with the conditions of any necessary restricted material permits from the CAC for pesticide application within artificial recharge basins. Rosedale and IRWD would require the contract farmer to comply with all DPR regulations for pesticide application within artificial recharge basins and especially near any wellheads. Compliance with such regulations and requirements would minimize impacts to groundwater quality.

In addition, the proposed modification would be subject to the existing commitments and conditions of the MOU, which includes approval of the proposed modification by the Monitoring Committee (of which Rosedale is a member) and a requirement for the Monitoring Committee to develop and implement a Monitoring Plan to monitor groundwater levels and water quality. The Monitoring Committee is responsible for developing procedures to identify, verify, avoid, eliminate or mitigate significant adverse impacts that could result due to the Project, including adverse impacts to groundwater quality due to pesticide applications. In addition, Mitigation Measure 3.8-3, as included in the Final EIR, requires IRWD and Rosedale to conduct water quality testing of extracted groundwater and would serve to verify that agricultural operations onsite at Strand Ranch do not affect the quality of groundwater extracted and conveyed in any nearby aqueducts. Water quality testing would include testing for agricultural chemicals, such as pesticides. No additional mitigation measures would be required. Impacts would be considered less than significant.

Cumulative Impacts

The Final EIR concluded that the Project would have no long-term cumulative impacts to groundwater resources (Chapter 4.0). The proposed modifications would not change the conclusions of the Final EIR. The project modifications have been designed to protect groundwater quality and to avoid introduction of pesticides into the groundwater basin. There would be no cumulatively considerable impacts to groundwater associated with the proposed modifications.

Hazards and Hazardous Materials

Conventional Farming

The Final EIR assesses the potential hazards associated with the construction and operation of the Integrated Banking Project. As described in Chapter 3.7 of the Final EIR, during construction of the Project, contaminated soils could be encountered due to historical storage and use of pesticides onsite for agricultural operations. The Final EIR includes Mitigation Measure 3.7-1 to ensure a Phase I Site Assessment is conducted and any identified hazardous or contaminated soils are removed from Strand Ranch and disposed appropriately. In addition, project operation could cause an increase in airborne insect populations due to the creation of new standing pools of water. This could contribute to a public health hazard due to potential increases in mosquito populations and disease vectors. The Final EIR includes Mitigation Measure 3.7-2 to ensure

IRWD and Rosedale develop and implement insect control measures to prevent any public health hazards.

The proposed modifications to the Integrated Banking Project would allow continued use of agricultural pesticides onsite at Strand Ranch, similar to historical conditions, once the recharge basins are constructed. Strand Ranch has been used for conventional agricultural production for over 30 years. Pesticides used for carrot farming could include compounds that: (1) are considered restricted materials by the State of California, (2) have the potential to move to, but are not currently found in groundwater, per 3 CCR 6800(b), and (3) are considered listed pesticides that are known to cause groundwater contamination in California, per 3 CCR 6800(a).

The proposed modification would not alter the existing conditions of the project site, which includes the use of pesticides for agricultural production, historically including cotton, wheat, alfalfa, garlic and almonds. The use of agricultural pesticides on Strand Ranch would be in accordance with all USEPA and DPR regulations to ensure the protection of public health and the environment. Rosedale and IRWD would require the contract farmer to obtain a permit from the CAC for application of restricted materials and to comply with all conditions of the permit in order to ensure the protection of human health and the environment and to ensure pesticides are being used and applied in compliance with manufacturer's specifications. Rosedale and IRWD also would require the contract farmer to notify the CAC 24 hours prior to application of any restricted materials on Strand Ranch.

The accidental release or spill of pesticides onsite at Strand Ranch during conventional agricultural operations could result in soil or groundwater contamination. As stated above, under the modified project, there would be no mixing, loading, or storing of pesticides, no rinsing of spray equipment or pesticide containers, and no maintenance of spray equipment onsite at Strand Ranch. This would minimize the potential for agricultural operations to result in contamination of soils and groundwater at the project site. Nonetheless, in the event of any accidental spill or inappropriate application of pesticides onsite at Strand Ranch, the contract farmer would be required to remediate and dispose of properly all contaminated soil to prevent the transport of pesticides into the groundwater and protect public health. Impacts due to routine transport, storage, use, or disposal of hazardous materials, or through accidental release of hazardous materials would be considered less than significant.

Cumulative Impacts

The Final EIR concluded that the Project would have no cumulative impacts due to hazardous materials (Chapter 4.0). The proposed modification would not change the conclusions of the Final EIR. There would be no cumulatively considerable hazards associated with the proposed modification.

Agricultural Resources

Offsite Recharge

The Final EIR assesses the impacts of the Integrated Banking Project to agricultural resources. As described in Chapter 3.2 of the Final EIR, Strand Ranch is zoned as Exclusive Agriculture, which includes groundwater recharge facilities as a permitted use (County Zoning Ordinance, Section 19.12.020 (F)). The entire Strand Ranch is within a County-designated agricultural preserve and considered Prime Agricultural Land under an existing Williamson Act contract. The Project would affect 538 of the 611 acres that comprise Strand Ranch, 502 acres of which would be converted to recharge facilities that would be made available for farming or livestock grazing for a minimum of eight months per year. The remaining 36 acres affected by the Project would convert existing farmland to ancillary infrastructure to support the recharge facilities (recovery wells, supply channels, and dirt roadways).

Kern County's Agricultural Preserve Standard Uniform Rules state that groundwater recharge operations are compatible land uses on agricultural preserves if the preserve is used for commercial agriculture for at least eight months out of a twelve month period (Kern County Planning Department, 2007). Farming and livestock grazing are considered compatible agricultural uses. Therefore, the Final EIR concludes that the Project would have no impact to the Williamson Act contract and would not result in the conversion of Prime and Unique Farmland to non-agricultural use. The conversion of 36 acres of farmland for ancillary infrastructure would be considered less than significant by Kern County.¹

The proposed modification to the Project would provide operational flexibility to Rosedale and IRWD to ensure that Strand Ranch can be used for commercial agriculture for at least eight months out of a 12 month period. The proposed modifications would allow recharge to occur offsite if necessary in order to allow farming or grazing to occur instead of recharge to remain in compliance with the Williamson Act and County Agricultural Preserve Standards. The proposed modifications would not result in new or more severe environmental impacts to agricultural resources.

Conventional Farming

The proposed modification to the Integrated Banking Project would not result in new impacts to agricultural resources. The proposed modification would not change the amount or type of land use being converted from agricultural uses to groundwater recharge basins. The modified project operation would allow conventional farming in the recharge basins in accordance with all applicable federal, state, and county regulations and would be considered a compatible agricultural use and land use within the County-designated agricultural preserve and in accordance with the Williamson Act contract. No additional mitigation measures are necessary.

¹ Lorelie Oviatt, Kern County Planning Department, Personal Communication, September 24, 2007.

Cumulative Impacts

The Final EIR concluded that the cumulative impacts to agricultural resources associated with the Project would be less than significant (Chapter 4.0). The proposed modification would not change the conclusions of the Final EIR. There would be no cumulatively considerable impacts to agricultural resources associated with the proposed modifications.

6. Conclusions

Section 15164(a) of the *Guidelines* states the following:

“The lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a Subsequent EIR have occurred.”

The proposed modifications to the original Project would not result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Furthermore, new information associated with the proposed modifications do not indicate that the Project will have one or more significant effects not discussed in the certified EIR; that significant effects previously examined will be substantially more severe than shown in the certified EIR; that mitigation measures or alternatives previously found not to be feasible would in fact be feasible; or that mitigation measures or alternatives which are considerably different from those analyzed in the certified EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternative. Accordingly, an addendum was prepared as opposed to a negative declaration or a subsequent environmental impact report. Rosedale and IRWD are issuing this Addendum in accordance with the *State CEQA Guidelines* (Section 15164).

7. References

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