MITIGATION MONITORING AND REPORTING PROGRAM FOR THE RELOOC STRATEGIC PLAN-FRANK R. BOWERMAN LANDFILL IMPLEMENTATION EIR

1.0 INTRODUCTION

The California Environmental Quality Act (CEQA) requires a lead or public agency that approves or carries out a project for which an environmental impact report has been certified which identifies one or more significant adverse environmental effects and where findings with respect to changes or alterations in the project have been made, to adopt a "…reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment" (CEQA, Public Resources Code Sections 21081, 21081.6). A Mitigation Monitoring and Reporting Program (MMRP) is required to ensure that adopted mitigation measures are successfully implemented for the Regional Landfill Options for Orange County (RELOOC) Strategic Plan-Frank R. Bowerman Landfill Implementation Project. The County of Orange Integrated Waste Management Department (IWMD) is the Lead Agency for the proposed project and is responsible for implementation of the MMRP. This report describes the MMRP for the project and identifies the departments in the County of Orange that will be responsible for monitoring implementation of the individual mitigation measures in the MMRP.

2.0 MITIGATION MONITORING AND REPORTING PROGRAM

The MMRP for the project will be active through all phases of the project, including design, construction, and operation. The project will be developed in phases and may include permits required for implementation of project components. There are mitigation measures that must be continuously implemented throughout the development and operation of the project.

The attached table identifies the mitigation program required to be implemented by the respective County departments for the RELOOC Strategic Plan-Frank R. Bowerman Landfill Implementation Project. The table identifies those mitigation measures required by the IWMD to mitigate or avoid significant adverse impacts associated with the implementation of the project, the implementing action, the method of verification of mitigation, the timing of verification, and the individual responsible for monitoring compliance. The MMRP also includes a column that will be used by the compliance monitor (individual responsible for monitoring compliance) to document when implementation of the measure is completed. As individual mitigation measures are completed, the compliance monitor will sign and date the MMRP, indicating that the required mitigation measure has been completed for the subject period.

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LAND USE AND PLANNING					
No mitigation is required.	None required.	None required.	None required.	None required.	None required.
GEOLOGY AND SOILS					
MEASURE G-1 Landslides will be mitigated by exploration of the geometry of the failure surface, development of a remediation plan (removal of driving weight using grading equipment, construction of shear keys and/or buttresses and/or dewatering), and implementation of a remediation plan. Measures implemented will be similar to those performed in response to the 2002 NLC as described in the Geotechnical Investigation Report, Master Development Plan, FRB Landfill (GeoLogic Associates, 2004) and will be designed to limit impacts to off-site areas, avoid impacts to future landfill operations, and minimize potential hazards to on-site personnel.	Acceptance and implementation of a landslide remediation plan.	Confirmation of failure surface exploration. Confirmation of the landslide remediation plan.	Prior to completion of final design plans and specifications for the landslide remediation.	IWMD/Deputy Director, FRB Landfill	
MEASURE G-2 During construction of landslide remediation projects, it will be necessary to monitor landslide movement and groundwater levels in and around the landslide and to sequence construction in a manner that limits the extent of buttress backcut exposed at any one time, prior to completion of buttress construction.	Construction of landslide remediation projects.	Confirmation of landslide movement and groundwater level monitoring.	During landslide remediation.	IWMD/Deputy Director, FRB Landfill	
MEASURE G-3 Prior to construction of each phase of lateral expansion area, IWMD will be responsible for having additional geologic data obtained and subsequent slope stability analyses conducted to verify assumptions made for the stability analysis included in the Geotechnical Investigation Report, Master Development Plan, FRB Landfill, (GeoLogic Associates, 2004).	Acceptance of valid additional geologic data, through appropriate testing and subsequent analysis.	Confirmation of assumptions in the Geotechnical Investigation Report.	Prior to completion of final design plans and specifications.	IWMD/Deputy Director, FRB Landfill	

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MEASURE G-4 Prior to construction of each phased grading plan, IWMD will be responsible for having the excavation and grading plan meet stability requirements for all proposed cut, fill, and lined slopes. Slopes shall be designed to withstand the most credible earthquake or as required by current regulations. Liner design plans shall be submitted to the Santa Ana Regional Water Quality Control Board in a Design Report for approval.	Approval of Design Report by the Santa Ana Regional Water Quality Control Board after slope stabilization recommendations are accepted.	Inspection of liner installation by RWQCB.	Prior to construction of each phase.	IWMD/Deputy Director, FRB Landfill	
MEASURE G-5 Prior to obtaining a revised Solid Waste Facilities Permit and Waste Discharge Requirements for the expansion, the IWMD shall present a liner design concept in a Joint Technical Document (JTD) to be submitted to the RWQCB and LEA for approval and to the CIWMB for concurrence. As part of the JTD, the IWMD shall present the assumptions, methods, and calculations used to demonstrate seismic safety.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Prior to completion of final design plans and specifications.	IWMD/Deputy Director, FRB Landfill	
HYDROGEOLOGY AND WATER QUALITY					
MEASURE HW-1 As part of each new phase of development, a composite liner or an alternative to the prescriptive composite liner and leachate collection and removal system will be constructed in the lateral expansion area to intercept and collect leachate for storage and proper disposition (disposal off-site or use as dust control), as approved by the RWQCB. A subdrain system will be installed to intercept perched and bedrock groundwater below the liner. Horizontal drains may also be installed below the North-end Landslide Complex (NLC) for the purposes of reducing the forces driving the landslide and to bring the piezometric head level below the design grades. The existing NLC horizontal drains are expected to remain active through future landfill development and additional horizontal drains will be installed as necessary. The	Approval by RWQCB of prescriptive or alternative liner, leachate collection and removal system and subdrain in a Design Report.	Inspection by RWQCB.	Prior to completion of final design plans and specifications for each new phase of development.	IWMD/Deputy Director, FRB Landfill	

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prescriptive or alternative liner, leachate collection and removal system and subdrain will be approved by the RWQCB in a Design Report and will comply with federal and state requirements (27 CCR).					
MEASURE HW-2 As part of a Joint Technical Document to be prepared by IWMD prior to obtaining a revised Solid Waste Facilities Permit and Waste Discharge Requirements for the expansion, the liner design concept shall be submitted to the RWQCB and Local Enforcement Agency for approval and to the CIWMB for concurrence. As part of a Joint Technical Document, the IWMD shall also present the assumptions, methods, and calculations used to demonstrate seismic safety.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Prior to acquiring permits and approval of final design plans and specifications.	IWMD/Deputy Director, FRB Landfill	
MEASURE HW-3 During ongoing landfill operations (including the expansion areas), IWMD will continue to comply with the site's Waste Discharge Requirements and Monitoring and Reporting Program requirements imposed by the RWQCB for the protection of water quality.	Compliance with the site's Waste Discharge Requirements and Monitoring Reporting Program requirements.	Inspection by the RWQCB.	Ongoing during landfill operations.	IWMD/Deputy Director, FRB Landfill	
MEASURE HW-4 The Corrective Action Program in place at the landfill will continue to be implemented by IWMD if Volatile Organic Compounds are detected in groundwater.	Implementation of the Corrective Action Program.	Inspection of site by LEA.	Ongoing during landfill operations.	IWMD/Deputy Director, FRB Landfill	

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SURFACE WATER HYDROLOGY					
MEASURE H-1 Prior to obtaining a revised Solid Waste Facilities Permit and Waste Discharge Requirements for the proposed expansion, the IWMD shall submit to the RWQCB, LEA and CIWMB a Joint Technical Document which presents the assumptions, methods and calculations used to calculate the potential flow quantities for run-on, run-off and sediment content of storm water flow used in sizing drainage and sediment control facilities for the FRB Landfill in conformance with 27 CCR regulations.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Prior to acquiring permits and approval of final design plans and specifications.	IWMD/Deputy Director, FRB Landfill	
MEASURE H-2 Prior to obtaining a revised Solid Waste Facilities Permit and Waste Discharge Requirements for the proposed expansion, the IWMD shall submit to the RWQCB, LEA and CIWMB a Joint Technical Document which includes surface water drainage plans for the FRB Landfill expansion final grading plans, including any berms, down drain systems, perimeter drainage channel improvements and the location of off-site discharge points for run-off water in compliance with 27 CCR regulations.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Prior to acquiring permits and approval of final design plans and specifications.	IWMD/Deputy Director, FRB Landfill	
MEASURE H-3 Prior to construction, drainage facilities for the landfill expansion shall be designed, according to 27 CCR, to prevent washout of the waste management unit during a 100-year storm event.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Prior to construction of drainage facilities.	IWMD/Deputy Director, FRB Landfill	
MEASURE H-4 During ongoing landfill operations, diversion and drainage facilities shall be evaluated, designed, constructed and operated to accommodate the anticipated volume of precipitation and peak flows from surface run-off under the precipitation conditions specified in 27 CCR.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Ongoing during landfill operations.	IWMD/Deputy Director, FRB Landfill	

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MEASURE H-5 During ongoing landfill operations (including the expansion area), IWMD will continue to operate the landfill under a National Pollutant Discharge Elimination System (NPDES) Permit to discharge storm flows. The criteria and restrictions of the NPDES Permit and the Storm Water Pollution Prevention Plan and Best Management Practices that accompany the NPDES Permit will be adhered to.	Issuance of an NPDES permit by the RWQCB.	Inspection of site by RWQCB.	Ongoing during landfill operations.	IWMD/Deputy Director, FRB Landfill	
MEASURE H-6 During ongoing landfill operations (including the expansion area), IWMD will continue to provide positive drainage by maintaining a two to three percent slope on all landfill deck surfaces.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Ongoing during landfill operations.	IWMD/Deputy Director, FRB Landfill	
MEASURE H-7 During ongoing landfill operations (including the expansion area), IWMD will continue to prepare and implement sediment and erosion control plans on an annual basis to reduce sediment and control erosion on the landfill site.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Ongoing during landfill operations.	IWMD/Deputy Director, FRB Landfill	
MEASURE H-8 During ongoing landfill operations (including the expansion area) IWMD will remove silt and maintain the drainage and desilting basin facilities in order to provide proper drainage and erosion control. The proper maintenance of the Southeast Inlet Basin is particularly important to minimize silt buildup in the twin 60-inch pipes providing drainage for the eastern portion of the landfill.	Acceptance of the JTD by RWQCB and LEA. Concurrence of RWQCB and LEA findings by CIWMB.	Inspection of site by LEA and RWQCB.	Ongoing during landfill operations.	IWMD/Deputy Director, FRB Landfill	

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TRANSPORTATION AND CIRCULATION					
MEASURE T-1 Sand Canyon Avenue at Trabuco Road. Extend the Advanced Transportation Management System (ATMS) strategies to encompass the intersection of Sand Canyon Avenue at Trabuco Road. The ATMS strategies at Sand Canyon Avenue at Trabuco Road will be installed in 2025 but will be discontinued at buildout conditions in 2030 based on information provided by the City of Irvine. The ATMS strategies apply the latest traffic control systems to improve traffic flow through the intersections. These traffic control systems include the use of interconnect, closed circuit television and communication system, upgraded traffic signal cabinets, controllers and detection systems, and a changeable message board. The ATMS strategies will only be operational during the A.M. and P.M. peak periods, when the intersection experiences the most traffic. This improvement will result in an a.m. peak hour ICU of 0.882 (LOS D) with mitigation compared to an ICU of 0.932 (LOS E) without mitigation.	Installation of ATMS strategies.	Coordination and approval by the City of Irvine.	After installation of ATMS strategies in 2025.	IWMD/Deputy Director, FRB Landfill	
MEASURE T-2 Jeffrey Road at Walnut Avenue. Provide the westbound right-turn lane with a protected right-turn phase that is overlapped with the southbound left-turn phase in 2030. This improvement will result in an a.m. peak hour ICU of 0.830 (LOS D) with mitigation compared to an ICU of 0.982 (LOS E) without mitigation.	Installation of westbound right-turn lane.	Coordination and approval by the City of Irvine.	After installation of overlapping southbound left-turn phase in 2030.	IWMD/Deputy Director, FRB Landfill	

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AIR QUALITY					
MEASURE AQ-1 Applicable dust suppression techniques from Rule 403 shall be implemented. These techniques are summarized below. Additional dust suppression measures in the SCAQMD *CEQA Air Quality Handbook* are included as part of the project's mitigation. Implementation of these dust suppression techniques will reduce fugitive dust generation (and thus the PM_{10} component). • Apply surfactants to or vegetate (i.e., grow grass) all inactive construction areas (previously graded areas inactive for 10 days or more). • Water active sites at least twice daily (water or other surfactants should be applied as needed to active site grading areas to minimize fugitive dust). • All trucks hauling dirt, sand, soil, or other loose materials should have a cover over the top of the material, spray water to minimize wind blown dust, or should maintain at least six inches of freeboard in accordance with the requirements of California Vehicle Code section 23114 (freeboard means vertical space between the top of the load and top of the trailer). • If feasible, place base material or keep unpaved access roads moist to minimize dust on access road. • Traffic speeds on all unpaved roads shall be reduced to 15 mph or less. • Revegetate disturbed areas as quickly as possible.	Approval of final plans and specifications for the landfill expansion by the BOS.	Inclusion of dust suppression techniques in the specifications for the project.	During and after site preparation and operations.	IWMD/Deputy Director, FRB Landfill.	

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• All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 mph and dust plumes are visible. • All on-site streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water). • Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.					
MEASURE AQ-2 Dust generated by the construction activities shall be retained on site and kept to a minimum by the following dust control measures. • During clearing, grading, earth moving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease. • During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day and whenever wind exceeds 15 mph. • Immediately after clearing, grading, earth moving, or excavation is completed, the entire area of disturbed soil should be treated or properly maintained so that dust generation will not occur.	Approval of final plans and specifications for the landfill expansion by the BOS.	Inclusion of dust suppression techniques in the specifications for the project.	During and after site preparation and operations.	IWMD/Deputy Director, FRB Landfill.	

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• Soil stockpiled for more than two days should be covered, kept moist, or treated with soil binders to prevent dust generation. • Trucks transporting soil, sand, cut or fill materials, and/or construction debris to or from the site shall be tarped, sufficient amount of water applied to minimize dust, or maintain six inches of freeboard from the point of origin.					
MEASURE AQ-3 Implementation of the following measures will help reduce NOx and PM10 emissions during operational activities: • The IWMD shall purchase four, single engine, articulating dump trucks in fiscal year 2006/2007 to replace four, twin engine scrapers. The trucks will meet United States EPA Tier 3 emissions standards. In addition, IWMD will purchase one excavator. • The IWMD shall routinely train employees in efficient scheduling and load management to eliminate unnecessary queue and idling of trucks with the landfill. • Continue to be proactive in notifying truck drivers of the designated truck route. • Make sure signage at the exit of the landfill indicating the turn direction to follow the designated truck route to the freeway is visible to all truck drivers. • Continue to monitor wind speed and direction through the landfill's on-site weather station.	Approval of final plans and specifications for the landfill expansion by the BOS.	Inclusion of NOx and PM10 reduction measures in the specifications for the project.	During and after site preparation and operations.	IWMD/Deputy Director, FRB Landfill.	

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NOISE					
No mitigation is required.	None required.	None required.	None required.	None required.	None required.
BIOLOGICAL RESOURCES					
MEASURE B-1 The IWMD will prepare a NCCP Major Amendment to address impacts associated with the unauthorized loss of 138.34 acres of CSS at the FRB Landfill during MDP implementation. As part of the Major Amendment, the County of Orange's IWMD will tailor a plan to enhance subregional habitat values and balance important solid waste infrastructure requirements. A component of the plan will be focused on executing a strategy to ensure no net loss of subregional habitat values as a result of the development and implementation of the FRB MDP. The plan will include the conversion of Oso Nursery to open space by restoring the site with CSS to enhance connectivity between the Central Subregion and Southern Subregion of the NCCP. As an additional supplement to Oso Nursery, Santiago Canyon Landfill will receive treatment to restore 66 acres and compensate for 33 acres (2:1) of CSS take authorization. In addition, and part of the supplemental program, the Santiago Canyon Landfill easement restoration of 56.7 acres will compensate for 28 acres (2:1). To cover the balance and create a surplus at FRB Landfill, IWMD will transfer existing County CSS Take Authorizations totaling 45 acres (1:1).	Approval of the NCCP Major Amendment by California Department of Fish and Game, the United States Fish and Wildlife Service and the Nature Reserve of Orange County.	Acceptance of plan by California Department of Fish and Game, the United States Fish and Wildlife Service and the Nature Reserve of Orange County.	Prior to approval of final plans and specifications for the landfill expansion.	IWMD/Deputy Director, FRB Landfill.	

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MEASURE B-2 The IWMD will mitigate for impacts to southern willow scrub and southern sycamore riparian woodland and jurisdictional areas. The IWMD will work with the ACOE, CDFG and Regional Water Quality Control Board (RWQCB) to develop appropriate mitigation measures. The IWMD has proposed preliminary mitigation for the project. Conceptual mitigation for project impacts is proposed to include: (1) Giant reed eradication in the headwaters of Oso Creek on the County owned parcel at the Oso Nursery site (commences FY 06-07), which will include five years of maintenance and monitoring, and (2) payment of an in-lieu fee for restoration and enhancement activities in the San Diego Creek watershed. With the above action, it is the intent of IWMD to mitigate for the lost functions and values of the wetland/riparian community, consistent with resource agency requirements and conditions presented in Section 404 Corps permit and 1602 CDFG Streambed Alteration Agreement and meet the regulatory standards for the applicable state and/or federal regulatory programs.	Signed 1602 Streambed Alteration Agreement by California Department of Fish and Game; Signed 404 permit by the United States Army Corps of Engineers.	Approval of mitigation/ terms of conditions in the 1602 Agreement and 404 permit.	Prior to removal of southern willow scrub, southern sycamore riparian woodland and jurisdictional areas.	IWMD/Deputy Director, FRB Landfill.	
MEASURE B-3 During final design of the project, the Project Biologist will review the design plans and make recommendations for avoidance and minimization of sensitive biological resources. The IWMD or other implementing agency/agencies staff shall determine the feasible and practicable implementation of those recommendations.	Review of design plans by Project Biologist.	Approval of design plans by Project Biologist.	Prior to approval of final plans and specifications for the landfill expansion.	IWMD/Deputy Director, FRB Landfill.	

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MEASURE B-4 In conjunction with the development of final design plans and specifications for construction, or other activities involving vegetation/habitat removal, the Project Biologist shall approve the final design map of all sensitive habitats (Environmentally Sensitive Areas) within 152.4 meters (500 feet) of the grading limits on the grading plans.	Approval of final design map of all Environmental Sensitive Areas by the Project Biologist.	Approval of final design plans and specifications for construction.	Prior to activities involving vegetation/habitat removal.	IWMD/Deputy Director, FRB Landfill.	
MEASURE B-5 A Biological Resources Management Plan (BRMP) will be prepared prior to construction. The BRMP will provide specific design and implementation features of the biological resources mitigation measures outlined in resource agency approval documents. Issues during construction and operation to be addressed in the BRMP should include, but are not limited to, resource avoidance, minimization, and restoration guidelines, performance standards, maintenance criteria, and monitoring requirements. The primary goal of the BRMP will be to ensure the long term perpetuation of the existing diversity of habitats through restoration in the project area and adjacent urban interface zones, if any, and to prevent offsite or indirect effects. The BRMP should contain, at a minimum, the following: • Identification of all Environmentally Sensitive Areas (ESA). ESAs are defined as sensitive habitats including, but not limited to, areas subject to the jurisdiction of the CDFG, ACOE, and USFWS and identified in the Central and Coastal Subregion NCCP/HCP.	Preparation of a BRMP.	Inclusion of BRMP design and implementation features in final design and specifications as appropriate.	Prior to construction.	IWMD/Deputy Director, FRB Landfill.	

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• Design of protective fencing (i.e., t-bar or yellow rope) around ESAs and the construction staging areas. • For areas that will be restored, the quality of the adjacent habitat should be characterized. This characterization should include species composition, density, coverage, and presence of nonnatives. This characterization will provide a baseline to compare the success of the restoration. The site preparation plan for each restoration site should include: ▪ Sources of plant materials and methods of propagation. ▪ Site preparation (clearing, grading, weed eradication, soil amendment, topsoil storage), irrigation, planting (container plantings, seeding), and maintenance (weed control, irrigation system checks, replanting) of restoration areas. Specification of parameters for maintenance and monitoring of restoration areas, including weed control measures, frequency of field checks, and monitoring reports for temporary disturbance areas. ▪ Remedial measures to be taken if performance standards are not met. ▪ Methods and requirements for monitoring of the restoration efforts.					

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▪ Specification of the purpose, type, frequency, and extent of chemical use for insect and disease control operations as part of vegetative maintenance within restoration areas. • Specific measures should be identified for the protection of sensitive habitats to be preserved in and adjacent to the FRB property to ensure that construction does not increase beyond the impacts identified in the EIR. These measures should include, but are not limited to, erosion and siltation control measures, protective fencing guidelines, dust control measures, grading techniques, construction area limits, and biological monitoring requirements.					
MEASURE B-6 IWMD or other implementing agency/agencies will continue to employ a Project Biologist at the FRB Landfill responsible for overseeing biological monitoring, regulatory compliance, and restoration activities associated with construction of the proposed project in accordance with the adopted mitigation measures and applicable law. The Project Biologist's duties include: • Review of design plans and recommends ways to minimize impacts. • Review final design and specifications of projects impacting resources or those within 500 feet of sensitive habitats for compliance with BRMP and/or applicable resource agency permits. • Monitor grading and document compliance with minimization measures.	Designation of a Project Biologist at FRB Landfill.	Project Biologist employment.	During site preparation of the MDP and ongoing during operations as appropriate.	IWMD/Deputy Director, FRB Landfill.	

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MEASURE B-7 During grading activities and construction operations, the Project Biologist will conduct monitoring within and adjacent to sensitive habitats including monitoring of the installation of protective devices (silt fencing, sandbags, fencing, etc.), installation and/or removal of creek crossing fill, construction of access roads, vegetation removal, and other associated construction activities, as deemed appropriate by the Project Biologist. Biological monitoring should be conducted to document adherence to habitat avoidance and minimization measures addressed in the project mitigation measures and as listed in the USFWS, CDFG, and ACOE permits/agreements.	Monitoring within and adjacent to sensitive habitats by the Project Biologist.	Inclusion of monitoring report for grading activities and construction operations.	During grading activities and construction operations.	IWMD/Deputy Director, FRB Landfill.	
MEASURE B-8 IWMD will implement the standard mandatory construction condition mitigation measures below as defined in the NCCP Compliance Procedural Guidelines for Landfill Related Projects: • To the extent practicable, clearing and grading of CSS habitat will occur outside of the breeding and nesting season for the CAGN (February 15 through July 15) and other bird species, including Southern California rufous-crowned sparrow and raptors. • Prior to the commencement of clearing or grading activities, a survey will be conducted within the project site to determine the presence/absence of CAGN or cactus wren. The survey will extend 100 feet from the grading limits. The locations of CAGN or cactus wren observed within the survey area will be clearly marked and identified on the construction/grading plans.	Implementation of the standard mandatory construction condition mitigation measures as defined in the NCCP Compliance Procedural Guidelines for Landfill Related Projects.	Project Biologist monitoring and verification.	Prior to clearing or grading and during construction.	IWMD/Deputy Director, FRB Landfill.	

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• Prior to the commencement of grading, all areas of CSS habitat located outside of the project footprint will be fenced or marked with materials clearly visible to construction personnel. No construction access, parking or storage of equipment or materials will be permitted within these marked areas. Waste dirt or rubble will not be deposited on adjacent CSS. • Pre-construction meetings will be conducted and documented by the monitoring biologist to educate construction supervisors, equipment operators, and other site employees on the importance of adherence to conservation measures. • A qualified monitoring biologist will be on site during the clearing of CSS. The IWMD will advise the USFWS/CDFG at least seven (7) calendar days (and preferably fourteen [14] calendar days) prior to the clearing of any habitat occupied by target species to allow USFWS/CDFG to coordinate with the monitoring biologist. It will be the responsibility of the monitoring biologist to ensure that CAGNs and cactus wrens are not directly harmed by brush-clearing and earth-moving equipment. • Access roads shall be periodically sprayed with water to reduce the potential for dust accumulation on the leaves of CSS species, as recommended by the monitoring biologist.					

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MITIGATION MEASURE	IMPLEMENTING ACTION	METHOD OF VERIFICATION	TIMING OF VERIFICATION	RESPONSIBLE PERSON (1)	DATE COMPLETED
MEASURE B-9 IWMD shall conduct pre-construction surveys for thread-leaved brodiaea, many-stemmed dudleya, vernal barley and chaparral beargrass in areas of suitable habitat prior to construction. If any of these plant species are found within the project limits, a conceptual mitigation plan will be prepared by IWMD for any significant impacts that would be expected on these species as a result of the proposed project.	Completion of pre-construction surveys.	Pre-construction survey report submitted by Project Biologist.	Prior to construction.	IWMD/Deputy Director, FRB Landfill.	
MEASURE B-10 IWMD shall implement the following mitigation measures below: IWMD shall implement a duff (i.e., seed material) and/or revegetation plan within the NCCP Reserve to reestablish CSS impacted by the proposed project. The plan shall be implemented and monitored by a qualified Restoration Ecologist familiar with the biology and ecology of the Southern California plant communities and that of the project site. Location of candidate duff and/or re-vegetation areas within the landfill will be coordinated with IWMD operations staff. Where appropriate, duff shall be collected from areas in which CSS is removed. This material shall be placed in areas deemed appropriate by IWMD for revegetation and weed abatement, or temporarily inactive disposal area slopes.	Implementation and maintenance of a duff and/or revegetation plan within the NCCP Reserve.	Implementation of duff and/or revegetation plan by a qualified Restoration Ecologist. Approval of maintenance of CSS revegetation areas by on-site Restoration Ecologist.	During landfill phasing and implementation.	IWMD/Deputy Director, FRB Landfill.	

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IWMD is currently implementing a successful revegetation program at the FRB Landfill site for the restoration of CSS. As the Landfill is developed, upon completion of each phase, and the beginning of a new phase, CSS duff material from the new phase is collected and transported to the completed phase, where the duff is revegetated on the side slopes of the Landfill. The completed phase is then hydroseeded with CSS. A maintenance crew, directed by the on-site restoration ecologist, is responsible for maintaining all of the CSS revegetation areas on the project site, keeping theses areas free of invasive non-native weeds, debris and litter. IWMD will continue to perform maintenance and monitoring of each CSS revegetation area until the sites have reached their performance objectives.					
MEASURE B-11 The impacts to IML occur during Phases VIII A, VIII B, IX, and X Excavations of the FRB MDP. Under NCCP/HCP regulations, if a population of more than twenty (20) individual plants is identified, then the County is required to prepare a mitigation plan that: (1) addresses design modifications or other on-site measures that are consistent with the project's purpose, minimizes impacts to IML habitat, and provides appropriate protections for any adjoining conserved IML habitat; (2) provides for an evaluation of salvage, restoration/enhancement/ management of other conserved IML, or other mitigation techniques to determine the most appropriate mitigation measures to offset impacts, and implements mitigation consistent with the foregoing evaluation; and, (3) provides for monitoring and adaptive management of IML consistent with Chapter 5 of the NCCP/HCP. This mitigation plan must also be developed in coordination with USFWS, CDFG, and Nature Reserve of Orange County (NROC), and approved by the USFWS. The IWMD will be required to develop a transplantation	Excavation of Phases VIIIA, VIIIB, IX and X.	Preparation of a mitigation plan for impacts to IML in coordination with USFWS, CDFG, and Nature Reserve of Orange County (NROC), and approved by the USFWS.	Prior to excavation of Phase VIIIA, VIIIB, IX and X.	IWMD/Deputy Director, FRB Landfill.	

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MITIGATION MEASURE	IMPLEMENTING ACTION	METHOD OF VERIFICATION	TIMING OF VERIFICATION	RESPONSIBLE PERSON [1]	DATE COMPLETED
program for impact to IML in accordance with requirements noted above and in coordination with the NROC, CDFG and USFWS. In order to pre-mitigate for FRB MDP impacts to the IML, IWMD is already implementing a long-term mitigation plan at the FRB site that includes the excavation and transplantation of bulbs, seed collection, nursery propagation, experimental studies and long term performance monitoring. The first phase of the IML Mitigation Plan was completed in August 2004, when 234 IML bulbs were transplanted to four receptor sites in the northeast corner of the FRB property, outside of the future FRB MDP development limits.					
MEASURE B-12 The impacts to many-stemmed dudleya occur during Phase IX Excavation of the FRB MDP. IWMD shall prepare a mitigation plan for the transplantation of a population of 1,838 plants located within the MDP disturbance footprint to avoid direct impacts.	Excavation of Phase IX.	Preparation of mitigation plan for the transplantation of the many-stemmed dudleya population.	Prior to excavation of Phase IX.	IWMD/Deputy Director, FRB Landfill.	
AESTHETICS					
MEASURE AS-1 The interim and final slopes of the landfill will be seeded with CSS species that are found on hills adjacent to the landfill. Interim slopes will be seeded as each lift is completed. Implementation of this measure will assist in blending the landfill with the adjacent undeveloped hills.	Seeding of interim and final slopes of the landfill with CSS species.	Approval of seed mix contents, reseeding schedule and application.	After interim grading and final grading of slopes.	IWMD/Deputy Director, FRB Landfill.	

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MEASURE AS-2 All outdoor lighting, including any construction-related lighting, shall be designed, installed, and operated in a manner that ensures that all direct rays from project lighting are contained within the landfill property, and that residences and undeveloped areas that may provide wildlife value are protected from spillover light and glare.	Approval of final plans and specifications for the landfill expansion or other landfill building constructions by the BOS.	Inclusion of light and glare suppression measures in the specifications for all landfill projects.	After installation.	IWMD/Deputy Director, FRB Landfill.	
CULTURAL AND SCIENTIFIC RESOURCES					
MEASURE CR-1 Prior to the issuance of grading permit(s), and in compliance with County SCA A04, the County will retain a qualified cultural resource specialist to monitor the project's subsurface areas during grubbing and land disturbance from construction activities. The cultural resource specialist shall, consistent with County SCA A03, examine, evaluate, and determine the most appropriate disposition of any potential artifact and shall have the authority to temporarily halt work until any identified artifacts can be recovered, handled, and/or surveyed in the appropriate manner.	Issuance of grading permit(s).	Inclusion of archaeological resource protection measures in the specifications for the project.	Prior to issuance of grading permits and during and after site preparation and grading activities.	IWMD/Deputy Director, FRB Landfill.	
MEASURE CR-2 Prior to issuance of grading permit(s) and prior to excavation in undisturbed geological units, the County will retain a paleontological resource specialist to conduct paleontological resource monitoring consistent with County SCA A07.	Issuance of grading permit(s).	Inclusion of paleontological resource protection measures in the specifications for the project.	Prior to issuance of grading permits and during and after site preparation and grading activities.	IWMD/Deputy Director, FRB Landfill.	
HAZARDS/RISK OF UPSET					
No mitigation is required.	None required.	None required.	None required	None required	None required

(1) The Deputy Director may assign and/or designate a responsible designee or monitoring agent to oversee the execution of appropriate mitigation measures.