MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

This Mitigation Monitoring and Reporting Program (MMRP) fulfills Public Resources Code Section 21081.6 which requires adoption of a mitigation monitoring program when mitigation measures are required to avoid or reduce a proposed projects significant environmental effects. The MMRP is only applicable if the City of South San Francisco decides to approve the proposed Project.

The MMRP is organized to correspond to environmental issues and significant impacts discussed in the Addendum. The table below is arranged in the following five columns:

- Recommended mitigation measures,
- Timing for implementation of the mitigation measures,
- Party responsible for implementation,
- Monitoring action,
- Party or parties responsible for monitoring the implementation of the mitigation measures, and
- A blank for entry of completion date as mitigation occurs.

Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Verification		
			Monitoring Action	Monitoring Responsibility	Date Completed
Vis-2a: Lighting Plan. In order to reduce sources of light and glare created by lighting within the OPSP area, the applicant shall specify fixtures and lighting that maintains appropriate levels of light at building entries, walkways, courtyards, parking lots and private roads at night consistent with minimum levels detailed in the City's building codes. These fixtures shall be designed to eliminate spillover, high intensity, and unshielded lighting, thereby avoiding unnecessary light pollution. Prior to issuance of building permits for each phase of construction within the OPSP, the applicant shall submit a Lighting Design Plan for review and approval by the City of South San Francisco Planning Department. The plan shall include, but not necessarily be limited to the following: ○ The Lighting Design Plan shall disclose all potential light sources with the types of lighting and their locations. ○ Typical lighting shall include low mounted, downward casting and shielded lights that do not cause spillover onto adjacent properties and the utilization of motion detection systems where applicable. ○ No flood lights shall be utilized. ○ Lighting shall be limited to the areas that would be in operation during nighttime hours. ○ Low intensity, indirect light sources shall be encouraged. ○ On-demand lighting systems shall be encouraged. ○ Mercury, sodium vapor, and similar intense and bright lights shall not be permitted except where their need is specifically approved and their source of light is restricted. ○ Generally, light fixtures shall not be located at the periphery of	Prior to construction	Applicant for the development	Verify requirements are included in construction contracts and are met during construction	SSF Planning Division	

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the property and should shut off automatically when the use is not operating. Security lighting visible from the highway shall be motion-sensor activated. ○ Use "cut-off" fixtures designed to prevent the upward cast of light and avoid unnecessary light pollution where appropriate. ○ All lighting shall be installed in accordance with the building codes and the approved lighting plan during construction.					
Vis-2b: Glare Reduction. In order to reduce sources of daytime glare created by reflective building materials, the applicant shall specify exterior building materials for all proposed structures constructed for the Phase I Project and each subsequent phase of development under the OPSP that include the use of textured or other non-reflective exterior surfaces and non-reflective glass types, including double glazed and non-reflective vision glass. These materials shall be chosen for their non-reflective characteristics and their ability to reduce daytime glare. All exterior glass must meet the specifications of all applicable codes for non-reflective glass and would therefore reduce daytime glare emanating from the OPSP area.	Prior to construction	Applicant for the development	Verify requirements are included in construction contracts and are met during construction	SSF Planning Division	
Air-4a: Implement BAAQMD-Recommended Measures to Control Particulate Matter Emissions during Construction. Measures to reduce diesel particulate matter and PM10 from construction are recommended to ensure that short-term health impacts to nearby sensitive receptors are avoided. Dust (PM10) Control Measures: ○ Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences should be kept damp at all times.	Prior to issuance of construction permits -and- During construction	Applicant for the development	Verify requirements are included in construction contracts and are met during construction	SSF Building Division	

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○ Cover all hauling trucks or maintain at least two feet of freeboard. ○ Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas. ○ Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads. ○ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., previously-graded areas that are inactive for 10 days or more). ○ Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles. ○ Limit traffic speeds on any unpaved roads to 15 mph. ○ Replant vegetation in disturbed areas as quickly as possible. ○ Suspend construction activities that cause visible dust plumes to extend beyond the construction site. ○ Post a publically visible sign(s) with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations. Additional Measures to Reduce Diesel Particulate Matter and PM2.5 and other construction emissions: ○ The developer or contractor shall provide a plan for approval by the City or BAAQMD demonstrating that the heavy-duty					

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(>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average for the year 2011 ○ Clear signage at all construction sites will be posted indicating that diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite or adjacent to the construction site. ○ Opacity is an indicator of exhaust particulate emissions from off-road diesel powered equipment. Each project shall ensure that emissions from all construction diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately ○ The contractor shall install temporary electrical service whenever possible to avoid the need for independently powered equipment (e.g. compressors). ○ Properly tune and maintain equipment for low emissions.					
Bio-3a: Incorporate Best Management Practices for Water Quality During Construction. The Plan shall incorporate Best Management Practices (BMPs) for water quality to minimize	During construction	Applicant for the development	Verification that requirements are met during	SSF Building Division	

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impacts in the surrounding wetland environment, sloughs and channels, and the San Francisco Bay during construction. These BMPs shall include numerous practices that will be outlined within the Stormwater Pollution Prevention Plan (SWPPP), including, but not limited to, the following mitigation measures: 1. No equipment will be operated in live flow in any of the sloughs or channels or ditches on or adjacent to the site. 2. No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into aquatic or wetland habitat. 3. Standard erosion control and slope stabilization measures will be required for work performed in any area where erosion could lead to sedimentation of a waterbody. For example, silt fencing will be installed just outside the limits of grading and construction in any areas where such activities will occur upslope from, and within 50 ft of, any wetland, aquatic, or marsh habitat. This silt fencing will be inspected and maintained regularly throughout the duration of construction. 4. Machinery will be refueled at least 50 ft from any aquatic habitat, and a spill prevention and response plan will be developed. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.			construction		
Bio-3b: Minimize Soil Disturbance Adjacent to Wetland and Marsh Habitat. To the extent feasible, soil stockpiling, equipment	During construction	Applicant for the	Verification that Environmentally	SSF Planning Division	

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staging, construction access roads, and other intensively soil-disturbing activities shall not occur immediately adjacent to any wetlands that are to be avoided by the OPSP. The limits of the construction area shall be clearly demarcated with Environmentally Sensitive Area fencing to avoid inadvertent disturbance outside the fence during construction activities.		development	Sensitive Areas are avoided		
Bio-4: Ensure Adequate Stormwater Run-off Capacity. Increases in stormwater run-off due to increased hardscape shall be mitigated through the construction and maintenance of features designed to handle the expected increases in flows and provide adequate energy dissipation. All such features, including outfalls, shall be regularly maintained to ensure continued function and prevent failure following construction.	Prior to construction	Applicant for the development	Verification that adequate stormwater run-off capacity is provided	SSF Public Works Department	
Bio-6: Pre-Construction Nesting Bird Survey. Pre-construction surveys for nesting birds protected by the Migratory Bird Treaty Act of 1918 and/or Fish and Game Code of California within 100 feet of a development site in the OPSP area shall be conducted if construction commences during the avian nesting season, between February 1 and August 31. The survey should be undertaken no more than 15 days prior to any site-disturbing activities, including vegetation removal or grading. If active nests are found, a qualified biologist shall determine an appropriate buffer in consideration of species, stage of nesting, location of the nest, and type of construction activity. The buffers should be maintained until after the nestlings have fledged and left the nest.	Prior to construction if during nesting period	Applicant for the development	Completion of survey and, if birds present, provision of buffer	SSF Planning Division	
Bio-10a: Lighting Measures to Reduce Impacts to Birds. During design of any building greater than 100 feet tall, the OPSP Applicant shall consult with a qualified biologist experienced with	During preliminary design of any	Applicant for the	Incorporation of lighting that minimizes bird	SSF Planning Division	

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bird strikes and building/lighting design issues to identify lighting-related measures to minimize the effects of the building's lighting on birds. Such measures, which may include the following and/or other measures, shall be incorporated into the building's design and operation. ○ Use strobe or flashing lights in place of continuously burning lights for obstruction lighting. Use flashing white lights rather than continuous light, red light, or rotating beams. ○ Install shields onto light sources not necessary for air traffic to direct light towards the ground. ○ Extinguish all exterior lighting (i.e., rooftop floods, perimeter spots) not required for public safety. ○ When interior or exterior lights must be left on at night, the operator of the buildings shall examine and adopt alternatives to bright, all-night, floor-wide lighting, which may include: ○ Installing motion-sensitive lighting. ○ Using desk lamps and task lighting. ○ Reprogramming timers. ○ Use of lower-intensity lighting. ○ Windows or window treatments that reduce transmission of light out of the building shall be implemented to the extent feasible.	building greater than 100 feet tall	development	impacts		
Bio-10b: Building Design Measures to Minimize Bird Strike Risk. During design of any building greater than 100 feet tall, the OPSP Applicant shall consult with a qualified biologist experienced with bird strikes and building/lighting design issues to identify measures related to the external appearance of the building to minimize the	During preliminary design of any building greater than	Applicant for the development	Incorporation of design features that minimize bird impacts	SSF Planning Division	

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risk of bird strikes. Such measures, which may include the following and/or other measures, shall be incorporated into the building's design. ○ Use non-reflective tinted glass. ○ Use window films to make windows visible to birds from the outside. ○ Use external surfaces/designs that "break up" reflective surfaces rather than having large, uninterrupted areas of surfaces that reflect, and thus may not appear noticeably different (to a bird) from, the sky.	100 feet tall				
Geo-2a: Compliance with California Building Code. OPSP development shall meet requirements of the California Building Code, including the California Building Standards, published by the International Conference of Building Officials, and as modified by the amendments, additions and deletions as adopted by the City of South San Francisco, California. Incorporation of seismic construction standards will reduce the potential for catastrophic effects of ground shaking, such as complete structural failure, but will not completely eliminate the hazard of seismically induced ground shaking. **Geo-2b: Compliance with a design-level Geotechnical Investigation report prepared by a Registered Geotechnical Engineer and with Structural Design Plans as prepared by a Licensed Professional Engineer**. Proper foundation engineering and construction shall be performed in accordance with the recommendations of a Registered Geotechnical Engineer and a Licensed Professional Engineer. The structural engineering design, with supporting Geotechnical Investigation, shall incorporate seismic parameters compliant with the California Building Code.	Prior to issuance of building permits -and- Prior to construction	Applicant for the development	Verify geotechnical recommendations are included in plans and construction contracts	SSF Building Division	

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Geo-2c: Obtain a building permit. The OPSP applicant shall obtain a building permit through the City of South San Francisco Building Division. Plan Review of planned buildings and structures shall be completed by the Building Division for adherence to the seismic design criteria for planned commercial and industrial sites in the East of 101 area of the City of South San Francisco. According to the East of 101 area plan, Geotechnical Safety Element, buildings shall not be subject to catastrophic collapse under foreseeable seismic events, and will allow egress of occupants in the event of damage following a strong earthquake.					
Geo-3a: Compliance with recommendations of a Geotechnical Investigation and in conformance with Structural Design Plans. A design-level Geotechnical Investigation shall be prepared for the site under the direction of a California Registered Geotechnical Engineer and shall include analysis for liquefaction potential of the site soils, particularly in the perimeter dikes. Proper foundation engineering and construction shall be performed in accordance with the recommendations of the Geotechnical Investigation. The Geotechnical Investigation shall be reviewed and approved by the City's Geotechnical Consultant and by the City Engineer. A Registered Structural Engineer shall prepare project structural design plans. Structures shall be designed to reduce the effects of anticipated seismic settlements. The Geotechnical Engineer shall review the Structural Design Plans and provide approval for the Geotechnical elements of the plans. The design plans shall identify specific mitigation measures to reduce liquefaction potential, if the potential for liquefaction is found to exist, or other ground failure modes such as lateral spreading, seismic densification or stability of the perimeter dike slopes. Mitigation measures may include ground improvement by methods such as stone columns or jet	Prior to issuance of building permits	Applicant for the development	Verify geotechnical recommendations are included in plans and construction contracts	SSF Building Division	

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grouting. **Geo-3b: Obtain a building permit**. The OPSP applicant shall obtain a building permit through the City of South San Francisco Building Division. Plan Review of planned buildings and structures shall be completed by the Building Division for adherence to the seismic design criteria for planned commercial and industrial sites in the East of 101 area of the City of South San Francisco. According to the East of 101 area plan, Geotechnical Safety Element, buildings should not be subject to catastrophic collapse under foreseeable seismic events, and will allow egress of occupants in the event of damage following a strong earthquake.					
Geo-4: Compliance with recommendations of a Geotechnical Investigation. A design-level Geotechnical Investigation shall include an evaluation of static stability and seismic stability under a design magnitude earthquake event. Seismic analyses shall include pseudo-static analyses to estimate permanent slope displacements due to earthquake motions. The Geotechnical Engineer shall prepare recommendations to mitigate potential slope instability, if slope stability problems are identified. Mitigation measures may include ground improvement by methods such as stone columns or jet grouting. Design-level Geotechnical Investigations shall be completed during preliminary and final design stages and will confirm material types used in the construction of the perimeter dikes to verify that the slopes meet minimum criteria for stability under both static and seismic conditions. Knowledge of the stability of the perimeter dikes will guide the selection of any future measures to mitigate any deficiencies identified in the perimeter dike.	Prior to issuance of building permits	Applicant for the development	Verify geotechnical recommendations are included in plans and construction contracts	SSF Building Division	
Geo-5a: Deep Foundations. Because of the magnitude of expected settlement of Bay Mud soils and waste fill materials that would	Prior to	Applicant for	Verify	SSF Building	

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occur under new building loads, the OPSP applicant must consider the use of deep foundations such as driven piles. Specific recommendations for suitable deep foundation alternatives and required penetrations will be provided during the course of a design-level geotechnical investigation and will depend on factors such as the depth and hardness of the underlying clays, sands or bedrock, and the corrosivity of the waste materials and Bay Mud soils. Suitable deep foundation types may include driven precast, prestressed concrete piles or driven closed-end steel pipe piles with the interior of the pile filled with concrete after driving. Deep foundations shall extend through all waste materials and Bay Mud and be tipped in underlying stiff to hard clays, dense sands or weathered bedrock. Where waste and Bay Mud soils underlie the site, wall and column loads as well as floor slabs shall be founded on deep foundations. Settlement of properly-designed and constructed deep foundation elements is typically less than about one-half inch. The majority of settlement typically occurs during construction as the loads are applied. Where landfill waste and Bay Mud are not present (possibly at extreme western and northwestern edges of the site) and competent soil or bedrock are present near the ground surface (within about 5 feet of finished grade elevation), shallow foundations such as footings or mats may be appropriate foundation types, as determined during the course of a design-level geotechnical investigation. Where proposed structures straddle a transition zone between these conditions, a combination of shallow and deep foundations may be required. Any transition zones shall be identified during site-specific geotechnical investigations for preliminary and final designs. **Geo-5b: Predrilling and/or Pile Configuration**. Piles either shall be	issuance of building permits	the development	requirements are included in construction contracts and are met during construction	Division	

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predrilled through the fill and landfill materials to protect the piles from damage due to unknown materials, to reduce pushing waste material deeper, and to reduce pile alignment problems or shall have a pointed tip configuration. If a drill is used, it should only loosen and break up in-place obstructions that may cause pile damage. During recent subsurface investigations reported by Treadwell & Rollo (2009b) obstructions including concrete rubble was encountered throughout the landfill area, particularly in the northern end of the site. Even with predrilling, precast concrete piles could be damaged during installation at a landfill site such as Oyster Point. For preliminary planning purposes, a precast concrete pile breakage rate during installation of 10 to 15 percent may be considered applicable. Piles usually have to include pointed tip configurations to avoid pushing landfill waste downward. These configurations are typically readily accommodated by pile driving contractors. **Geo-5c: Indicator Pile Program**. Prior to specifying the lengths of the production piles, drive indicator piles at the structure sites in order to observe the driving characteristic of the piles and the ability of the driving equipment when a driven pile is used. The driving criteria and pile length of production piles shall also be estimated from the information obtained from driving of the indicator piles. The contractor shall use the same equipment to drive both the indicator and production piles. Indicator pile lengths and locations shall be selected by the Geotechnical Engineer, in conjunction with the Structural Engineer and Contractor after the foundation plan has been finalized. The indicator pile program will serve to establish information on the following: ○ Estimates of production pile lengths;					

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○ Drivability of production piles; ○ Performance of pile driving equipment; and ○ Variation in driving resistance relative to depth and location of piles.					
Geo-6: Account for Drag Load on Deep Foundations. The Geotechnical Engineer shall account for accumulation of drag load in the structural design of the deep foundations elements (piles).	Prior to issuance of building permits	Applicant for the development	Verify geotechnical recommendations are included in plans and construction contracts	SSF Building Division	
Geo-7: Incorporate Systems for Landfill Gas Control. Measures for the control of landfill gas shall be included in building design. Measures for the control of landfill gas typically include a collection system, floor slab shielding and interior alarms.	For projects on or adjacent to the landfill area, during preliminary project design and prior to issuance of building permit	Applies on a building by building basis	Verification that measures for the control of landfill gas are included	SSF Building Division and SSF Public Works Department	
Geo-8a: Avoid Significant New Loads on Landfill Waste and Bay Mud. A design-level Geotechnical Investigation shall include exploration to more thoroughly determine the thickness and areal extent of landfill waste and Bay Mud. To avoid inducing additional settlement to the settlement that is already on-going, grading plans shall include as little additional new fill as possible, and	Prior to issuance of building permit	Applies to all construction	Verification of adequate report	SSF Building Division and SSF Public Works Department	

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significant new structure loads or any structures that are settlement-sensitive shall be founded on deep foundations extended below the Bay Mud, as recommended in the design-level Geotechnical Investigation report. All grading shall be planned to avoid penetrating the landfill cap and to reduce the amount of long-term settlement in response to new fills. Because the Bay Mud and waste across most of the site are still settling under the weight of existing fill and waste decomposition and will settle more under new fills, additional settlement should be expected, with the creation of localized low-lying surface areas. Existing low areas shall be corrected during site grading to allow for proper drainage. Long-term maintenance planning for the development shall also include provisions for periodic grading to correct drainage problems and improve site grades, as outlined in the Disposition and Development Agreement. The Geotechnical Engineer will recommend other site-specific recommendations based on the results of the design-level Geotechnical Investigation to mitigate on-going settlement and any additional settlement to be expected in response to new development.					
Geo-8b: Design Building-Soil Interface to Allow Free Movement. The Structural Engineer shall provide that structures not supported on deep foundations not be structurally tied into pile-supported buildings, except as noted below, and shall be designed to allow free vertical movement between structures. Articulated ramps on walkways and building entrances at the interface between the pile and soil-supported areas can provide a smooth walkway over moderate differential settlements with some amount of maintenance. As the magnitude of the differential	Prior to issuance of building permit	Applies to all construction	Verification of compliant construction plans	SSF Building Division	

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settlement increases, however, these ramps may need to be rebuilt or realigned to account for the larger elevation differential. Similar ramps may also reduce differential settlements between driveways and pile-supported parking lots. Over time, voids will tend to form beneath pile-supported buildings due to on-going settlement of the landfill. Use of wall skirts around the building perimeter will help to reduce the visual impact of these voids.					
Geo-9a: Monitoring and Testing. Special precautions shall be taken to monitor the safety conditions and to provide for the safety of workers in the area. Additionally, if excavations encounter water, this water shall be tested for contaminants and may have to undergo specialized handling, treatment and/or disposal if it is contaminated. A system to disperse methane during construction shall be installed in or adjacent to the trenches.	For projects on the landfill area, prior to issuance of building permit and during construction	Applies to all construction on a landfill	Adherence to measures if water discovered during excavation	SSF Building Division and SSF Public Works Department	
Geo-9b: Locate Underground Utilities in Soil Cap. To the extent practicable, the utilities shall be constructed in the soil landfill cap to avoid direct contact of the utility lines and construction workers with the waste material. If construction of utilities in the waste material is necessary, proper design and construction precautions shall be taken to protect the system and the workers from the corrosive and hazardous conditions of the waste. **Geo-9c: Seal Trenches and Underground Structures**. Trenches and underground structures shall be sealed to preclude gas intrusion. Typical types of sealing procedures include providing a low permeability clay cover of 1 foot over the top of the pipe, or the utility trench be lined with a relatively impervious	For projects on the landfill area, prior issuance of building permit and during construction	Applies to all construction on a landfill	Verification of compliant plans and adherence to approved plans during construction	SSF Building Division and SSF Public Works Department	

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geomembrane. Underground manholes may be shielded from methane intrusion by placement of a membrane around the outside of the structure. To reduce gas migration off-site within the utility trenches, all trenches crossing the transition zone between the landfill and non-landfill portions of the property shall be sealed with a clay plug surrounding the pipe or other approved methods. In addition, plugs shall also be provided at the perimeters of buildings to reduce migration of gas through the utility trenches to beneath the buildings.					
Geo-10: Provide For Continuity of Landfill Cap. Following planned landfill excavation and landfill cap repair, the project Civil Engineer shall require that excavations for building foundations, utility trenches and other underground structures be configured to maintain continuity of the landfill cap. The specific configuration will depend upon the excavation depth and orientation to underlying wastes. However, a low-permeability layer of soil or a geomembrane properly tied to surrounding cap areas may be required.	For projects on the landfill area, prior to issuance of building permit and during construction	Applies to all construction on a landfill	Verification of landfill cap installation	SSF Building Division and SSF Public Works Department	
Geo-11: Common Trenches and Vaults. Where underground utilities are to be located in landfill areas, consideration shall be given to reducing the number of utilities trenches by locating utilities in common trenches to the extent practicable. In addition, vaulted systems shall be designed and maintained at such interfaces that provide flexible and/or expandable connections to the proposed buildings. In addition, the utility lines beneath buildings shall be suspended from hangers fastened to structural floor slabs.	For projects on the landfill area, during preliminary design and prior to issuance of building permit	Applies to all construction on a landfill	Verification of adherence to measures	SSF Building Division and SSF Public Works Department	

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Geo-12: Flexible Materials and Joints. Utility lines shall be constructed of flexible pipe such as welded polyethylene to accommodate differential settlement within the waste material and landfill cap. At the border of the landfill, where differential settlements are expected to be large, the utility lines shall be designed to allow for rotation. As with buried utilities on a conventional site, proper bedding and backfilling shall be completed, as specified in a design-level geotechnical investigation report.	For projects on the landfill area, during preliminary design, prior to issuance of building permit and during construction	Applies to all construction on a landfill	Verification of adherence to measures	SSF Building Division and SSF Public Works Department	
Geo-13: Increase Flow Gradient. The Civil Engineer shall consider increasing the flow gradient in sewers and storm drains so that differential settlements will not disrupt the flow. An alternative is to provide a pumping system that does not rely on gravity flow. Such measures will reduce the impact of reduced flow gradient due to differential settlement to less than significant. This applies to the entire OPSP, including the Phase I Project.	For projects on the landfill area, during preliminary design, prior to issuance of building permit and during construction	Applies to all construction on a landfill	Verification of adherence to measures	SSF Building Division and SSF Public Works Department	
Geo-14: Storm Water Pollution Prevention Plan. In accordance with the Clean Water Act and the State Water Resources Control Board (SWRCB), the Applicant shall file a Storm Water Pollution Prevention Plan (SWPPP) prior to the start of construction. The SWPPP shall include specific best management practices to reduce soil erosion. This is required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ).	Prior to construction	Applicant for the development	Verification that adequate plan prepared	SSF Building Division	

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Haz-2: Waste Excavation and Re-disposition. A plan shall be written for management of excavated wastes/refuse. Non-hazardous excavated waste shall be re-deposited in an alternate part of the site and any hazardous waste shall be relocated off-site for appropriate disposal. The plan can be a section of the Site Management Plan (Mitigation Measure Haz-4a), or a stand alone document. The plan shall include measures to avoid releases of wastes or waste water into the environment and to protect workers and the public. The details of the plan shall be based, in part, on the amount of material to be removed and the final design of foundation structures, but will generally include the following, as deemed appropriate by the regulatory agencies, particularly DTSC and RWQCB: ○ To the greatest extent possible, use existing boring data to obtain pre-characterization of refuse for off-site disposal, and to pre-plan areas to be removed versus areas to be re-deposited on-site. ○ Divide excavation areas into daily sections; plan to complete excavation and backfilling a section during each working day. Minimize the time period that refuse is exposed. ○ Review existing boring data and existing site documentation to evaluate potential subsurface materials to be encountered. ○ Stake out area to be excavated. ○ If excavation is to be conducted at depths where groundwater is to be encountered, conduct dewatering to minimize worker potential direct contact with groundwater. Removed groundwater shall be treated in accordance with the requirements outlined in the Site Management Plan (Mitigation Measure Haz-4a).	Prior to issuance of building permit and during construction on the landfill area	Applies to all construction	Compliance with Site Management Plan	SSF Public Works Department	

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○ Screen excavation site with a portable photoionization detector and combustible gas monitor for landfill gasses. Continue screening progress of each excavation section as work proceeds. Use foam suppressants or 6 inches minimum of daily soil cover for nuisance odors. ○ Provide carbon dioxide gas source (fire extinguisher or cylinder) to flood excavation as necessary to prevent migration of gases into atmosphere above excavation, minimize explosive or fire potential, and control nuisance and odors. ○ Begin excavation and segregate soil and /or clay cap material above refuse for reuse as foundation layer. ○ Upon reaching refuse, place refuse into dump truck standing by on-site. ○ Dispose of each truck load of refuse immediately after filling equipment. All loads to be covered when hauling. Refuse shall be either re-deposited on-site in a specified area, or hauled to an off-site disposal facility. ○ Prior to relocation, field verify each load for disposal classification type (landfill classification, Class 3 or Class 2). If waste for off-site disposal is characterized as either California or Federal Hazardous Waste as defined in the criteria described in CCR Title 22 Section 66261, then the hazardous waste shall be tracked using the Uniform Hazardous Waste Manifest System (USEPA Form 8700-22). ○ Hazardous and if necessary, non-hazardous waste shall be transported to the appropriate disposal facility using a permitted, licensed, and insured transportation company. Transporters of hazardous waste shall meet the requirements of 40 CFR 263 and 22 CCR 66263. Copies of					

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uniform hazardous waste manifests signed by the designated waste disposal facility shall be retained for at least five years from the date the waste was accepted by the initial transporter. Copies of records pertaining to the characterization of hazardous or nonhazardous waste shall be retained for a minimum of three years. ○ Upon reaching over-excavation depth, place a minimum of 6-inch thick layer of appropriate backfill soil on excavation bottom to seal exposed refuse surface. Place soil by the end of the same day excavation is completed. ○ Upon completion of excavation, begin cap placement procedures. Specific measures shall be targeted to minimize the duration of waste exposure, plan for appropriate final destination of wastes based on the presence of contaminants of concern, allow for adjustment in plan based on unexpected occurrences, and to protect worker safety and the public. Additional work plan measures are discussed in Haz-4a. In addition, worker protection measures for soil and dewatering are discussed in Haz-6a. Measures specific to off-site air quality during construction are included in mitigation measure Air-4.					
Haz-4b: Use Of Deep Foundations To Prevent Load Induced Settlement. Buildings on fill shall be supported using driven steel or concrete piles founded in stiff to hard clays, dense sands or weathered bedrock underlying the fill. Both the structural loads and building floor slabs shall be supported on piles. This will avoid placing additional building loads on fill material.	Prior to issuance of building permits	Applicant for the development	Adherence to specifications provided in measure	SSF Building Division	
Haz-4c: Minimization of Irrigation Water Use. Landscaping of the	During	Applicant for		SSF Building	

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site shall be selected to stabilize the soil, prevent erosion, and reduce the need for extensive irrigation. Excessive water could infiltrate the landfill cap and produce leachate. To prevent this, low-water vegetation shall be selected to reduce irrigation water. In addition the thickness of the erosion resistant layer in landscaped areas will be increased to minimize intrusion of roots into the lower layers of the cover.	Construction	the development		Division	
Haz-4e: Operation and Maintenance Activities. Operation and maintenance (O&M) activities are expected to occur indefinitely at the site. Operation and maintenance activities shall include inspections and observations of site features to protect the landfill cap, prevent utility damage, maintain gravity flow of sewer systems, maintain the landfill gas barrier and venting systems, and monitor for leachate and groundwater contaminant concentrations. O&M shall act to prevent releases of hazardous materials by identifying deficits in engineering controls prior to release events.		SSF Building Division		SSF Building Division	
Haz-6a: Development and Implementation of Site Management Plans. A Site Management Plan shall be prepared that addresses the exposure risk to people and the environment resulting from future demolition, construction, occupancy, and maintenance activities on the property. The plans for the landfill portion of the OPSP shall be in accordance with RWQCB order No. 00-046, the PCMP and recommendations of the Environmental Consultant, and shall be reviewed and approved by the RWQCB, DTSC, the SMCEHD Groundwater Protection Program and the City of South San Francisco Public Works Department. Specific mitigation measures designed to protect human health		SSF Building Division		SSF Building Division	

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and the environment shall be provided in the plan. At a minimum, the plan shall include the following: 1) Requirements for site specific Health and Safety Plans (HASP) shall be prepared in accordance with OSHA regulations by all contractors at the OPSP area. This includes a HASP for all demolition, grading and excavation on the site, as well as for future subsurface maintenance work. The HASP shall include appropriate training, any required personal protective equipment, and monitoring of contaminants to determine exposure. The HASP shall be reviewed and approved by a Certified Industrial Hygienist. The plan shall also designate provisions to limit worker entry and exposure and shall show locations and type of protective fencing to prevent public exposure to hazards during demolition, site grading, and construction activities. 2) Requirements for site-specific construction techniques that would minimize exposure to any subsurface contamination shall be developed. This shall include dewatering techniques to minimize direct exposure to groundwater during construction activities, treatment and disposal measures for any contaminated groundwater removed from excavations, trenches, and dewatering systems in accordance with local and Regional Water Quality Control Board guidelines. Groundwater encountered in excavations shall not be discharged into the neighboring storm drain, but into a closed containment facility, unless proven to have concentrations of contaminants below established regulatory guidelines. Extracted contaminated groundwater shall be required to be stored in tanks or other sealed container until tested. If testing determines that the water can be discharged into the sanitary sewer system, then the applicant shall acquire a ground water discharge permit from the City of South San Francisco Sanitary Sewer District and meet local discharge limits before					

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being allowed to discharge into the sanitary sewer. Water shall be analyzed for the chemicals of concern at the site, including benzene, ethylbenzene, xylenes, chlorobenzene, naphthalene and additional compounds as requested by the receiving facility or the City of South San Francisco. 3) Waste relocation. Relocation or removal of existing landfill waste/refuse will be required for landfill cap upgrades and for site construction. Excavated waste can either be re-deposited on site or disposed of at an active landfill facility. Off-site disposal will require pre-characterization of the waste for acceptance at an approved waste disposal facility. Waste manifests will be prepared to document transportation and disposal. On-site disposal shall require proper placement, compaction, and capping of the refuse material. In either case, segregation of Class 2 and Class 3 from Class 1 material for disposal purposes shall be performed on-site to the extent possible. No Class 1 material shall be relocated or re-deposited on-site. BAAQMD Regulation 8 Rule 34 section 118 documents a limited exemption for construction activities at landfill sites. This section specifies that when the construction activities are related to "installing, expanding, replacing, or repairing components of the landfill gas, leachate, or gas condensate collection and removal systems." Excavation for cap upgrades falls under this exemption. Excavation for construction purposes will also likely fall under this exemption. As such it will be necessary to provide BAAQMD with construction plans and other documentation as detailed under this regulation for the purposes of obtaining a letter of exemption from BAAQMD. Excavation procedures are also discussed in Measure Haz-2. 4) Future subsurface work plan. The plan shall document procedures for future subsurface landscaping work, utility maintenance, etc., with proper notification, where applicable. The					

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plan shall include a general health and safety plan for each expected type of work, with appropriate personal protective equipment, where applicable. This plan may be included in the operations and maintenance plan as appropriate.					
Haz-6b: Landfill Gas System. Section 21160 of Title 27 of the CCR requires that closed landfills implement and maintain landfill gas control. A landfill gas (LFG) venting system shall be placed under the bottom slabs of each structure built entirely or partially over landfill material, to collect and vent the build up of gases diffusing through the landfill cap. The LFG system shall include spray-applied vapor barrier membranes, horizontal collection and passive venting, gas detection and monitoring. The system shall either have backup active collection and venting or shall be designed to facilitate retrofitting with an active system, if measures warrant the retrofit. Potential migration of LFG into the building space shall be mitigated by the collection and venting system, and secondly by the spray-applied membrane. Subsurface landfill gases shall be vented by a network of perforated piping placed beneath the building slabs. The exhaust gases shall be manifolded to a series of riser piping that is to be vented above structure roofs. Passive landfill gas systems do not require permits, however if an active system is installed, either at the time of construction or as part of a retrofit, a BAAQMD permit will be needed.		Applicant for the development (within building on site) -and- SSF Building Division (external to building)		SSF Building Division	
Haz-6c: Non-use of Groundwater. Water supply wells shall not be installed at the site. This will prevent direct contact between the public and site groundwater and leachate.	All phases	Applicant for the development	Verify requirements are included in landscaping plan	SSF Building	

Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Verification		
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Hydro-1: Best Management Practices (BMPs) shall be used during installation of foundation piers to reduce the potential for gaps in the subsurface confining layers around the piers. BMP requirements shall be identified in the SWPPP and shall be developed by the applicant or their authorized representative. The exact BMPs to be implemented shall depend on final pier design and type, but can include pre-drilling and grouting of concrete piers, use of hollow steel piers, or other methods to reduce the risk of displaced refuse creating a void in the Bay Mud layer. The proposed BMPs shall be benchmarked against the California Department of Transportation Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual (2003 and associated updates).	Prior to issuance of building permits -and- During construction	Applicant for the development	Verify requirements are included in construction contracts and are met during construction	SSF Building Division	
Hydro-2: Preparation and Implementation of Project SWPPP. Pursuant to NPDES requirements, the applicant of a project under the OPSP shall develop a SWPPP to protect water quality during construction. If the SWPP will be developed after September 2, 2011, the SWPPP shall be developed by a California Qualified SWPPP Developer in accordance with the State Water Resources Control Board Construction General Permit 2009-009-DWQ. The project SWPPP shall include, but is not limited, to the following mitigation measures for the construction period: 1) Grading and earthwork shall be allowed with the appropriate SWPPP measures during the wet season (October 1 through April 30) and such work shall be stopped before pending storm events. 2) Erosion control/soil stabilization techniques such as straw mulching, erosion control blankets, erosion control matting, and hydro-seeding, shall be utilized in accordance with the regulations outlined in the Association of Bay Area Governments "Erosion &	Prior to issuance of building permits -and- Prior to construction	Applicant for the development	Verify requirements are included in construction contracts and are met during construction	SSF Building Division	

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Sediment Control Measures" manual. Silt fences shall be installed down slope of all graded slopes. Hay bales shall be installed in the flow path of graded areas receiving concentrated flows and around storm drain inlets. 3) BMPs to be developed by the applicant shall be used for preventing the discharge or other construction-related NPDES pollutants beside sediment (i.e. paint, concrete, etc) to downstream waters. 4) After construction is completed, all drainage facilities shall be inspected for accumulated sediment and these drainage structures shall be cleared of debris and sediment. In accordance with the handbook C.3 Stormwater Technical Guidance, Version 2, permanent mitigation measures for stormwater shall be submitted as part of project application submittals with the Planning Permit Application and the Building Permit Application. Elements that shall be addressed in the submittals include the following: 5) Description of potential sources of erosion and sediment at the OPSP area. R&D activities and significant materials and chemicals that could be used at the proposed OPSP area shall be described. This shall include a thorough assessment of existing and potential pollutant sources. 6) Identification of BMPs to be implemented at the OPSP area based on identified industrial activities and potential pollutant sources. Emphasis shall be placed on source control BMPs, with treatment controls used as needed. 7) Development of a monitoring and implementation plan. Maintenance requirements and frequency shall be carefully described including vector control, clearing of clogged or					

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obstructed inlet or outlet structures, vegetation/landscape maintenance, replacement of media filters, etc. 8) The monitoring and maintenance program shall be conducted as described in Haz-4e. 9) Proposed pervious and impervious surfaces, including site design measures to minimize impervious surfaces and promote infiltration (except where the landfill cover is present). 10) Proposed locations and approximate sizes of stormwater treatment measures.					
Hydro-3: Compliance with NPDES Requirements. Applicants for a project under the OPSP shall comply with all Phase I NPDES General Construction Activities permit requirements established by the CWA and the Grading Permit requirements of the City of South San Francisco. Erosion control measures to be implemented during construction shall be included in the project SWPPP. The project SWPPP shall accompany the NOI filing and shall outline erosion control and storm water quality management measures to be implemented during and following construction. The SWPPP shall also provide the schedule for monitoring performance. Refer to Mitigation Measure Hydro-2 for more information regarding the project SWPPP. Implementation of Phase I NPDES General Construction Activities permit requirements would reduce construction-related impacts associated with erosion and/or siltation to less-than-significant.	Prior to issuance of building permits -and- During construction	Applicant for the development	Verify requirements are included in construction contracts and are met during construction	SSF Building Division	
Noise-5: Construction Noise. To reduce noise levels generated by construction, the following standard construction noise control measures shall be included in all construction projects within the	During construction	Applicant for the development	Verify requirements are included in construction	SSF Building Division	

Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Verification		
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OPSP area. ○ Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. ○ Unnecessary idling of internal combustion engines should be strictly prohibited. ○ Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive receptors. Temporary noise barriers could reduce construction noise levels by 5 dBA. ○ Utilize "quiet" air compressors and other stationary noise sources where technology exists. ○ Route all construction traffic to and from the OPSP area via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible. ○ Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the OPSP area. ○ The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities. ○ Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented.			contracts and are met during construction		

Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Verification		
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Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule. ○ For pile driving activities, consider a) pre-drilling foundation pile holes to minimize the number of impacts required to seat the pile, b) using multiple pile driving rigs to expedite this phase of construction, and/or c) the use of "acoustical blankets" for receivers located within 100 feet of the site.					
Traf-1: Transportation Demand Management Program. The OPSP sponsors shall implement a Transportation Demand Management (TDM) program consistent with the City of South San Francisco Zoning Ordinance Chapter 20.400 Transportation Demand Management, and acceptable to C/CAG. These programs, once implemented, must be ongoing for the occupied life of the development. The C/CAG guidelines specify the number of trips that may be credited for each TDM measure.	Prior to occupancy	Applicant for the development	Approval of TDM Program	SSF Planning Division	
Traf-2b: Bay Trail Continuity Provisions in Construction Management Plan. Continuity of the Bay Trail shall be included in construction management plans for all phases of development in the OPSP. When feasible, construction shall avoid disrupting the Bay Trail and when not feasible, the construction management plan shall specify plans for clear and safe detours for bicyclists and pedestrians and be ADA accessible.	Prior to issuance of building permits -and- During construction	Applicant for the development	Verification of inclusion in the construction management plan	SSF Planning Division and SSF Building Division	

Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Verification		
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Util-2b: Oyster Point Subtrunk Replacement. To provide the required sewer capacity, the Oyster Point Subtrunk will need to be replaced with a larger sized trunk line, with sizes ranging from 12, 15, and 18-inches. The majority of these improvements are included in the Sewer Master Plan and are funded through a flat-rate sewer connection fee for new development and a monthly impact fee. The amount of the impact fee is based on the quantity (flow) of wastewater generated. The occupants of the proposed OPSP shall pay the sanitary sewer fees imposed by the City of South San Francisco in order to mitigate the cost of the sewer system upgrades necessary to manage the wastewater flows generated by the OPSP. An additional 700 feet of 8-inch diameter sewer trunk from Eccles Avenue to Gull Road needs to be upsized to a 12-inch diameter trunk sewer. This segment of sewer trunk was not included in the recommendations in the Sewer Master Plan. The applicants shall either work with the City to include this improvement in an Sewer Master Plan update or directly fund their fair share of the improvement.	Prior to issuance of certificate of occupancy of Phase IV or building at which warrant criteria levels are approached, if earlier	Applicant for the development	Payment of sewer connection fee / fair share contribution	SSF Public Works Department	