PLANNING COMMISSION
STAFF REPORT

REPORT DATE: February 22, 2010
AGENDA DATE: March 4, 2010
PROJECT ADDRESS: 500 James Fowler Road (MST2009-00424) (CDP2009-00014)
Basin E/F Tidal Restoration Project
TO: Planning Commission
FROM: Planning Division, (805) 564-5470
Danny Kato, Senior Planner
Andrew Bermond, Associate Planner

I. PROJECT DESCRIPTION

The Airport Department proposes to construct a 9.3 acre tidal restoration project in the Goleta Slough to serve as the final portion of mitigation for impacts associated with the Airfield Safety Projects (ASP). The primary purpose of the proposed project is to provide 7.05 acres of wetland restoration area needed to complete the ASP Coastal Development Permit mitigation requirements. Approximately 30.03 acres of the required 37.08 acres of habitat have already been restored to date for the Airfield Safety Projects. The restoration of tidal flows would provide several ecological benefits to the Goleta Slough, improve storm water management from the airfield, and contribute to a reduction of bird strike hazards for aviation.

The proposed project would excavate portions of Basin E/F of the Goleta Slough to accommodate tidal flow. The project would also fill portions of Basin E/F to reduce freshwater ponding and provide more high marsh habitat. The upstream end of the berm separating Foxtrot Drainage from Basin E would be breached just south of the culvert outfall and a small portion of the drainage would be filled to divert storm waters into a new channel through Basin E. At the downstream end of the Foxtrot Drainage/Basin E berm a portion of the berm would be breached near the confluence of Foxtrot Drainage and Tecolotito Creek to create a connection between Basin E and the creek. The middle section of the Foxtrot Drainage/Basin E berm would be lowered and blended into Basin E topography to accommodate tidal flow. These breaches would occur following site grading. The 24-inch culvert at the southern berm of Basin E and the 36-inch culvert and sluice gate at the southern end of Basin F would both be removed. Additionally, hydrological connectivity with Basin G would also be improved by clearing the 24-inch culvert and grading the northwestern corner of Basin G to facilitate flow and minimize ponding.
II. REQUIRED APPLICATIONS

The discretionary applications required for this project is a recommendation to the California Coastal Commission for a Goleta Slough Coastal Development Permit (CDP2009-00014) to allow the proposed development in the Original Jurisdiction of the City’s Coastal Zone (SBMC §29.25.050);

III. RECOMMENDATION

The proposed project conforms to the City’s Zoning and Building Ordinances and policies of the Local Coastal Program. In addition, the environmental and safety benefits of the project are consistent with the Goleta Slough Reserve and the needs of the Airport. Therefore, Staff recommends that the Planning Commission recommend approval to the California Coastal Commission making the findings outlined in Section VII of this report, and subject to the conditions of approval in Exhibit A.

APPLICATION DEEMED COMPLETE: October 13, 2009
DATE ACTION REQUIRED: 60 days after adoption of Negative Declaration
IV. SITE INFORMATION AND PROJECT STATISTICS

A. SITE INFORMATION

<table>
<thead>
<tr>
<th>Applicant: Owen Thomas, City of Santa Barbara</th>
<th>Property Owner: Karen Ramsdell, City of Santa Barbara</th>
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<tbody>
<tr>
<td>Parcel Number: 073-450-003</td>
<td>Lot Area: 952 acres (project site is approximately 13 acres).</td>
</tr>
<tr>
<td>General Plan: Recreational Open Space</td>
<td>Zoning: Goleta Slough Reserve Zone (G-S-R), Coastal Zone Overlay (S-D-3)</td>
</tr>
<tr>
<td>Existing Use: Open Space</td>
<td>Topography: Generally level, approximately 5 feet above sea level gradually sloping to the Pacific Ocean</td>
</tr>
</tbody>
</table>

Adjacent Land Uses:
- North – Airfield
- South – Seasonal wetland, UCSB
- East – Tidal wetland, airfield
- West – Seasonal wetland

V. ZONING ORDINANCE CONSISTENCY

A. GOLETA SLOUGH RESERVE ZONE (G-S-R)

The proposed project site is within the Goleta Slough Reserve zone (G-S-R) (SBMC §29.25). The intent of this zone is to ensure that any development in or adjacent to any wetland area is designed to preserve the wetland as it exists or improve habitat values within the Slough. The Basin E/F Tidal Restoration Project would meet the requirements of the Goleta Slough Reserve Zone because it would be a project in which restoration and enhancement are the sole purposes of the project (SBMC §29.25.030).

VI. ISSUES

A. LOCAL COASTAL PROGRAM (S-D-3) CONSISTENCY

The project site is located in Component 9 of the City’s Local Coastal Program (LCP) in the Original Jurisdiction of the California Coastal Commission. The Planning Commission must make a recommendation of approval prior to the filing of an application for a Goleta Slough Coastal Development Permit with the California Coastal Commission. The project area is designated as Recreational Open Space on the LCP land use map. The policies that pertain specifically to this area are contained in the Airport Local Coastal Plan. The City General Plan also includes policies relevant to the project. The relevant City policies are provided in Exhibit F and are discussed below.

1. Tidal Restoration Acreage

Policy C-11 establishes mitigation requirements for the Airfield Safety Projects (ASP). Policy C-11 requires 4:1 mitigation ratio for all impacts to seasonal wetlands and 2:1 ratio for all impacts to tidal creeks and open channels. Of the
4:1 mitigation, 3:1 was required to be constructed concurrently with the ASP, with the deferred 1:1 to be constructed following completion of the Goleta Slough Tidal Demonstration Project.

When Policy C-11 was incorporated into the LCP in May 2003, it was assumed that the ASP would permanently impact 13.30 acres of wetland habitat. In the July 2003 ASP Wetland Restoration Plan, this estimate was revised to 13.99 acres, of which 4.72 acres were tidal creek habitat and 9.27 acres were non-tidal wetlands. The restoration proposed in the ASP Wetland Restoration Plan provided an estimated 9.4 acres (2:1) of tidal wetland habitat restoration and 32.6 acres (3.3:1) of seasonal wetland habitat restoration. This proposal reduced the seasonal deferred mitigation acreage from 9.4 to 4.47. The ASP and associated 3:1 seasonal mitigation and 2:1 tidal creek mitigation were constructed in 2006-2007.

Following successful completion of the Goleta Slough Tidal Demonstration Project in 2009 the Airport Department contracted with URS Corporation to complete a wetland delineation study (Exhibit E). This study concluded that of the 32.6 acres of seasonal wetland restoration planned to be installed under the ASP Wetland Restoration Plan, only 30.03 acres met the Coastal Commission’s one parameter wetland definition. This leaves an obligation of 7.05 acres of wetland mitigation to be installed. The proposed project would provide 9.3 acres of tidal wetland mitigation, including the 2.5-acre Tidal Demonstration Basin which was not included in any previous mitigation totals. See Table 1 for a comparison of the various mitigation estimates.

<table>
<thead>
<tr>
<th></th>
<th>Impacted Area</th>
<th>Concurrent Mitigation (3:1)</th>
<th>Deferred Mitigation</th>
<th>Total Seasonal Mitigation</th>
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<tr>
<td>Policy C-11 (Estimate)</td>
<td>13.3</td>
<td>39.9</td>
<td>13.3</td>
<td>53.2</td>
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<td>Restoration Plan (Estimate)</td>
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<tr>
<td>Proposed Project Contribution</td>
<td>9.3</td>
<td>39.33</td>
<td></td>
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</tr>
</tbody>
</table>

A portion of Policy C-11 states that the Airport Department “shall provide 13.30 acres of required wetland mitigation as part of a future, long-term project to restore tidal circulation to portions of the Goleta Slough.” That acreage was based on the assumption that a total of 13.30 acres of seasonal wetland would be impacted by the ASP. It is unlikely that Policy C-11 was intended to establish a mitigation requirement greater than its 4:1 mitigation ratio. As the proposed project consists of 9.3 acres of habitat restoration, where the remaining mitigation requirement is 7.05 acres, the proposed project is consistent with
Policy C-11. Additionally Condition F-7 (Exhibit A) would establish a 7-year biological monitoring program as required by Policy C-11.

2. Environmentally Sensitive Habitat
   
   a. Natural Buffer
   
   Policy C-4 states that a buffer of 100 feet in width shall be maintained in a natural condition along the periphery of all wetland communities. In 1999 the Airport Department completed the 40-acre Safety Area Grading Mitigation project which created a marginal upland and wetland habitat between the airfield and several basins. In the vicinity of Basin E/F this marginal habitat area is 110-160 feet wide. The proposed project would not encroach into this previous mitigation on the north side of Basin E/F where it serves has a minimum 100-foot buffer. Therefore the proposed project is consistent with Policy C-4.

   b. Sensitive Species
   
   Policies C-15 and C-16 require that special status plant and wildlife protection measures be implemented for all projects that will potentially impact sensitive plant and wildlife species. Conditions F-4 through F-7 would require the applicant to construct outside of bird breeding and rainy seasons, monitor and maintain plantings for 7 years and conduct tidewater goby and bird surveys. These four conditions cover the protection, avoidance, and reestablishment of habitat for all protected species identified in the Final Mitigated Negative Declaration (Exhibit D).

   Policy C-16 also requires all construction and habitat restoration associated with the ASP to be reviewed and approved by regulatory agencies having jurisdiction over the relevant resource. The California Department of Fish and Game was sent a copy of the Draft Mitigated Negative Declaration for the proposed project, but did not comment. As the proposed project would require a Streambed Alteration Agreement, the California Department of Fish and Game would need to approve the project prior to implementation. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service have been sent copies of the Biological Assessment of the proposed project prepared for the Federal Aviation Administration. The proposed project is consistent with Policies C-15 and C-16.

3. Water Quality
   
   Policy C-12 states that a project must be sited to protect water quality and minimize impacts to coastal waters. The proposed project would establish tidal influence in Basin E/F. This would provide increased habitat for aquatic biota such as the federally listed endangered tidewater goby. The proposed project would not create any new impervious surfaces, and it limits disturbance to natural drainage features and vegetation to a single construction access point and
the creation of openings necessary to allow tidal flows. Condition E-2 would require incorporation of Best Management Practices in preventing the introduction of pollutants into the environment from site run-off. Therefore the proposed project is consistent with Policy C-12.

Policy C-14 requires a Construction Phase Erosion Control and Polluted Runoff Control Plans for all projects requiring a Coastal Development Permit and a grading or building permit. Condition F-12 would require the development of a Storm Water Pollution Prevention Plan (SWPPP) to address the requirements of these plans pertaining to revegetation and Best Management Practices. Additionally Condition F-6 limits construction outside of the rainy season. As the SWPPP would be required to satisfy all of the criteria for the Construction Phase Erosion Control and Polluted Runoff Control Plans, the proposed project is consistent with Policy C-14.

a. Sedimentation

Policy C-5 states that projects should reduce the flow of sediment into the Slough to the minimum compatible with maintenance of the marshland. The proposed restoration of tidal flows would serve as a natural periodic removal of sediment, as excess in the ecosystem would flow downstream at low tides. Therefore the proposed project is consistent with Policy C-5.

Policy C-9 of the Airport and Goleta Slough LCP states that grading within or adjacent to identified wetland areas may only occur where there is no feasible less environmentally damaging alternative (Coastal Act §30233 (a)(7)). The Basin E/F Tidal Restoration Project would enhance the existing environment by removing man-made features (i.e. tide gate) and restoring tidal flows to a coastal wetland. All other feasible restoration sites would face similarly less-than significant environmental impacts, but would incur a greater cost to construct. Therefore the proposed project is consistent with Policy C-9.

4. Access

Policy A-1 states that access within the Goleta Slough will be restricted except for people conducting compatible research and educational projects. Persons interested in conducting research in the Slough must submit a Goleta Slough Access Permit Application to the Airport Director to receive access within the Airport perimeter fence. The proposed project would not conflict with the existing Goleta Slough Access Permit Program. The project would also provide additional tidal habitat and biological studies of this habitat for educational use.

5. Cultural Resources

Airport LCP Policy F-3 states that new development shall protect and preserve archaeological or other culturally sensitive resources. The proposed project site is not known to contain archeological resources. Any archaeological or cultural resources present at the project site would remain undisturbed en situ
and construction crews will be notified to stop work until the find can be analyzed by a qualified archaeologist as required by Conditions G-2 and H-30. Therefore, the project is consistent with the protection of cultural resources.

B. **SANTA BARBARA COUNTY AIRPORT LAND USE PLAN CONSISTENCY**

The proposed project site is within Safety Area 3 – Airport Traffic Pattern Area as defined by the Santa Barbara County Airport Land Use Plan (ALUP). The Airport Safety Policy for Safety Area 3 defines incompatible land uses as any use which would result in large concentrations of people, such as schools, hospitals, apartment blocks, or shopping centers beneath downwind and base legs or departure paths. The ALUP states that for general purposes the threshold for review by the Airport Land Use Commission is 25 persons per acre or more than four units per acre for residential projects. The proposed project would involve the restoration of 9.3 acres of habitat restoration outside of any approach or departure paths. The proposed project would not involve the construction of any new structure or create any change in population density. Therefore the proposed project is consistent with the Airport Safety Policy for Safety Area 3.

C. **GOLETA SLOUGH ECOSYSTEM MANAGEMENT PLAN CONSISTENCY**

The Goleta Slough Ecosystem Management Plan (GSEMP) was completed in 1997 and was adopted and incorporated by reference into the Airport and Goleta Slough Local Coastal Program (LCP) Policy C-10.

Policy P-5 states that flood-deposited sediment that has accumulated in former tidal wetlands should be periodically removed. The proposed project would remove approximately 12,700 cubic yards of silt and sediment from Basin E/F. The proposed restoration of tidal flows would serve as a natural periodic removal of sediment, as excess in the ecosystem would flow downstream at low tides. Therefore the proposed project is consistent with Policy P-5.

Policy R-2 states that where compatible with existing land uses, historic estuarine habitats, functions, and conditions should be restored. Prior to the expansion of the airfield and installation of fill and berms in the Goleta Slough associated with the Marine Corps Air Station Santa Barbara, tidal influence reached the area known as Basin E/F. The proposed project would restore this tidal habitat and function. Therefore the proposed project is consistent with Policy R-2.

Policy R-4 states that projects should improve ecological linkages and avoid habitat fragmentation within the Goleta Slough ecosystem. The proposed project is designed to provide a gradual change in elevation to accommodate tidal wetland, transitional, and upland habitat. The restoration of the historic linkage between Basin E/F and the tidal flows of Tecolotitco Creek would improve ecological linkages and increase the variety of habitat in and around Basin E/F. Therefore the proposed project is consistent with Policy R-4.
D. **ENVIRONMENTAL REVIEW**

Environmental Review of the proposed project is conducted pursuant to the California Environmental Quality Act (CEQA). An Initial Study and Draft Mitigated Negative Declaration were prepared to evaluate the proposed project’s potential impacts on the physical environment. The Initial Study found potentially significant but mitigable impacts to short-term air quality, biological resources, and water quality.

The public were invited to comment on the Draft Mitigated Negative Declaration during a public comment period from December 7, 2009 to January 19, 2010. The comment period was extended beyond 30 days to accommodate the City’s employee furlough schedule. Written comments were received and taken into consideration. None of the comments resulted in the identification of a new significant impact or a change in significance of an impact. The Initial Study and Final Mitigated Negative Declaration respond to these comments and have been revised to include clarification and amplification of information as discovered in the public review process (CEQA Guidelines §15073.5(c)). The Final Mitigated Negative Declaration and its attachments are included as Exhibit D.

Significant environmental effects identified in the Final Mitigated Negative Declaration that are anticipated as a result of the project include impacts related to air quality, biological resources, and the water environment. The Final Mitigated Negative Declaration includes proposed mitigation measures to mitigate potentially significant impacts to a less than significant level. These measures are incorporated into Staff’s recommended Conditions of Approval (Exhibit A).

VII. **FINDINGS**

The Planning Commission finds the following:

A. **FINAL MITIGATED NEGATIVE DECLARATION ADOPTION (CEQA GUIDELINES §15074)**

1. The Planning Commission has considered the proposed Final Mitigated Negative Declaration together with comments received during the public review period process.

2. The Planning Commission finds on the basis of the whole record before it (including the initial study and comments received) that there is no substantial evidence that the project, as mitigated, will have a significant impact on the environment. The Final Mitigated Negative Declaration dated February 9, 2010 is hereby adopted.

3. The Planning Commission finds that the Final Mitigated Negative Declaration reflects the Planning Commission’s independent judgment and analysis.
4. The Planning Commission finds that the Final Mitigated Negative Declaration has been prepared in compliance with CEQA, and constitutes adequate environmental evaluation for the proposed project.

5. A mitigation monitoring and reporting program for measures required in the project or made a condition of approval to mitigate or avoid significant environmental effects has been prepared.

6. The project is within the boundaries of the Santa Barbara County Airport Land Use Plan. The project will not result in a safety hazard or noise problem for persons using the airport or for persons residing or working in the project area as discussed in Section VI.B of this report.

7. The location and custodian of the documents or other materials which constitute the record of proceedings upon which this decision is based is the City of Santa Barbara Community Development Department, 630 Garden Street, Santa Barbara, California.

8. The California Department of Fish and Game (CDFG) is a Trustee Agency with oversight over fish and wildlife resources of the State. The CDFG collects a fee from project proponents of all projects potentially affecting fish and wildlife, to defray the cost of managing and protecting resources. The project is subject to the DFG fee, and a condition of approval has been included which requires the applicant to pay the fee within five days of project approval.

B. **RECOMMENDATION FOR A GOLETA SLOUGH COASTAL DEVELOPMENT PERMIT (SBMC §29.25.050)**

1. The project is consistent with all applicable policies of the City's Local Coastal Program and all applicable provisions of the Code, because it will enhance and restore tidal wetland habitat as specified by Policy C-11 and SBMC §29.25.030.

2. The project is consistent with the policies of the California Coastal Act, because it will restore tidal wetland habitat as discussed in Section I of this report (Coastal Act Section 30230).

3. The project is dependent upon the resources of the environmentally sensitive area and is consistent with Section 30233 of the Coastal Act because it is a habitat restoration project (Coastal Act Section 30233(a)(6)).

4. The project has been designed to prevent impacts which would significantly degrade an environmentally sensitive area and is compatible with the continuance of such habitat by enhancing its value as critical habitat as discussed in Section VI.A.2 (Policy C-9).

5. The project design maintains a natural buffer area of 100 feet between developed areas and all wetland areas, and all disturbed areas will be revegetated with native plants as discussed in Section VI.A.2 of this report (Policy C-4).
6. The project will sustain the biological productivity of coastal waters (Policy C-12) and will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes by providing habitat for rare and endangered species including the Belding’s savannah sparrow and tidewater goby as discussed in Policy VI.A.2 of this report (Policy A-1).

7. The project includes adequate impact avoidance and mitigation measures to ensure protection of State and federally identified rare, threatened, or endangered species by incorporating monitoring of sensitive species and limiting construction to July through November as discussed in Section VI.A.2 of this report.

8. There is no less environmentally damaging alternative to the project, all feasible mitigation measures have been provided to minimize adverse environmental effects, all dredged spoils will be removed from the wetland area to avoid significant disruption to wildlife habitat and water circulation, and the project is designed to enhance the functional capacity of the wetland by providing critical habitat as discussed in Section VI.A.2 of this report (Policy C-15).

9. The project would not create a substantial alteration of rivers or streams in the Goleta Slough because the damming and dewatering of a portion of Tecolotito Creek will occur during the dry season, when flows are at their lowest, and will not take place until the last phase of project grading as discussed in Section I of this report.

10. Archaeological or other culturally sensitive resources within the Goleta Slough are protected from impacts because the selected project site is not in a Cultural Resource Sensitivity Area, and construction crews will be notified to stop work in the event of a resource discovery as discussed in Section VI.A.5.

11. The project will minimize adverse effects of run-off and interference with surface water flow through the implementation of a Storm Water Pollution Prevention Plan (SWPPP) discussed in Section VI.A.3 of this report.

12. Sedimentation from the project will be reduced to a minimum in a manner compatible with the maintenance of the wetland area by implementation of Best Management Practices in accordance with the SWPPP. Long-term sedimentation will be reduced by regular tidal influence as discussed in Section VI.A.3 of this report.

13. The project will enhance public educational opportunities at the Goleta Slough through continued maintenance of the Goleta Slough Access Permit program which allows researchers, student groups, and other interested parties to view and study the Goleta Slough’s tidal prism as discussed in Section VI.A.4 of this report.
Exhibits:

A. Conditions of Approval
B. Site Plan
C. Applicant's letter, dated September 21, 2009
D. Final Mitigated Negative Declaration (with attachments)
E. Wetland delineation letter, dated June 18, 2009
F. Applicable Policies
In consideration of the recommendation of approval of the project granted by the Planning Commission and for the benefit of the City of Santa Barbara, the Airports and occupants of adjacent real property and the public generally, the following terms and conditions are recommended to be imposed by the California Coastal Commission in approving a Goleta Slough Coastal Development Permit:

A. **California Department of Fish and Game Fees Required.** Pursuant to Section 21089(b) of the California Public Resources Code and Section 711.4 et. seq. of the California Fish and Game Code, the approval of this permit/project shall not be considered final unless the specified Department of Fish and Game fees are paid and filed with the California Department of Fish and Game within five days of the project approval. The fee required is $2010.25 for projects with Negative Declarations. Without the appropriate fee, the Notice of Determination cannot be filed and the project approval is not operative, vested, or final. The fee shall be delivered to the Planning Division immediately upon project approval in the form of a check payable to the California Department of Fish and Game.

B. **Approved Development.** The development recommended for approval by the Planning Commission on TBD is limited to 10.3 acres of wetland habitat mitigation and the improvements shown on the plans signed by the Chairman of the Planning Commission on said date and on file at the City of Santa Barbara.

C. **Storm Water Pollution Control and Drainage Systems Maintenance.** The Santa Barbara Airport Department (Airport) shall maintain the drainage system and storm water pollution control devices intended to intercept siltation and other potential pollutants (including, but not limited to, hydrocarbons, fecal bacteria, herbicides, fertilizers, etc.) in a functioning state (and in accordance with the Operations and Maintenance Procedure Plan prepared in accordance with the Storm Water Management Plan BMP Guidance Manual). Should any of the project’s surface or subsurface drainage structures or storm water pollution control methods fail to capture, infiltrate, and/or treat water, or result in increased erosion, the Airport shall be responsible for any necessary repairs to the system and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the Airport shall submit a repair and restoration plan to the Community Development Director to determine if an amendment or a new Building Permit and Coastal Development Permit are required to authorize such work. The Airport is responsible for the adequacy of any project-related drainage facilities and for the continued maintenance thereof in a manner that will preclude any hazard to life, health, or damage to the Real Property or any adjoining property.

The Airport shall provide an Operations and Maintenance Procedure Plan (describing replacement schedules for pollution absorbing pillows, etc.) for the operation and use of the storm drain surface pollutant interceptors. The Plan shall be reviewed and approved by the Water Resources Specialist.

D. **Pesticide or Fertilizer Usage Prohibited.** The use of pesticides or fertilizer shall be prohibited within the project site in Goleta Slough.
E. **Public Works Requirements Prior to Building Permit Issuance.** The Airport shall submit the following, or evidence of completion of the following to the Public Works Department for review and approval, prior to the issuance of a Building Permit for the project.

1. **Drainage Calculations.** The Airport shall submit drainage calculations prepared by a registered civil engineer or licensed architect demonstrating that the new development will not increase runoff amounts above existing conditions for a 25-year storm event. Any increase in runoff shall be retained on-site.

2. **Drainage and Water Quality.** Project drainage shall be designed, installed, and maintained such that stormwater runoff from the first inch of rain from any storm event shall be retained and treated onsite in accordance with the City’s NPDES Storm Water Management Permit. Runoff should be directed into a passive water treatment method such as a bioswale, landscape feature (planter beds and/or lawns), infiltration trench, etc. Project plans for grading, drainage, stormwater treatment methods, and project development, shall be subject to review and approval by City Building Division and Public Works Department. Sufficient engineered design and adequate measures shall be employed to ensure that no significant construction-related or long-term effects from increased runoff, erosion and sedimentation, or groundwater pollutants would result from the project. The Airport shall maintain the drainage system and storm water pollution control methods in a functioning state.

F. **Community Development Requirements with Building Permit Application.** The following shall be submitted with the application for any Building or Public Works permit and finalized prior to Building or Public Works Permit issuance:

1. **Project Environmental Coordinator Required.** Submit to the Planning Division a contract with a qualified representative for the Airport, subject to approval of the contract and the representative by the Planning Division, to act as the Project Environmental Coordinator (PEC). The PEC shall be responsible for assuring full compliance with the provisions of the Mitigation Monitoring and Reporting Program (MMRP) and Conditions of Approval to the City. The contract shall include the following, at a minimum:
   
a. The frequency and/or schedule of the monitoring of the mitigation measures.

b. A method for monitoring the mitigation measures.

c. A list of reporting procedures, including the responsible party, and frequency.

d. A list of other monitors to be hired, if applicable, and their qualifications.

e. Submittal of monthly reports during demolition, excavation, grading and footing installation and monthly reports on all other construction activity.
regarding MMRP and condition compliance by the PEC to the Community Development Department/case planner.

f. The PEC shall have authority over all other monitors/specialists, the contractor, and all construction personnel for those actions that relate to the items listed in the MMRP and conditions of approval, including the authority to stop work, if necessary, to achieve compliance with mitigation measures.

g. The PEC shall monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when construction work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District (Required Mitigation Measure AQ-7).

2. Neighborhood Notification Prior to Construction. At least twenty (20) days prior to commencement of construction, the contractor shall provide written notice to Airport, all businesses, and residents within 300 feet of the project area. The notice shall contain a description of the project, the construction schedule, including days and hours of construction, the name and phone number of the Project Environmental Coordinator (PEC) and Contractor(s), site rules and Conditions of Approval pertaining to construction activities and any additional information that will assist the Building Inspectors, Police Officers and the public in addressing problems that may arise during construction. The language of the notice and the mailing list shall be reviewed and approved by the Planning Division prior to being distributed. An affidavit signed by the person(s) who compiled the mailing list shall be submitted to the Planning Division.

3. Contractor and Subcontractor Notification. The Airport shall notify in writing all contractors and subcontractors of the site rules, restrictions, and Conditions of Approval. Submit a copy of the notice to the Planning Division.

4. Tidewater Goby Surveys. Prior to construction and during all dewatering activities surveys shall be conducted by a biologist approved to handle tidewater gobies under a Section 10a(1a) Recovery Permit to determine the general abundance of tidewater gobies in tidal basin. Relocation of any tidewater gobies shall follow the procedures described in the USFWS Tidewater Goby Survey Protocol (2006). All native fish species shall be relocated from the Tidal Demonstration Basin and Foxtrot Drainage prior to any earthwork. The area of Tecolotito Creek and Foxtrot Drainage to be dewatered shall be minimized, not completely dewatered if practical, and kept moist in order to minimize mortality of aquatic species. Foot traffic in any channel bottom shall be limited to fish relocation and dewatering activities.

Post construction surveys for tidewater goby shall be implemented for 2 years following completion of the project. The surveys shall be conducted by a Section
10a(1a) Recovery Permit approved biologist to determine the general abundance of tidewater gobies in tidal basin. Survey methods shall follow those previously conducted by Ecorp Consulting to measure population densities in Tecolotito and Carneros Creeks. A total of four surveys shall be conducted including one pre-spawn survey in May/June and one post-spawn survey in August of each year.

All tidewater goby survey reports shall be submitted to the USFWS for acceptance (Required Mitigation Measure BIO-1).

5. **Bird Monitoring.** The project site shall be monitored by a qualified biologist for Belding’s savannah sparrow and loggerhead shrike. Prior to site preparation and construction activities, the Airport shall have a qualified biologist survey all breeding/nesting habitat within the project site every seven days for eight consecutive weeks. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). Site preparation and construction activities will only begin if no breeding/nesting birds are observed and concurrence has been received from the CDFG. If breeding activities or an active nest is located in a work area, site preparation and construction activities shall not begin in that area until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area and the young will no longer be impacted by the project.

Once site preparation and construction activities have commenced, the project site shall be monitored for Belding’s savannah sparrow and loggerhead shrike on a weekly basis. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG) until construction is complete.

Site preparation or construction activities shall be suspended immediately in a given basin if the qualified biologist determines that breeding or nesting activity is occurring in that basin. Site preparation and construction activities shall not resume until the monitor determines that the breeding and nesting activities described above have stopped.

Noise levels will be monitored by a qualified biologist to determine if construction activities are disruptive to Belding’s savannah sparrow or loggerhead shrike in or adjacent to the project site. If a significant disruption to foraging behavior is observed, construction activities in the area of disturbance will be stopped immediately until the qualified biologist develops recommendations to reduce or eliminate the disturbances and receives concurrence from CDFG.

Use of the project site by Belding’s savannah sparrows or loggerhead shrike will be recorded during routine restoration monitoring, including evidence of breeding (Required Mitigation Measure BIO-2).

6. **Construction Season Limitation.** Construction shall be prohibited between November 1 and July 15 to avoid the rainy season, Belding’s savannah sparrow and
loggerhead shrike breeding season and potential Steelhead migration (*Required Mitigation Measure BIO-3*).

7. **Biological Monitoring and Performance.** Areas of temporary disturbance along the access routes shall be reseeded with native plants from local genetic stock. Weeding will be performed to ensure that restoration performance criteria are met. Weeding shall occur at least six times per year, or more frequently if necessary. Maintenance will be performed by hand, including techniques such as weed whacking and hand removal which has proven affective in other Airport restoration projects. Herbicides shall only be used if hand removal is not effective. Herbicides must be approved for use near water. Only targeted application will be permitted; no blanket spraying will be allowed. Application will be supervised by a qualified biologist. Prior to application of herbicide, the maintenance crew must alert the Airport in compliance with the City of Santa Barbara’s Integrated Pest Management Program. A project completion report shall be prepared following the conclusion of construction activities.

Monitoring and reporting shall occur for a period of at least seven if the performance criteria are not met. If performance criteria are not met by the end of year 7, then the choice of plants, site conditions, performance criteria, and other factors would be reevaluated by a qualified biologist. A new restoration effort would be implemented with a new monitoring period.

Performance criteria for the initial seeding effort would be as follows:

- All installed plants must achieve a 70% survival rate after one year following the construction completion, and an 80% survival rate of the remaining plants after two and three years.
- At the end of seven years, there must be a minimum of 75% total native plant cover.
- Non-native weeds must remain below 15% of total vegetative coverage at all times during the seven year period. By the end of the seventh year, the restoration site shall not have more than 10% non-native cover. Non-native grasses and common naturalized species that are not aggressive such as brass buttons (*Cotula coronopifolia*) are not included in this performance criteria.
- The project site must be without supplemental irrigation for a minimum of three years.
- Except for pickleweed, no species shall constitute more than 50% of the vegetative cover.
- No woody invasive species shall be present, and herbaceous invasive species shall not exceed 5% cover.

Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the monitoring period. The Airport shall
prepare annual revegetation status report on the condition of the seeded areas during the monitoring period. An annual monitoring report shall be prepared detailing the condition of the revegetation area in respect to the performance criteria. The annual report shall contain quantitative analysis of achievement of performance criteria. The annual revegetation monitoring period shall span 12 months following completion of revegetation of the project site. Annual reports shall be completed one month after the end of the monitoring period and submitted to the permitting agencies (Required Mitigation Measure BIO-4).

8. **Pre-Construction Plant Survey.** A pre-construction survey shall be conducted during the blooming period for southern tarplant (July-August) and Coulter’s goldfields (February-June) immediately prior to construction in all areas of the project site containing habitat suitable to support southern tarplant and/or Coulter’s goldfields. Populations within or adjacent to the project site that can be avoided will be clearly marked with identifying flagging to ensure projection of the species. If individuals or populations of southern tarplant and Coulter’s goldfields cannot be avoided, all seed available from the plant to be removed would be salvaged and used in the restoration seed mix (Required Mitigation Measure BIO-5).

9. **Traffic Route Approval.** The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods, subject to approval by the Transportation Manager (Recommended Mitigation Measure TC-2)

10. **Haul Route Approval.** The haul route(s) for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Manager (Recommended Mitigation Measure TC-3)

11. **Parking/Storage Approval.** The location of construction parking and storage shall be provided in locations subject to the approval of the Transportation Manager. During construction, free parking spaces for construction workers shall be provided (Recommended Mitigation Measure TC-4)

12. **Letter of Commitment for Pre-Construction Conference.** The Airport shall submit to the Planning Division a letter of commitment that states that, prior to disturbing any part of the project site for any reason and after the Building permit has been issued, the General Contractor shall schedule a conference to review site conditions, construction schedule, construction conditions, and environmental monitoring requirements. The conference shall include representatives from the Public Works Department Engineering and Transportation Divisions, the assigned Building Inspector, the Planning Division, the Property Airport, the Landscape Architect, the Biologist, the Project Engineer, the Project Environmental Coordinator, the Contractor and each subcontractor.

G. **Building Permit Plan Requirements.** The following requirements/notes shall be incorporated into the construction plans submitted to the Building and Safety Division for Building permits.

Updated on 2/23/2010
1. **Mitigation Monitoring and Reporting Requirement.** Airport shall implement the Mitigation Monitoring and Reporting Program (MMRP) for the project's mitigation measures, as stated in the Mitigated Negative Declaration for the project.

2. **Unanticipated Archaeological Resources Contractor Notification.** Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts associated with past human occupation of the parcel. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and an archaeologist from the most current City Qualified Archaeologists List shall be retained by the Airport. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

   If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. A Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

   If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization (*Required Mitigation Measure CR-1*).

3. **Conditions on Plans/Signatures.** The final California Coastal Commission Resolution shall be provided on a full size drawing sheet as part of the drawing sets. Each condition shall have a sheet and/or note reference to verify condition compliance. If the condition relates to a document submittal, indicate the status of the submittal (e.g., Archaeologist contract submitted to Community Development Department for review). A statement shall also be placed on the above sheet as follows: The undersigned have read and understand the above conditions, and agree to abide by any and all conditions which is their usual and customary responsibility to perform, and which are within their authority to perform.
H. Construction Implementation Requirements. All of these construction requirements shall be carried out in the field by the Airport and/or Contractor for the duration of the project construction.

1. Pre-Construction Conference. Not less than 10 days or more than 20 days prior to commencement of construction, a conference to review site conditions, construction schedule, construction conditions, and environmental monitoring requirements, shall be held by the General Contractor. The conference shall include representatives from the Public Works Department Engineering and Transportation Divisions, Building Division, Planning Division, the Airport Department, Landscape Architect, Biologist, Project Engineer, Project Environmental Coordinator, Mitigation Monitors, Contractor and each Subcontractor.

2. Construction Dust Control – Minimize Disturbed Area/Speed. Amount of disturbed area shall be minimized and on site vehicle speeds shall be limited to 15 miles per hour or less (Required Mitigation Measure AQ-1).

3. Construction Dust Control - Watering. During site grading and transportation of fill materials, regular water sprinkling shall use reclaimed water whenever the Public Works Director determines that it is reasonably available. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust.

Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph (Required Mitigation Measure AQ-2).
4. **Construction Dust Control – Tarping.** Trucks transporting fill material to and from the site shall be covered from the point of origin *(Required Mitigation Measure AQ-3).*

5. **Construction Dust Control – Gravel Pads.** Gravel pads shall be installed at all access points to prevent tracking of mud on to public roads *(Required Mitigation Measure AQ-4).*

6. **Construction Dust Control – Stockpiling.** If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation *(Required Mitigation Measure AQ-5).*

7. **Construction Dust Control – Disturbed Area Treatment.** After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:
   
   A. Seeding and watering until grass cover is grown;
   B. Spreading soil binders;
   C. Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind;
   D. Other methods approved in advance by the Air Pollution Control District *(Required Mitigation Measure AQ-6).*

8. **Portable Construction Equipment.** All portable diesel-powered construction equipment shall be registered with the state’s portable equipment registration program OR shall obtain an APCD permit *(Required Mitigation Measure AQ-8).*

9. **Fleet Owners.** Fleet owners are subject to sections 2449, 2449.2, and 2449.3 in Title 13, Article 4.8, Chapter 9, of the California Code of regulations (CCR) to reduce diesel particulate matter (and criteria pollutant emissions from in-use off-road diesel-fueled vehicles. See [http://www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf](http://www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf) *(Required Mitigation Measure AQ-9).*

10. **Engine Size.** The engine size of construction equipment shall be the minimum practical size *(Required Mitigation Measure AQ-10).*

11. **Equipment Numbers.** The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time *(Required Mitigation Measure AQ-11).*

12. **Equipment maintenance.** All construction equipment shall be maintained in tune per the manufacturer’s specifications *(Required Mitigation Measure AQ-12).*
13. **Catalytic Converters.** Catalytic converters shall be installed on gasoline-powered equipment, if feasible *(Required Mitigation Measure AQ-13).*

14. **Diesel Construction Equipment.** Only heavy-duty diesel construction equipment manufactured after 1996 (with federally mandated “clean” diesel engines) shall be used *(Required Mitigation Measure AQ-14).*

15. **Engine Timing and Diesel Catalytic Converters.** Construction equipment operating on site shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines. Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed *(Required Mitigation Measure AQ-15).*

16. **Diesel Replacements.** Diesel powered equipment shall be replaced by electric equipment whenever feasible *(Required Mitigation Measure AQ-16).*

17. **Idling Limitation.** Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units shall be used whenever possible *(Required Mitigation Measure AQ-17).*

18. **Hazardous Materials Discovery.** All construction work shall cease in the event of visual discovery of hazardous or unknown material or upon discovery of chemical odors. The Santa Barbara County Hazardous Materials Unit (HMU) shall be contacted and given access to the site. Resumption of work shall not take place until such work has been approved by the HMU *(Recommended Mitigation Measure HAZ-1).*

19. **Construction Noise Reduction.** All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers’ muffler and silencing devices *(Recommended Mitigation Measure NOI-1).*

20. **Recycling/Green Waste Reuse.** Recycling and/or reuse of construction and green waste materials shall be implemented and containers shall be provided on site for that purpose during the construction period *(Recommended Mitigation Measure PF-1).*

21. **Construction-Related Truck Trips.** Construction-related truck trips shall not be scheduled during peak hours (7:30 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) to help reduce truck traffic on adjacent streets and roadways *(Recommended Mitigation Measure TC-1).*

22. **Construction Hours.** Construction (including preparation for construction work) is prohibited Monday through Friday before 7:00 a.m. and after 5:00 p.m., and all day on Saturdays, Sundays and holidays observed by the City of Santa Barbara, as shown below:
New Year’s Day January 1st*  
Martin Luther King’s Birthday 3rd Monday in January  
George Washington’s Day 3rd Monday in February  
César Chávez Day March 31*  
Memorial Day Last Monday in May  
Independence Day July 4th*  
Labor Day 1st Monday in September  
Thanksgiving Day 4th Thursday in November  
Following Thanksgiving Day Friday following Thanksgiving Day  
Christmas Day December 25th*  

*When a holiday falls on a Saturday or Sunday, the preceding Friday or following Monday, respectively, shall be observed as a legal holiday.

When, based on required construction type or other appropriate reasons, it is necessary to do work outside the allowed construction hours, contractor shall contact the Chief of Building and Safety to request a waiver from the above construction hours, using the procedure outlined in Santa Barbara Municipal Code §9.16.015 Construction Work at Night. Contractor shall notify all residents within 300 feet of the parcel of intent to carry out night construction a minimum of 48 hours prior to said construction. Said notification shall include what the work includes, the reason for the work, the duration of the proposed work and a contact number that is answered by a person, not a machine.

23. **Construction Parking/Storage/Staging.** Construction parking and storage shall be provided as follows:

a. During construction, free parking spaces for construction workers and construction shall be provided on-site or off-site in a location subject to the approval of the Public Works Director. Construction workers are prohibited from parking within the public right-of-way, except as outlined in subparagraph b. below.

b. Parking in the public right of way is permitted as posted by Municipal Code, as reasonably allowed for in the 2006 Greenbook (or latest reference), and with a Public Works permit in restricted parking zones. No more than three (3) individual parking permits without extensions may be issued for the life of the project.

c. Storage or staging of construction materials and equipment within the public right-of-way shall not be permitted, unless approved by the Transportation Manager.
24. **Water Sprinkling During Grading.** The following dust control measures shall be required, and shall be accomplished using recycled water whenever the Public Works Director determines that it is reasonably available:
   
   a. Site grading and transportation of fill materials.
   
   b. Regular water sprinkling; during clearing, grading, earth moving or excavation.
   
   c. Sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied on-site to prevent dust from leaving the site.
   
   d. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust.
   
   e. Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement on-site damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.

25. **Gravel Pads.** Gravel pads shall be installed at all access points to the project site to prevent tracking of mud on to public roads.

26. **Construction Best Management Practices (BMPs).** Construction activities shall address water quality through the use of BMPs, as approved by the Building and Safety Division.

27. **Mitigation Monitoring Compliance Reports.** The PEC shall submit monthly reports during demolition, excavation, grading and footing installation and monthly reports on all other construction activity regarding MMRP compliance to the Community Development Department.

28. **Construction Contact Sign.** Immediately after Building permit issuance, signage shall be posted at the points of entry to the site that list the contractor(s) (and Project Environmental Coordinator’s (PEC)) name, contractor(s) (and PEC’s) telephone number(s), work hours, site rules, and construction-related conditions, to assist Building Inspectors and Police Officers in the enforcement of the conditions of approval. The construction contact phone number shall include an option to contact a person instead of a machine in case of emergency. The font size shall be a minimum of 0.5 inches in height. Said sign shall not exceed six feet in height from the ground if it is free-standing or placed on a fence. It shall not exceed 24 square feet if in a multi-family or commercial zone or six square feet if in a single family zone.

29. **Construction Equipment Maintenance.** All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers’ muffler and silencing devices.
30. **Unanticipated Archaeological Resources Contractor Notification.** Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts associated with past human occupation of the parcel. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and the Airport shall retain an archaeologist from the most current City Qualified Archaeologists List. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. A Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

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1. **Prior to Project Completion.** Prior to project completion, the Airport shall complete the following:

   1. **New Construction Photographs.** Photographs of the new construction, taken from the same locations as those taken of the story poles prior to project approval, shall be taken, attached to 8 ½ x 11” board and submitted to the Planning Division.

   2. **Mitigation Monitoring Report.** Submit a final construction report for mitigation monitoring.

   3. **Biological Monitoring Contract.** Submit a contract with a qualified biologist acceptable to the City for on-going monitoring.

**NOTICE OF COASTAL DEVELOPMENT PERMIT TIME LIMITS:**

Pursuant to Section 28.44.230 of the Santa Barbara Municipal Code, work on the approved development shall commence within two years of the final action on the application, unless a different time is specified in the Coastal Development Permit. Up to three (3) one-year extensions may be granted by the Community Development Director in accordance with the procedures specified in Subsection 28.44.230.B of the Santa Barbara Municipal Code.
CITY OF SANTA BARBARA
SANTA BARBARA COUNTY, CALIFORNIA

SANTA BARBARA MUNICIPAL AIRPORT

BASIN E/F TIDAL RESTORATION PROJECT

AIP PROJECT NO. 3-06-0235-XX

BID NO. XXXX

AUGUST 2009

GENERAL PROJECT DESCRIPTION
RESTORATION AND CREATION OF TIDAL LANDS
WITHIN BASINS E, F AND G
LANDSCAPE NOTES:

Seed access route with native plants after completion of construction. Access route to be excavated and seeded according to the Project Specifications. Grasses seeded as a rate of 20 lbs per acre and then lightly turned over the soil by manual labor. Seeds to be provided by the Contractor as shown in the Seed Kit Table herein. See landscaping specifications for more instructions.

Maximum water level is 7.0 ft and mean water level 5.3 ft (NAVD 88).

INSTALLATION SPECIFICATIONS

Install plant and seed materials according to the Specifications. Below is a brief summary of the Specifications. Please refer to the Drawings and Specifications for all landscape requirements.

PRELIMINARY SHEET:

Digger the top 3 inches of sod, leave, root mass, surface organic matter and seed from the native soil. Compartment soils into temporary in the basin. In all areas between 4 to 6 feet diameter, plant 3 inches of the adjacent compartment top and root mixture and lightly tamp the topsoil into the trench with a hoe orentyly till to a depth of 3 inches. Smooth and compact with a roller, and then water, as the direction of the Project Specifications. See Specifications.

Contour Planting:

Install 1 gallon container plants provided by the Contractor according to the locations specified on sheet A, and under the direction of the Project Specifications. Plant quantities and spacing are shown in the Plant Mix Table. Tapes are not to deplete the residual, Disease, or branches when installing each contour plant. Dig the soil and plant according to the Drawings. Beside the area so as not to leave any gaps around the container plant or basin. Each plant must receive the 3 inches of root mixture with a 1 ft radius, 3 inches deep, and 3 inches wide to the edges of the basin of the plant. See Specifications.

Broadcast Seeding:

Prior to seeding, a broadcast will cover the field areas to be seeded in patches. Patches to be seeded are shown in the Seed Kit Table. Make soil to a depth of 3 inches prior to broadcasting seeds. Spread seeds over the soil in the basin. Immediately water the seeded areas with a uniform sprinkler irrigation. See Specifications.

SHRUB PLANTING DETAIL

No Site
UNDER CONSTRUCTION
City of Santa Barbara
Santa Barbara Airport

September 21, 2009

Planning Commission
City of Santa Barbara
630 Garden Street
Santa Barbara, CA 93101

SUBJECT: APPLICATION FOR CDP FOR BASIN E/F TIDAL RESTORATION PROJECT AT THE SANTA BARBARA AIRPORT

Honorable Commissioners:

The Santa Barbara Airport is seeking a recommendation from Planning Commission to the California Coastal Commission for approval of a Goleta Slough Coastal Development Permit (CDP) pursuant to Santa Barbara Municipal Code §29.25.020 for the Basin E/F Tidal Restoration Project. The Airport is proposing to implement the remainder of its mitigation requirement for the Airfield Safety Projects based on the results of a three-year field experiment to assess the feasibility of a long-term tidal restoration program. The proposed project would involve creating approximately 9.3 acres of tidal wetland habitat by removing berms, lowering non-tidal basins, expanding tidal influence in the existing experiment basin, and inserting a culvert under Adams berm. The proposed tidal basin would be constructed during the summer of 2010 and monitored for a period of seven years as required by the Airport and Goleta Slough Local Coastal Plan.

Project Background

Efforts to restore tidal circulation to portions of Goleta Slough have been proposed on a number of occasions. However, the Federal Aviation Administration (FAA) and the Airport expressed concerns that restoring tidal circulation to portions of Goleta Slough would modify bird activity near the airfield and possibly increase aviation bird strike hazards. To address these concerns, the Airport Department conducted the Goleta Slough Tidal Experiment from 2006-2009. This experiment involved the construction of a 2.5 acre experimental tidal basin and a "control" impounded basin used to monitor bird behavior. The study concluded that tidal restoration provided a marginal benefit to aviation safety as it reduced the incidents of large flocking freshwater birds that pose the greatest hazard to aviation.

Tidal restoration will benefit the Goleta Slough in a number of factors. It will improve natural wetland habitat, including habitat for sensitive species found in the Slough, and will improve water quality both in Basin E/F and throughout the Goleta Slough.

Wetland Habitat

The Draft Goleta Slough Ecological Management Plan (GSEMP) recommends restoring tidal circulation to historic tidal wetlands to restore the Slough’s natural diversity of resources, habitats, physical processes and functions that have been lost or degraded. Specifically, GSEMP Action R-1.1 identifies restoration of tidal circulation and increasing habitat diversity by restoring tidal mud flats and high marsh habitats as priorities of the GSEMP.

Coastal Act Policy 30233(a) states that filling within coastal wetland areas may be allowed when there is no feasible less environmental damaging alternative, where feasible mitigation
measures have been provided, and when the development is limited to specific types of uses including restoration purposes. Policy 30233(c) further states that dredging, dikeing or filling of coastal wetlands or estuaries shall maintain or enhance the functional capacity of the wetland or estuary. The proposed project involves dredging and fill within coastal wetlands.

**Sensitive Species**

Policy C-15 of the Airport and Goleta Slough LCP requires special status plant and wildlife protection measures to be incorporated into the project design. A Draft Biological Assessment (Attachment 5) has been prepared to address federal, State, and local biological concerns.

The southern steelhead trout is designated an endangered species along the South Coast by the National Marine Fisheries Service (NMFS). However, there have been no sightings or historic records of steelhead along Carreros, San Pedro, and Tecolotito creeks. It would be possible for transitory, individual adult steelhead to attempt to migrate upstream in Tecolotito Creek; however, such an occurrence is considered very unlikely. There are numerous passage impediments upstream of Hollister Avenue. Suitable spawning habitat may be present in Glen Annie Creek; however, summer rearing habitat appears to be limited or absent.

Belding’s savannah sparrow is a subspecies of the widespread savannah sparrow that breeds in coastal salt marshes from northwestern Mexico to southern California, and as far north as Goleta. This subspecies was listed as endangered by the California Department of Fish and Game in 1974 and is a federal Species of Concern. The sparrow is a resident of pickleweed marshes and utilizes pickleweed marsh for nesting, perching, and singing. The species typically nests in the upper littoral zone of tidal pickleweed marshes, where their nests are safe from the highest tides that occur during the nesting season. In Goleta Slough, where many of the basins are non-tidal, the birds establish nesting territories above the water line created by the freshwater impoundments resulting from precipitation.

The construction of the proposed tidal basin would convert approximately seven acres of pickleweed marsh habitat in Basin E/F that is suitable for nesting to mudflat or pickleweed marsh habitat that would be subject to tidal inundation and would not be suitable for nesting.

Given the varying amounts of impounded freshwater in the basins from year to year, the resident population of Belding’s savannah sparrow in Goleta Slough appears to be highly mobile and adaptable to changes in the amount of available nesting habitat. The Draft Biological Assessment notes that the species easily adapts to the introduction of tidal inundation in the experimental basin by finding suitable nesting habitat at higher elevations. In addition, the margins of the newly created pickleweed marsh in the tidal basin would provide high quality habitat for the species because freshwater would not become impounded, resulting in less variation in water levels and more predictable conditions for the sparrow. Under these conditions, plant productivity is also expected to be greater than under the existing non-tidal conditions.

**Water Quality**

Section 30231 of the Coastal Act requires maintaining water quality control of runoff, preventing substantial interference with surface water flow, and maintaining natural vegetation buffers that protect riparian habitat and minimizing alterations of natural streams. Section 30232 requires protection against spillage of hazardous substances. The LCP Amendment incorporated new policies C-12, C-13 and C-14 to protect water quality during construction and operation of the
proposed project.

The proposed project would result in an increase in tidal circulation to Basins E/F. By lowering the basin elevations, the capacity to accept tidal flows and flooding would be increased. The increase in tidal circulation would be beneficial to water quality, since the tidal flows would be exposed to more mudflat habitat during the tidal cycle, which is considered beneficial to surface water quality because of exposure to filter feeding invertebrates. The project would not result in greater surface runoff, since no impervious surfaces would be created.

In the short-term, project construction would involve earthwork to lower the basins, installation of culverts and restoration of habitat with landscaping improvements. Hence, there is a potential for disturbed soils to be discharged to Tecolotito Creek as the result of direct dumping, accidental spills, and/or post-grading erosion during the winter. Further, use of construction equipment could result in contamination of the creek water quality or native vegetation in the event of an inadvertent oil spillage or leakage during construction equipment use, refueling, maintenance or washing during the five-month construction process.

The Airport Department anticipates that the Planning Commission require that earthwork be conducted between July 15 and November 1, when soils are dry and there is no rain or runoff that could convey sediments to the tidal channels and require the implementation of the Storm Water Pollution Prevention Plan that incorporates Best Management Practices (BMPs). The proposed project would stabilize basin bottoms with pickleweed plants and erosion control mats after grading and prior to opening the berms for tidal exchange.

**Cultural Resources**
The project site is not located in any cultural resource sensitivity zone as identified by the Santa Barbara Airport Phase I Archeological Assessment dated 1993. The area of Goleta Slough containing Basins E/F has been subjected to repeated disturbance, including initial construction of the airfield and filling of the Slough by the Marine Corps in 1941 and again by the Airport during rerouting of Tecolotito Creek and extension of Runway 7/25 in 1970-1972, and the tidal experiment project and the relocation of Tecolotito Creek in 2006. A berm that separated Basins E and F was lowered in 1999 as part of a Slough restoration project associated with mitigation for the Airport’s Safety Area Grading project. In none of these instances were any cultural resources identified in the vicinity of Basin E/F.

Historically, extremely high runoff events have deposited several feet of fine sediment in the basins. The area historically was comprised of inundated tidelands and is not thought to have supported any human settlements. Over time, the periodic deposition of sediment has increased the bottom elevation of the basins by several feet. Based on the above, the Airport Department does not anticipate any cultural resources to be located at the proposed project site at depth of excavation.

**Hazardous Materials**
The proposed project site is not known to contain any hazardous materials or abandoned oil wells. Additionally the proposed project site is not listed on any list of hazardous waste sites maintained by the Secretary for Environmental Protection.

**Municipal Code**
The Goleta Slough Reserve (G-S-R) Zone is intended to protect, preserve, and maintain the environmentally sensitive habitat areas of Goleta Slough (SBMC §29.25.010). Restoration
activities consistent with Coastal Act Section 30233 are allowed in the G-S-R Zone with approval of a Coastal Development Permit.

The G-S-R Zone findings require the proposed project to incorporate enhancements to public educational and recreational opportunities at the Goleta Slough into the project design. The proposed project provides an expanded educational opportunity to demonstrate the feasibility of restoring tidal circulation to the Goleta Slough and the effects on Airport bird activity resulting from converting freshwater impoundments to tidal wetlands. In particular, the findings pertaining to bird activity have application to other Airports with similar situations. Access to visit the tidal area is granted to interested educational organizations at the discretion of the Airport Director consistent with the Access Procedures for the Goleta Slough provided in the Airport and Goleta Slough Local Coastal Program Phase III Implementation Package. These visits must be conducted in accordance with Transportation Security Administration (TSA) and Airport policies and regulations with respect to airport security, including the maximum number of attendees, tour routes and activities, security measures and transportation arrangements.

**Status of Other Agency Permits**

Applications will be filed for an Army Corps of Engineers (ACOE) Clean Water Act Section 404 permit, Regional Water Quality Control Board (RWQCB) Clean Water Act Section 401 Water Quality Certification and California Department of Fish and Game Section 1601 Streambed Alteration Agreement.

**Conclusion**

Completion of the Basin E/F Tidal Restoration Project is an important step toward the goal of eventual tidal restoration in portions of Goleta Slough. The proposed project represents the feasibility of tidal restoration projects near coastal airports to enhance the diversity of habitat types and protect the pilots and passengers.

If you have any questions regarding this application, please contact me at (805) 692-6020.

Sincerely,

Owen Thomas
Principal Engineer

cc: Victor Globa, Federal Aviation Administration (w/o attachments)

Attachments:
1. Coastal Development Permit application form
2. Master Application dated September 21, 2009
3. Nine sets of project plans
4. Project Description dated September 2009
5. Draft Biological Assessment dated September 2009
6. Coastal Development Permit for Tidal Restoration Experiment dated April 14, 2004
Coastal Development Permit Application

Note:

For additional submittal requirements, please obtain the following:

1. Master Application,
2. Development Application Review Team (DART) Submittal Packet,
3. Planning Commission & Staff Hearing Officer Submittal Cover Sheet, and
4. Noticing Submittal Packet

These and other forms are available on the City’s website at http://www.SantaBarbaraCA.gov/Resident/Home/Forms/

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City of Santa Barbara

COASTAL DEVELOPMENT PERMIT APPLICATION

This section is to be filled out by Planning Division Staff Only

MST#: 2009-00424 CDP#_______________


CONCURRENT APPLICATION(S): ABR/SFDB HLC PC/HO SHO PRT BP

APPLICATION REVIEWED BY: ___________________________ DATE: ____________

NOTE: A Coastal Development Permit does not preclude any other City approvals or permits which would normally be required. The applicant must submit, in addition to this form, a Master Application as well as any other materials normally required by other review bodies or departments within the City of Santa Barbara.

I. TYPE OF APPLICATION

☐ LCP Exclusion

☑ Coastal Development Permit:

1. Appealable
2. Non-Appealable
3. California Coastal Commission (State) Permit

II. PROJECT OWNER/APPLICANT AND LOCATION

Owner: Karen Randell, Santa Barbara Airport Director Phone No: 692-6002
Address: 601 Firestone Rd.
Santa Barbara, CA 93117
E-mail Address: KRandell@SantaBarbara CA.gov

Applicant: Owen Thomas, Principal Planner Phone No: 692-6018
Address: 601 Firestone Rd.
Santa Barbara, CA 93117
E-mail Address: OThomas@SantaBarbara CA.gov

Project Location: Goleta Slough - 500 Fowler Rd.
Parcel No(s.): 073-450-003
III. PROJECT INFORMATION:

THE FOLLOWING INFORMATION IS REQUIRED FOR A COASTAL DEVELOPMENT PERMIT APPLICATION TO BE CONSIDERED COMPLETE:

PLEASE NOTE:

*Where questions do not apply to your project, indicate "NOT APPLICABLE" or "N/A".

*Within thirty (30) days of receipt of an application, the Planning Division will inform the applicant in writing if the application is complete, or not, and what items must be submitted. Processing of the application will not begin until it is complete.

A. TYPE OF PROJECT:

✓ New

☐ Addition

☐ Remodel

☐ Repair

☐ Demolition

☐ Removal

☐ Grading

☐ Paving

☐ Fences/Walls

☐ Retaining Walls

☐ Change of Use

☐ Other

9.3 acres 7,05 Sq. Ft.


Amount

Height ___________ and Length ___________

Height ___________ and Length ___________

From _________________ To _________________

B. RESIDENTIAL: N/A

<table>
<thead>
<tr>
<th>LOT AREA</th>
<th>NO. OF BLDGS.</th>
<th>BLDG. SQ. FT.¹</th>
<th>DEMO'D BLDG. SQ.FT.</th>
<th>STORIES/BLDG. HEIGHT</th>
<th>UNITS</th>
<th>BEDROOMS PER UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXISTING</td>
<td></td>
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<td></td>
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<tr>
<td>PROPOSED</td>
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</tbody>
</table>

¹ Include the square footage of all buildings on the project site including accessory structures and garages.
C. NON-RESIDENTIAL: N/A

<table>
<thead>
<tr>
<th>LOT AREA</th>
<th>NO. OF BLDGS.</th>
<th>BLDG. SQ. FT.</th>
<th>DEMO'D BLDG. SQ.FT.</th>
<th>STORIES/BLDG HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXISTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROPOSED</td>
<td></td>
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</tbody>
</table>

D. DESCRIBE THE EXISTING CONDITION OF THE PROPERTY. INCLUDE NUMBER, SIZE, AND USE OF ANY EXISTING BUILDINGS, AND EXISTING NUMBER OF UNITS:

- Expanded basin and a 2.5 acre tidal demonstration basin. WWII-era berms divide the basins and are covered in upland plants.

E. DESCRIBE THE PROPOSED DEVELOPMENT. INCLUDE SQUARE FOOTAGE, INCIDENTAL IMPROVEMENTS SUCH AS SEPTIC TANKS, WATER WELLS, ROADS, DRIVEWAYS, ACCESSORY BUILDINGS, FENCES, GRADING, VEGETATION REMOVAL, ETC. ALSO, INCLUDE WHETHER ANY EXISTING BUILDING(S) WILL BE DEMOLISHED OR REMOVED:

- Construct a 1.05 acre tidal influenced basin connected to Secolaite Creek in two locations and draining the west airfield foretrot ditch, and basins to reduce standing water near the airfield and promote natural tidal flows.

F. NUMBER OF PARKING SPACES: N/A

<table>
<thead>
<tr>
<th>REQUIRED</th>
<th>EXISTING</th>
<th>PROPOSED</th>
<th>TOTAL</th>
</tr>
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<tbody>
<tr>
<td>COVERED</td>
<td></td>
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</tr>
<tr>
<td>UNCOVERED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BICYCLE PARKING</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
G. ADDITIONAL INFORMATION:

1. Has any application for development on this site been submitted previously to the City of Santa Barbara, California Coastal Zone Conservation Commission or Coastal Commission?
   □ YES □ NO
   If yes, state previous Application Number(s): MST2003-00705

2. Are utility extensions for the following needed to serve the project?
   Water □ YES □ NO
   Gas      □ YES □ NO
   Electric □ YES □ NO
   Sewer   □ YES □ NO
   Telephone □ YES □ NO

   Would any of these extensions be above ground? □ YES □ NO
   If yes, explain below:
   temporary connection for irrigation for first
   year's plantings.

3. If the development is between the first public road and the sea, is public access to the shoreline and along the coast currently available near the site?
   □ YES □ NO
   If yes, indicate the location of the nearby access, including the distance from the project site:

4. Will any aspect of the project (i.e. construction, grading, landscaping, vegetation removal, fences, interior remodel, window/door changes, etc.) occur within 50 feet of a coastal bluff or within the 75-year seacliff retreat line?
   □ YES □ NO
   If yes, explain below and include the distance from the edge of the coastal bluff:
Pursuant to the State of California Public Resources Code and the "Guidelines for Implementation of the California Environmental Quality Act of 1970," as amended to date, this Draft Mitigated Negative Declaration has been prepared for the following project:

PROJECT LOCATION: 500 James Fowler Road

PROJECT PROponent: Owen Thomas, City of Santa Barbara

PROJECT DESCRIPTION:
The Basin E/F Tidal Restoration Project would excavate 10.3 acres of Basin E/F of the Goleta Slough on Santa Barbara Airport Property to accommodate tidal flow. The project would also fill portions of Basin E/F to reduce freshwater ponding and provide more high marsh habitat. The upstream end of the berm separating Foxtrot Drainage from Basin E would be breached just south of the culvert outfall and a small portion of the drainage would be filled to divert storm waters into a new channel through Basin E. At the downstream end of the Foxtrot Drainage/Basin E berm a portion of the berm would be breached near the confluence of Foxtrot Drainage and Tecolotito Creek to create a connection between Basin E and the Creek. The middle section of the Foxtrot Drainage/Basin E berm would be lowered and blended into Basin E topography to accommodate tidal flow. The 24-inch culvert at the southern berm of Basin E and the 36-inch culvert and sluice gate at the southern end of Basin F would both be removed. Additionally, hydrological connectivity with Basin G would also be improved by clearing the 24-inch culvert and grading the northwestern corner of Basin G to facilitate flow and minimize ponding.

Connection of Basin E/F to the tidal flows of Tecolotito Creek and Foxtrot Drainage would require aquadams be placed in Tecolotito Creek upstream and downstream of the area of construction. Approximately 500 linear feet of Tecolotito Creek and 800 linear feet of Foxtrot Drainage are proposed to be dammed and dewatered to accommodate this connection.

Construction would occur in summer 2010 over the course of four months. The project would result in 24,885 cubic yards of cut and 2,203 cubic yards of fill. The project would involve the planting of approximately 12,000 plants and the dispersal of more than 40 lbs. of seeds.

FINAL MITIGATED NEGATIVE DECLARATION FINDING:
Based on the attached Initial Study prepared for the proposed project, it has been determined that with application of the identified mitigation measures agreed to by the applicant, the proposed project will not have a significant effect on the environment.

[Signature]
Environmental Analyst

[Date]
Exhibit D
This Initial Study has been completed for the project described below because the project is subject to review under the California Environmental Quality Act (CEQA) and was determined not to be exempt from the requirement for the preparation of an environmental document. The information, analysis and conclusions contained in this Initial Study are the basis for deciding whether a Negative Declaration (ND) is to be prepared or if preparation of an Environmental Impact Report (EIR) is required to further analyze impacts. Additionally, if preparation of an EIR is required, the Initial Study is used to focus the EIR on the effects determined to be potentially significant.

APPLICANT/ PROPERTY OWNER

Applicant: Owen Thomas, City of Santa Barbara
Property Owner: City of Santa Barbara

PROJECT ADDRESS/LOCATION (see Exhibit A-Vicinity Map)

Basin E/F is a 13-acre basin located in the Goleta Slough adjacent to Taxiway A at the Santa Barbara Airport (500 James Fowler Road). The Basin is bound on the west by a berm (previously created for Clyde Adams Road), on the south by Tecolotito Creek berm, on the east by “Foxtrot berm” and on the north by the Safety Area Grading Mitigation Site, a gravel surface road and Taxiway A.

PROJECT DESCRIPTION (see Exhibit B-Project Plans)

The City of Santa Barbara, Airport Department proposes to construct a 10.3 acre tidal restoration project in the Goleta Slough to serve as the final portion of mitigation for impacts associated with the Airfield Safety Projects (ASP). The primary purpose of the proposed project is to provide the needed 7.05 acres of wetland restoration area needed to complete the ASP Coastal Development Permit mitigation requirements. Approximately 30.03 acres of the required 37.08 acres of habitat have already been restored to date for the Airfield Safety Projects. The proposed project would also provide several ecological benefits to the Goleta Slough that are consistent with the Draft Goleta Slough Ecosystem Management Plan (1997) and the Wetland Restoration Plan (2003), improve storm water management from the airfield, and contribute to a reduction of bird strike hazards for aviation. Additionally the proposed project would provide needed habitat for the following special status species:

- **Belding’s savannah sparrow** (State Endangered): The proposed project would increase 6-7 foot elevation terrain to provide mid- to upper-littoral zones of coastal salt marsh which is known to be the ideal breeding habitat for this species.

- **Tidewater goby** (Federal Endangered, State Species of Concern): The proposed project would create brackish conditions during the rainy season by creating drainages that capture freshwater runoff from the airfield at two drain outfalls. The tidewater goby is generally found in upper-estuary brackish water habitat.

- **Wandering skipper** (Locally rare): Saltgrass and flowering plants are proposed to provide food sources for this species.

- **Pygmy blue butterfly** (locally rare): Native flowering plants are proposed to provide food sources for this species.

- Plantings and seed for rare or endangered native plants including, **southern tarplant, Coulter’s goldfields, and annual saltmarsh aster** would be installed.

The proposed project would excavate portions of Basin E/F of the Goleta Slough to accommodate tidal flow. The project would also fill portions of Basin E/F to reduce freshwater ponding and provide more high marsh habitat. The upstream end of the berm separating Foxtrot Drainage from Basin E would be breached just south of the culvert outfall and a small portion of the drainage would be filled to divert storm waters into a new channel through Basin E. At the downstream end of the Foxtrot Drainage/Basin E berm a portion of the berm would be breached near the confluence of Foxtrot Drainage...
and Tecolotito Creek to create a connection between Basin E and the creek. The middle section of the Foxtrot Drainage/Basin E berm would be lowered and blended into Basin E topography to accommodate tidal flow. The 24-inch culvert at the southern berm of Basin E and the 36-inch culvert and sluice gate at the southern end of Basin F would both be removed. Additionally, hydrological connectivity with Basin G would also be improved by clearing the 24-inch culvert and grading the northwestern corner of Basin G to facilitate flow and minimize ponding.

Connection of Basin E/F to the tidal flows of Tecolotito Creek and Foxtrot Drainage would require aquadams be placed temporarily in Tecolotito Creek upstream and downstream of the area of construction. Approximately 500 linear feet of Tecolotito Creek and 800 linear feet of Foxtrot Drainage are proposed to be temporarily dammed and dewatered for an eight week period to accommodate this connection. This dewatering would occur between August 1 and November 1, 2010 to avoid the rainy season.

Construction would occur in summer 2010 over the course of four months. Excavation and fill would occur over approximately 9 weeks during the construction phase and would result in 24,885 cubic yards of cut and 2,203 cubic yards of fill. The project would involve the planting of approximately 12,000 native plants of local stock and the dispersing of more than 40 lbs. of seeds. Following planting, the restoration area would be monitored for seven years in accordance with the Airfield Safety Projects Wetland Restoration Plan.

Site History: The Goleta Slough has existed as a seasonal wetland largely due to environmental impacts associated with development from the mid-19th to early 20th centuries. During the winter of 1861-1862 the Goleta Slough was inundated with sediment wash from overgrazed foothills and transformed from a shallow bay to a tidal wetland. Eighty years later, in 1941, the United States Army Corps of Engineers filled in vast portions of the Slough and erected berms in the Goleta Slough to create storm water basins and accommodate roads for the US Marine Corps Air Station, Santa Barbara. These berms closed off portions of the Goleta Slough from tidal influence and degradation of coastal wetland habitat.

Project Background: In 2003, the California Coastal Commission approved a Coastal Development Permit for the Airfield Safety Projects (ASP). The ASP included the relocation Runway 7-25 800 feet to the west, and the relocation of Tecolotito Creek to provide an overrun safety area at the end of the runway. The ASP involved the permanent removal of 9.27 acres of seasonal wetlands. The Airport Department has restored 30.03 acres of habitat as mitigation for this loss. However 7.05 acres remain to be mitigated to achieve the 4:1 mitigation ratio requirement in the Coastal Development Permit. The proposed project would complete the Coastal Development Permit mitigation requirement for the ASP.

A previous project, the Goleta Slough Tidal Restoration Demonstration Project was constructed in a 2-acre portion Basin E/F in 2006. The Demonstration Project was constructed as part of the ASP mitigation requirement to determine the feasibility of tidal restoration in close proximity to the airfield. After a 3-year study of the Demonstration Project the Airport Department concluded that tidal flows posed no hazard to aviation because XXX the Demonstration Project attracted fewer large flocking fowl than the existing impounded basins and provided habitat for shorebirds which are rarely found to incur on Santa Barbara Airport runways. The Airport Department is now proposing to complete its ASP mitigation requirement with the proposed project. The Demonstration Project served as a guide in the design of the proposed project.

Required Permit: The discretionary applications required for this project is the Goleta Slough Reserve Coastal Development Permit to allow the construction of a 9.3 acre tidal wetland basin in the Original Jurisdiction of the California Coastal Zone (SBMC§29.25,020); a Lake or Streambed Alteration Agreement from the California Department of Fish and Game; a Clean Water Act Section 401 certification from the Regional Water Quality Control Board, and a Nationwide Clean Water Act Section 404 permit from the United States Army Corps of Engineers.

ENVIRONMENTAL SETTING
Existing Site Characteristics

Topography: The bottom elevations of the basin range from 5.5 to 7 feet.

Seismic/Geologic Conditions: The closest faults to the project vicinity are the More Ranch Fault and the North Ellwood Fault. The routes of these faults are along the southern edge of Goleta Slough and the northern part of UC Santa Barbara main campus. Both faults are considered to be potentially active. This project is not located in the immediate vicinity of the above referenced faults.

Flooding/Fire Hazard: The project site is located in the floodway as defined by the Federal Emergency Management Agency’s (FEMA’s) Flood Insurance Rate Map (FIRM) for the Santa Barbara Airport.

Drainage: Storm water runoff drains via surface flow to the airfield storm drains. Storm water flows into the two existing drain inlets located on the airport infield between runways and taxiways.
**Biological Resources:** A variety of sensitive plant and wildlife species and their habitats occur in the Goleta Slough, and portions of Airport property. These species include ones designated as threatened or endangered by the state or federal government, or Species of Special Concern as designated by the California Department of Fish and Game, such as Belding’s savannah sparrow, the tidewater goby, brown pelican, light-footed clapper rail, and several sensitive plant species. The Goleta Slough is also considered potential habitat for the steelhead trout.

**Archaeological Resources:** The Master Archaeological Resources Assessment (2009) for the Airport identifies the project site as not being located in an archaeological resource sensitivity zone.

**Noise:** Noise affecting the project site is primarily from air traffic using Runway 7-25. The 2005 Santa Barbara Airport Federal Aviation Regulation Part 150 Noise Compatibility Study indicates that ambient noise levels on the project property are between 65-67 dBA Ldn.

**Hazards:** There are no known environmental hazards at the project site and adjacent areas.

**Existing Land Use**

**Existing Facilities and Uses:** The project site is currently a 2 acre tidal wetland and approximately 13 acres of seasonal wetland in a basin closed to tidal influence. The proposed project would restore tidal flows to 9.3 acres of the site. The site would remain wetland habitat and open space.

**Access and Parking:** Construction staging would occur on Adams Berm on site. Access to the proposed project site would be from the Goleta Slough Overlook Airfield Operations Area gate and thence via the south perimeter access road.
**PROPERTY CHARACTERISTICS**

**Site Information Summary**

<table>
<thead>
<tr>
<th>Assessor's Parcel Number</th>
<th>Parcel</th>
<th>Assessor's Parcel Number: 073-450-003</th>
<th>General Plan Designation</th>
<th>General Plan Designation: Recreational Open Space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zoning:</strong></td>
<td>G-S-R, S-D-3, Goleta Slough Reserve, Coastal Zone</td>
<td>Parcel Size: Entire Airport is 952 acres; Goleta Slough is 400 acres; restoration site is 13.5 acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existent Land Use:</td>
<td>Tidal and seasonal wetland</td>
<td>Proposed Land Use: Tidal wetland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slope:</td>
<td>Generally flat with 10-30% slopes along the berms</td>
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</tbody>
</table>

**SURROUNDING LAND USES:**

- **North:** Airfield
- **South:** University, Sanitary District
- **East:** Airfield
- **West:** Tecolotito Creek

**PLANS AND POLICY DISCUSSION**

**Land Use and Zoning Designations:** The entire project is located inside the City of Santa Barbara limits and is currently subject to City development policies and regulations. The project area is completely within the California Coastal Commission’s permanent jurisdiction of the Coastal Zone. Development of this area is guided by the existing State Coastal Act, the City General Plan, and Airport and Goleta Slough Local Coastal Program development policies and regulations.

The proposed project would require approval of a Coastal Development Permit (CDP) from the California Coastal Commission. Prior to filing an application with the Coastal Commission, the City of Santa Barbara Planning Commission would make a recommendation to the Coastal Commission on the proposed CDP. The project would also require a Streambed Alteration Agreement from the California Department of Fish and Game (CDFG), a Clean Water Act (CWA) Section 404 Permit from the U.S. Army Corps of Engineers, and a CWA Section 401 certification and National Pollution Discharge Elimination System (NPDES) Waste Discharge Requirement permit for dewatering operations from the Regional Water Quality Control Board (RWQCB).

The proposed project is consistent with the Airport and Goleta Slough Local Coastal Program (LCP), which requires implementation following the Goleta Slough Tidal Circulation Demonstration Project per Policy C-11. The project also is consistent with Coastal Act Section 30230, which states that marine resources shall be maintained, enhanced, and where feasible, restored. The project also is consistent with Sections 30233 and 30240 of the Coastal Act, which limit substantial alteration of wetlands and development in environmentally sensitive habitat areas to certain uses including restoration and improvement of fish and wildlife habitat.

The project also is consistent with the Draft Goleta Slough Ecological Management Plan (GSEMP).

**General Plan Policies:**

Land Use Element: The project site is located in the Goleta Slough Reserve, which is bounded on the north and east by the Santa Barbara Airport airfield; on the south by UC Santa Barbara; and on the west by Los Carneros Road. The primary function for the Goleta Slough is Open Space. The proposed project, consisting of wetland habitat restoration, is appropriate for open space areas.
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

A draft Mitigation Monitoring and Reporting Program has been prepared for the project in compliance with Public Resources Code §21081.6 (See Exhibit C – MMRP).

ENVIRONMENTAL CHECKLIST

The following checklist contains questions concerning potential changes to the environment that may result if this project is implemented. If no impact would occur, NO should be checked. If the project might result in an impact, check YES indicating the potential level of significance as follows:

Significant: Known substantial environmental impacts. Further review needed to determine if there are feasible mitigation measures and/or alternatives to reduce the impact.

Potentially Significant: Unknown, potentially significant impacts that need further review to determine significance level and whether mitigable.

Potentially Significant, Mitigable: Potentially significant impacts that can be avoided or reduced to less than significant levels with identified mitigation measures agreed-to by the applicant.

Less Than Significant: Impacts that are not substantial or significant.

<table>
<thead>
<tr>
<th>1. AESTHETICS</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Affect a public scenic vista or designated scenic highway or highway/roadway eligible for designation as a scenic highway?</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>b) Have a demonstrable negative aesthetic effect in that it is inconsistent with Architectural Board of Review or Historic Landmarks Guidelines or guidelines/criteria adopted as part of the Local Coastal Program?</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>c) Create light or glare?</td>
<td>✓</td>
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</table>

Visual Aesthetics - Discussion

Issues: Issues associated with visual aesthetics include the potential blockage of important public scenic views, project on-site visual aesthetics and compatibility with the surrounding area, and changes in exterior lighting.

Impact Evaluation Guidelines: Aesthetic quality, whether a project is visually pleasing or unpleasing, may be perceived and valued differently from one person to the next, and depends in part on the context of the environment in which a project is proposed. The significance of visual changes is assessed qualitatively based on consideration of the proposed physical change and project design within the context of the surrounding visual setting. First, the existing visual setting is reviewed to determine whether important existing visual aesthetics are involved, based on consideration of existing views, existing visual aesthetics on and around the site, and existing lighting conditions. Under CEQA, the evaluation of a project’s potential impacts to scenic views is focused on views from public (as opposed to private) viewpoints. The importance of existing views is assessed qualitatively based on whether important visual resources such as mountains, skyline trees, or the coastline, can be seen, the extent and scenic quality of the views, and whether the views are experienced from public viewpoints. The visual changes associated with the project are then assessed qualitatively to determine whether the project would result in substantial effects associated with important public scenic views, on-site visual aesthetics, and lighting.

Significant visual aesthetics impacts may potentially result from:

- Substantial obstruction or degradation of important public scenic views, including important views from scenic highways; extensive grading and/or removal of substantial amounts of vegetation and trees visible from public areas without adequate landscaping; or substantial loss of important public open space.
- Substantial negative aesthetic effect or incompatibility with surrounding land uses or structures due to project size, massing, scale, density, architecture, signage, or other design features.
• Substantial light and/or glare that poses a hazard or substantial annoyance to adjacent land uses and sensitive receptors.

Visual Aesthetics – Existing Conditions and Project Impacts

1.a-c) The project would involve approximately 24,885 cubic yards of grading to lower the elevation of the basin and allow tidal circulation. Basin E/F is not visible from public viewing places or scenic highways. The proposed project would be consistent with Architectural Board of Review (ABR) guidelines or Local Coastal Program (LCP) aesthetic criteria. No lighting would be associated with the project. No impact to aesthetic resources would result from the proposed project.

Visual Aesthetics – Mitigation

No mitigation required.

<table>
<thead>
<tr>
<th>2. AIR QUALITY</th>
<th>NO</th>
<th>YES</th>
</tr>
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<tbody>
<tr>
<td>Could the project:</td>
<td></td>
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<tr>
<td>a) Conflict with or obstruct implementation of the applicable air quality plan?</td>
<td></td>
<td></td>
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<tr>
<td>b) Exceed any City air quality emission threshold? Long-term</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Short-term</td>
<td>Potentially Significant, Mitigable</td>
<td></td>
</tr>
<tr>
<td>c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated in non-attainment under an applicable federal or state ambient air quality standard?</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>d) Expose sensitive receptors to substantial pollutants?</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>e) Create objectionable odors affecting a substantial number of people?</td>
<td>YES</td>
<td></td>
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Air Quality - Discussion

Issues. Air quality issues involve pollutant emissions from vehicle exhaust stationary sources (i.e. gas stations, boilers, diesel generators, dry cleaners, oil and gas processing facilities, etc), and minor stationary sources called “area sources” (i.e. residential heating and cooling, fireplaces, etc.) that contribute to smog, particulates and nuisance dust associated with grading and construction processes, and nuisance odors. Stationary sources of air emissions are of particular concern to sensitive receptors, as is construction dust and particulate matter. Sensitive receptors are defined as children, elderly, or ill people that can be more adversely affected by air quality emissions. Land uses typically associated with sensitive receptors include schools, parks, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and clinics.

Smog, or ozone, is formed in the atmosphere through a series of photochemical reactions involving interaction of oxides of nitrogen [NOx] and reactive organic compounds [ROC] (referred to as ozone precursors) with sunlight over a period of several hours. Primary sources of ozone precursors in the South Coast area are vehicle emissions. Sources of particulate matter (PM$_{10}$) include demolition, grading, road dust, agricultural tilling, mineral quarries, and vehicle exhaust (PM$_{2.5}$).

The City of Santa Barbara is part of the South Coast Air Basin. The City is subject to the National Ambient Air Quality Standards and the California Ambient Air Quality Standards (CAAQS), which are more stringent than the national standards. The CAAQS apply to six pollutants: photochemical ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter, and lead. The Santa Barbara County Air Pollution Control District (SBCAPCD) provides oversight on compliance with air quality standards and preparation of the County Clean Air Plan.

Santa Barbara County is considered in attainment of the federal eight-hour ozone standard, and in attainment of the state one-hour ozone standard. The County does not meet the state eight-hour ozone standard or the state standard for particulate matter less than ten microns in diameter (PM$_{10}$); but does meet the federal PM$_{10}$ standard. There is not yet enough data to determine the County’s attainment status for either the federal standard for particulate matter less than 2.5
microns in diameter (PM$_{2.5}$) or the state PM$_{2.5}$ standard, although the County would likely be in attainment for the federal 2.5 standard.

Global Climate Change (GCC) is a change in the average weather of the earth that can be measured by changes in wind patterns, storms, precipitation and temperature. Although there is not unanimous agreement regarding the occurrence, causes, or effects of GCC, there is a substantial body of evidence that climate change is occurring due the introduction of gases that trap heat in the atmosphere. Common greenhouse gases (GHG) include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, ozone and aerosols. Natural processes emit GHG that help to regulate the earth’s temperature; however, it is believed that substantial increases in emissions from human activities, such as electricity production and vehicle use, have substantially elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. While other greenhouse gases have higher global warming potential, carbon dioxide is emitted in such vastly higher quantities that it accounts for 85 percent of the global warming potential of all greenhouse gases emitted by the United States. Greenhouse gas emissions, therefore, are typically measured in terms of mass carbon dioxide equivalents, which is the product of the mass of a particular greenhouse gas and its specific global warming potential (CO2 has a global warming potential of 1).

California is a substantial contributor of GHG (2nd largest contributor in the U.S. and the 16th largest contributor in the world); with transportation and electricity generation representing the two largest contributing factors (41 and 22 percent, respectively). According to the US EPA greenhouse gas emissions in the U.S. amounted to 7,260 million metric tons of carbon dioxide equivalents in 2005. The California Energy Commission estimates that California emissions in 2004 were approximately 482 million metric tons of carbon dioxide equivalents.

Assembly Bill 32 created the California Global Warming Solutions Act of 2006 that requires the California Air Resources Board to adopt regulations to evaluate statewide greenhouse gas emissions, and then create a program and emission caps to limit statewide emissions to 1990 levels. The program is to be adopted by 2012 and implemented in a manner achieving emissions compliance by 2020. The California Air Resources Board has determined that for the purposes of implementing AB 32, that the 1990 level of greenhouse gas emissions in California was approximately 427 million metric tons of carbon dioxide equivalents. The air board also has estimated that without the implementation of additional greenhouse gas reduction strategies, the 2020 “business-as-usual” estimate for greenhouse gas emissions in California is 600 million metric tons of carbon dioxide equivalents. AB 32, therefore, creates an emission reduction goal for the state of 173 million metric tons of carbon dioxide equivalents by 2020. AB 32 does not directly amend CEQA or other environmental laws, but it does acknowledge that emissions of greenhouse gases cause significant adverse impacts to human health and the environment.

**Impact Evaluation Guidelines:** A project may create a significant air quality impact from the following:

- Exceeding an APCD pollutant threshold; inconsistency with District regulations; or exceeding population forecasts in the adopted County Clean Air Plan.
- Exposing sensitive receptors, such as children, the elderly or sick people to substantial pollutant exposure.
- Substantial unmitigated nuisance dust during earthwork or construction operations.
- Creation of nuisance odors inconsistent with APCD regulations.

**Long-Term (Operational) Impact Guidelines:** The City of Santa Barbara uses the SBCAPCD thresholds of significance for evaluating air quality impacts. The APCD has determined that a proposed project will not have a significant air quality impact on the environment if operation of the project will:

- Emit (from all project sources, both stationary and mobile) less than 240 pounds per day for ROC and NO$_x$, and 80 pounds per day for PM$_{10}$.
- Emit less than 25 pounds per day of ROC or NO$_x$ from motor vehicle trips only;
- Not cause a violation of any California or National Ambient Air Quality Standard (except ozone);
- Not exceed the APCD health risks public notification thresholds adopted by the APCD Board; and
- Be consistent with the adopted federal and state air quality plans for Santa Barbara.

**Short-Term (Construction) Impacts Guidelines:** Projects involving grading, paving, construction, and landscaping activities may cause localized nuisance dust impacts and increased particulate matter (PM$_{10}$). Substantial dust-related impacts may be potentially significant, but are generally considered mitigable with the application of standard dust control
mitigation measures. Standard dust mitigation measures are applied to projects with either significant or less than significant effects.

Exhaust from construction equipment also contributes to air pollution. Quantitative thresholds of significance are not currently in place for short-term or construction emissions. However, SBCAPCD uses combined emissions from all construction equipment that exceed 25 tons of any pollutant except carbon monoxide within a 12-month period as a guideline threshold for determining significance of construction emission impacts.

Cumulative Impacts and Consistency with Clean Air Plan: If the project-specific impact exceeds the ozone precursor significance threshold, it is also considered to have a considerable contribution to cumulative impacts. When a project is not accounted for in the most recent Clean Air Plan growth projections, then the project’s impact may also be considered to have a considerable contribution to cumulative air quality impacts. The Santa Barbara County Association of Governments and Air Resources Board on-road emissions forecasts are used as a basis for vehicle emission forecasting. If a project provides for increased population growth beyond that forecasted in the most recently adopted CAP, or if the project does not incorporate appropriate air quality mitigation and control measures, or is inconsistent with APCD rules and regulations, then the project may be found inconsistent with the CAP and may have a significant impact on air quality.

Global Climate Change: Recent State legislation and opinions by the California Attorney General have indicated that CEQA evaluations should include an assessment of a project’s potential to contribute to global climate change impacts. While methodologies for conducting such analysis are currently under consideration, no new CEQA significance thresholds or impact evaluation guidelines have been adopted at a state or local level for global climate change impacts.

Air Quality – Existing Conditions and Project Impacts

2.6a) Clean Air Plan

Direct and indirect emissions associated with the project are accounted for in the 2007 Clean Air Plan emissions growth assumptions. Appropriate air quality mitigation measures, including construction dust suppression, would be applied to the project, consistent with CAP and City policies. The operation of the project would not result in any new long term emissions. The project could be found consistent with the 2007 Clean Air Plan; therefore, impacts would be less than significant.

2.b) Air Emissions

Long-Term (Area Source & Operational) Emissions:
The proposed project would remain in a natural state in the long term and would have no users, residents, or customers to generate vehicle trips or produce any other emissions. Therefore, no impact related to long-term air quality would result from the proposed project.

Short-Term (Construction) Emissions:
Construction of the proposed project could result in emissions of pollutants due to grading, fumes, and vehicle exhaust. Utilizing the URBEMIS 9.2.4 computer model and SBAPCD emission factor data, it is estimated that the proposed project would generate the following construction emissions from all sources:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Proposed Construction Emissions (tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROC</td>
<td>0.55</td>
</tr>
<tr>
<td>NO\textsubscript{x}</td>
<td>4.57</td>
</tr>
<tr>
<td>CO</td>
<td>2.47</td>
</tr>
<tr>
<td>SO\textsubscript{2}</td>
<td>0.00</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>9.65</td>
</tr>
<tr>
<td>PM\textsubscript{2.5}</td>
<td>2.18</td>
</tr>
<tr>
<td><strong>Total Proposed Emissions (tons/year)</strong></td>
<td><strong>19.42</strong></td>
</tr>
</tbody>
</table>

The project would involve grading (24,885 cubic yards of cut) and landscaping activities which could cause localized dust related impacts resulting in increases in particulate matter (PM\textsubscript{10} and PM\textsubscript{2.5}). Utilizing the URBEMIS 9.2.4 computer model, it is estimated that the construction of the proposed project would result in 9.65 tons per year of PM\textsubscript{10} and 2.18 tons per year of PM\textsubscript{2.5}. Dust-related impacts are considered potentially significant, mitigable with the application of standard dust control mitigation measures outlined below in Mitigation Measure 1-87.
Diesel and gasoline powered construction equipment also emit particulate matter, NOx, and ROC. In order for emissions from construction equipment to be considered a significant environmental impact, combined emissions from all construction equipment would need to exceed 25 tons of any pollutant except carbon monoxide) within a 12-month period. As shown in the table above the combined emissions is 19.42 tons per year. Therefore, with the mitigations for dust control and compliance with APCD requirements for construction equipment engines, the proposed project is anticipated to have a less than significant effect on the environment. However, Mitigation Measures 9-18 8-17 below are recommended to further reduce any emissions from construction equipment.

Global Climate Change:
Sources of carbon dioxide emissions that could result from the project include project-related traffic, natural gas use, landscape maintenance, consumer product use, solid waste generations, site lighting, and potable water delivery. Short-term and long-term emissions of carbon dioxide that would result from the development of the project were estimated using the URBEMIS 9.2.4 computer program and SBAPCD emission factors as follows:

<table>
<thead>
<tr>
<th>Construction CO₂ Emissions (tons/year)</th>
<th>Proposed Operational CO₂ Emissions (lbs/day)</th>
<th>Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>428.78</td>
<td>0.00</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Short-term emission of carbon dioxide resulting from project-related construction activities were estimated to be approximately 428.78 tons per year. These emissions would be limited to the construction period and would be reduced through construction equipment emission control measures required as standard conditions of approval as shown under Mitigations Measures 8-17.

The California Energy Commission (CEC) estimates that California emissions in 2004 were approximately 492 Million Metric Tons of Carbon dioxide equivalent (MMTCO₂E). The project would not generate long-term emissions of carbon dioxide because it would not have human users or create any energy demand. Therefore the proposed project would not hinder the State’s attainment of greenhouse gas emission reductions under AB 32 (173 million metric tons of carbon dioxide equivalents by 2020). Additionally, the project would not exceed other air quality significance thresholds adopted by the APCD. The project would, therefore, not result in substantial greenhouse gas emissions or impede the ability of the State to attain greenhouse gas reduction goals and would be considered less than significant. The project’s construction would contribute a very small portion of the cumulative CO₂ emissions on a statewide basis.

Cumulative Impacts:
Global Climate Change (GCC) is a change in the average weather of the earth that can be measured by changes in wind patterns, storms, precipitation and temperature. GCC is generally thought to be caused by increased emission of greenhouse gases (GHG) because these gases trap heat in the atmosphere. Common GHG include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, ozone and aerosols. Natural processes and human activities emit GHG and help to regulate the earth’s temperature; however, it is believed that substantial emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. California is a substantial contributor of GHG (2nd largest contributor in the U.S. and the 16th largest contributor in the world) with transportation and electricity generation representing the two largest contributing factors (41 and 22 percent, respectively).

The carbon dioxide (CO₂) equivalent is a consistent methodology for comparing GHG emissions. Using the URBEMIS 9.2.4 computer model, CO₂ emissions are anticipated to be 2,349.48 pounds per day during the 12 week construction period.

As the project would not result in a long-term increase in vehicle trips, it would not contribute on a cumulative level to the generation of GHG emissions. Therefore the proposed project is not anticipated to significantly contribute to GHG Emissions. However, because no significance thresholds or regulatory guidance currently exists for the generation of GHG emissions, impact determination would be overly speculative. The City has adopted ordinances and guidelines in an effort to reduce the energy consumption of new construction. These measures require more sustainable, low impact (i.e. “green”) construction in an effort to reduce GHG emissions from new and some refurbished development. Also, the City is in the process of preparing revisions to its General Plan. During the analysis of the impacts of the new plan, additional guidance on how to deal with GHG emissions is anticipated.
2.c) Cumulative Emissions
Since project impacts do not exceed any adopted significance thresholds and the project is consistent with the Clean Air Plan, cumulative project emissions impacts would be less than significant.

2.d) Sensitive Receptors
Sensitive receptors are defined as children, elderly, or ill people who can be more adversely affected by air quality problems. Types of land uses typically associated with sensitive receptors include schools, parks, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and clinics. Stationary sources are of particular concern to sensitive receptors. The project area is not near any sensitive receptors, thus no impact from the project would result.

2.e) Odors
The project would not contain any features with the potential to emit odorous emissions from sources such as cooking equipment, combustion or evaporation of fuels, sewer systems, or solvents and surface coatings. Thus, no impacts from objectionable odors would result.

Air Quality – Recommended Mitigation

AQ-1 Construction Dust Control – Minimize Disturbed Area/Speed. Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.

AQ-2 Construction Dust Control - Watering. During site grading and transportation of fill materials, regular water sprinkling shall use reclaimed water whenever the Public Works Director determines that it is reasonably available. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust.
Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.

AQ-3 Construction Dust Control – Tarping. Trucks transporting fill material to and from the site shall be covered from the point of origin.

AQ-4 Construction Dust Control – Gravel Pads. Gravel pads shall be installed at all access points to prevent tracking of mud on to public roads.

AQ-5 Construction Dust Control – Stockpiling. If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

AQ-6 Construction Dust Control – Disturbed Area Treatment. After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:
   A. Seeding and watering until grass cover is grown;
   B. Spreading soil binders;
   C. Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind;
   D. Other methods approved in advance by the Air Pollution Control District.

AQ-7 Construction Dust Control – Paving. All roadways, driveways, sidewalks, etc., shall be paved as soon as possible. Additionally, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

AQ-87 Construction Dust Control – PEC. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when construction work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District upon request.
The following shall be adhered to during project grading and construction to reduce NOx and diesel PM emissions from construction equipment:

**AQ-98** Portable Construction Equipment. All portable diesel-powered construction equipment shall be registered with the state’s portable equipment registration program OR shall obtain an APCD permit.

**AQ-109** Fleet Owners. Fleet owners are subject to sections 2449, 2449.2, and 2449.3 in Title 13, Article 4.8, Chapter 9, of the California Code of regulations (CCR) to reduce diesel particulate matter (and criteria pollutant emissions from in-use off-road diesel-fueled vehicles. See [http://www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf](http://www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf).

**AQ-110** Engine Size. The engine size of construction equipment shall be the minimum practical size.

**AQ-111** Equipment Numbers. The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.

**AQ-112** Equipment maintenance. All construction equipment shall be maintained in tune per the manufacturer’s specifications.

**AQ-113** Catalytic Converters. Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

**AQ-114** Diesel Construction Equipment. Only heavy-duty diesel construction equipment meeting the California Air Resources Board (CARB) Tier ! emission standards for off-road heavy-duty diesel engines manufactured after 1996 (with federally mandated “clean” diesel engines) shall be used. Equipment meeting CARB Tier 2 or higher emission standards should be used to the maximum extent feasible.

**AQ-115** Engine Timing and Diesel Catalytic Converters. Other diesel construction equipment, which does not meet CARB standards, should be equipped with two to four degree engine timing retard or pre-combustion chamber engines. Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed, if available.

**AQ-116** Diesel Replacements. Diesel powered equipment shall be replaced by electric equipment whenever feasible.

**AQ-117** Idling Limitation. Idling of heavy-duty diesel trucks during loading and unloading shall be prohibited limited to five minutes; electric auxiliary power units shall be used whenever possible.
Air Quality - Residual Impacts

Implementation of Mitigation Measures AQ-1 through AQ-8 would reduce impacts related to dust generation during construction to a less than significant level. Diesel equipment emissions impacts would be reduced to a less than significant level by implementation of Mitigation Measures AQ-9 through AQ-18.

<table>
<thead>
<tr>
<th>3. BIOLOGICAL RESOURCES</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project result in impacts to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Endangered, threatened or rare species or their habitats (including but not limited to plants, fish, insects, animals, and birds)?</td>
<td></td>
<td>Potentially Significant, Mitigable</td>
</tr>
<tr>
<td>b) Locally designated historic, Landmark or specimen trees?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>c) Natural communities (e.g. oak woodland, coastal habitat, etc.).</td>
<td></td>
<td>Potentially Significant, Mitigable</td>
</tr>
<tr>
<td>d) Wetland habitat (e.g. marsh, riparian, and vernal pool)?</td>
<td></td>
<td>Potentially Significant, Mitigable</td>
</tr>
<tr>
<td>e) Wildlife dispersal or migration corridors?</td>
<td></td>
<td>Less than significant</td>
</tr>
</tbody>
</table>

Biological Resources - Discussion

**Issues:** Biological resources issues involve the potential for a project to substantially affect biologically-important natural vegetation and wildlife, particularly species that are protected as rare, threatened, or endangered by federal or state wildlife agencies and their habitat, native specimen trees, and designated landmark or historic trees.

**Impact Evaluation Guidelines:** Existing native wildlife and vegetation on a project site are qualitatively assessed to identify whether they constitute important biological resources, based on the types, amounts, and quality of the resources within the context of the larger ecological community. If important biological resources exist, project effects to the resources are qualitatively evaluated to determine whether the project would substantially affect these important biological resources. Significant biological resource impacts may potentially result from substantial disturbance to important wildlife and vegetation in the following ways:

- Elimination or substantial reduction or disruption of important natural vegetative communities and wildlife habitat or migration corridors, such as oak woodland, coastal strand, riparian, and wetlands.
- Substantial effect on protected plant or animal species listed or otherwise identified or protected as endangered, threatened or rare.
- Substantial loss or damage to important native specimen trees or designated landmark or historic trees.

**Biological Resources – Existing Conditions and Project Impacts**

3.a) Endangered, Threatened or Rare Species or Their Habitats

A variety of sensitive plant and wildlife species and their habitats occur in the Goleta Slough, and portions of Airport property. These species include ones designated as threatened or endangered by the state or federal government, or Species of Special Concern as designated by the California Department of Fish and Game. A description of sensitive species that could occur at and near Basins E/F and along Tecolotito Creek, is provided below based on biological investigations of Goleta Slough associated with the Environmental Impact Report/Statement for the Aviation Facilities Plan (2002), the 3-year Tidal Demonstration Study report (Exhibit D), and the Draft Biological Assessment for the Basin E/F Tidal Restoration Project (2009) (Exhibit E). Sensitive species include species designated as threatened or endangered by the state or federal government, or Species of Special Concern, as designated by the California Department of Fish and Game.

**Southern Steelhead**

The southern steelhead trout is designated an endangered species along the South Coast by the National Marine Fisheries Service (NMFS). There are recent incidental observations of steelhead in many South Coast streams such as Carpinteria, Montecito, and Mission creeks. There is documented evidence on Mission Creek of spawning. There have been anecdotal
sightings of steelhead on upper San Jose Creek, and confirmed sightings on Atascadero and Maria Ygnacio creeks in the past several years. The latter sightings indicate that steelhead can move into lower Goleta Slough. However, there have been no sightings or historic records of steelhead along Carneros, San Pedro, and Tecolotito creeks.

It would be possible for transitory, individual adult steelhead to attempt to migrate upstream in Tecolotito Creek, however, this occurrence would be considered very unlikely. There are numerous passage impediments upstream of Hollister Avenue. Suitable spawning habitat may be present in Glen Annie Creek; however, summer rearing habitat appears to be limited or absent. Based on this information, steelhead would not be expected to occur along Tecolotito Creek in or above Goleta Slough, as concluded in the Biological Assessment for the proposed project (Exhibit E) for NMFS. Therefore, the project would result in a less than significant impact on Southern Steelhead. Impacts can be further reduced with the implementation of required mitigation measure BIO-2, which restricts construction to the dry season outside of bird breeding season (July 15 to November 1), since this is the time when any possible migration of steelhead is least likely to occur.

**Tidewater Goby**

The tidewater goby is designated an endangered species by the US Fish and Wildlife Service (USFWS). It occurs in coastal brackish lagoons along the central and southern California coast. Since the presence of the tidewater goby in the Goleta Slough was first discovered in 2006, the Airport has monitored the community for USFWS. Since 2008, the Airport Department has completed six surveys for the tidewater goby in the Tidal Demonstration Project area and the tidewater goby has not been discovered in the area. The tidewater goby appears to prefer the Tecolotito and Carneros Creek sediment basins upstream from the proposed project site where the brackish water mix and shallow pools provide suitable habitat.

Construction to connect the proposed channels in Basin E/F with Tecolotito Creek and Foxtrot Drain would require temporarily dewatering approximately 500 linear feet of Tecolotito Creek between the proposed aquadams, 800 feet of Foxtrot Drainage, and 2.5 acres of the tidal demonstration basin. Although the tidewater goby is not known to exist in these locations, this disturbance of suitable habitat would be a potentially significant, mitigable impact. However with incorporation of Mitigation Measure BIO-1 which requires surveys and relocation procedures for tidewater goby, impacts would be reduced to a less than significant level.

Additionally, tidewater goby habitat may also be impacted by the change in the tidal prism of the larger Goleta Slough due to the increased retention of tidal waters within the proposed Basin E/F restoration site. The introduction of 9.3 acres of additional tidal wetland would cause tidal waters to flow slightly less upstream than under existing condition. According to the Draft Biological Assessment (Exhibit E) prepared for the USFWS, the proposed project is not likely to have a permanent negative effect on tidewater goby populations. Increased tidal influence in previously excluded portions of the Slough would increase habitat complexity and would create increased opportunities for refuge during storm events and increased surface area for other beneficial wetland processes. Therefore the proposed project would have a long term beneficial impact to tidewater goby populations.

**Belding’s Savannah Sparrow**

Belding’s Savannah Sparrow (*Passerculus sandwichensis beldingi*) is a subspecies of the widespread savannah sparrow that breeds in coastal salt marshes from northwestern Mexico to southern California, and as far north as Goleta. This subspecies was listed as endangered by the California Department of Fish and Game in 1974 and is a federal Species of Concern. However, the federal designation affords the species no protection under the federal Endangered Species Act.

The sparrow is a resident of pickleweed (*Salicornia*) marshes and utilizes pickleweed marsh for nesting, perching, and singing. The species typically nests in the upper littoral zone of tidal pickleweed marshes, where their nests are safe from the highest tides that occur during the nesting season. In Goleta Slough, where many of the basins are non-tidal, the birds establish nesting territories above the water line created by the freshwater impoundments resulting from precipitation.

The construction of the proposed project would convert approximately 5 acres of pickleweed marsh habitat in Basin E/F that is suitable for nesting (due to its high elevation) to mudflat or pickleweed marsh habitat that would be subject to tidal inundation and would not be suitable for nesting. This species commonly breeds in Basins A and B/C/D. Its numbers in Basin E/F have increased in recent years, but are still below what they were prior to the construction of the Tidal
Demonstration Project. This year-to-year variation is partially attributed to the varying amount of impounded freshwater in the basin resulting from rainfall. In years where rainfall amounts are greater, more freshwater is impounded, resulting in fewer available territories in the basin. Based on these results, the proposed project could displace several nesting territories and several more unpaired birds.

Given the varying amounts of impounded freshwater in the basins from year to year, the resident population of Belding’s savannah sparrow in Goleta Slough appears to be highly mobile and adaptable to changes in the amount of available nesting habitat. Thus, the species is anticipated to likely respond to the introduction of tidal inundation in Basin E/F by finding the suitable nesting habitat at created at higher elevations (6-7 foot elevation) within the proposed project or within other basins in the Slough, just as it would in years with high rainfall. In addition, the margins of the newly created pickleweed marsh in Basin E/F would provide high quality habitat for the species because freshwater would not become impounded, resulting in less variation in water levels and more predictable conditions for the sparrow. The resident population of Belding’s savannah sparrows appears to be very productive; hence, the short-term loss of 5.5 acres of nesting habitat would not adversely affect the stability and long-term reproductive success of the population. However, the displacement of potential nesting territories is nevertheless considered a potentially significant, mitigable impact.

This impact could be reduced to a less than significant level with the incorporation of mitigation measures BIO-2 and BIO-3. BIO-2 would require monitoring prior to, during, and after construction. Work shall be terminated if it is found that nesting pairs are being disturbed. Monitoring shall include noise measurements to be taken during construction activities and while bird activity is concurrently monitored by a qualified biologist to determine whether noise levels at the construction site are disruptive to Belding savannah sparrow.

Mitigation Measure BIO-3 would prohibit construction of the proposed project between November 1 and July 15 to avoid the rainy season and disruption of any active nesting territories during the breeding season of the Belding’s savannah sparrow.

**Brown Pelican**

The brown pelican is a state and federally designated endangered species. This resident species is often observed foraging and loafing along Lower Tecolotito Creek near Goleta Beach (i.e., the lagoon portion of the lower creek). These birds have not been observed in the center of Goleta Slough where Basin E/F is located. Therefore, no impact to the Brown Pelican would result from the project.

**Light-footed Clapper Rail**

The light-footed clapper rail is a federal endangered species which currently occurs in coastal salt marshes from Carpinteria to San Diego. It occurs in pickleweed or cordgrass dominated salt marsh habitats adjacent to tidal channels. This species historically occurred in Goleta Slough, but has not been observed in the Slough since 1972. Thus, no impact to the light-footed clapper rail would result from the project.

**Loggerhead Shrike**

*The loggerhead shrike (Lanius ludovicianus)* is a California species of concern which prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches, and requires impaling sites, such as thorns, sharp twigs, or barbed wire, for skewering and manipulating its prey. According to a summary report prepared by URS Corporation (Exhibit G) the loggerhead shrike was only encountered in the Goleta Slough between early July and late January. This corresponds with their migratory (non-breeding) season. While the Goleta Slough provides suitable habitat for breeding, it is outside of the current known breeding range of the loggerhead shrike. The displacement of potential nesting territories is nevertheless considered a potentially significant, mitigable impact.

This impact could be reduced to a less than significant level with the incorporation of mitigation measures BIO-2 and BIO-3. BIO-2 would require monitoring prior to, during, and after construction. Work shall be terminated if it is found that nesting pairs are being disturbed. Monitoring shall include noise measurements to be taken during construction activities and while bird activity is concurrently monitored by a qualified biologist to determine whether noise levels at the construction site are disruptive to loggerhead shrike.
Plant Species
Several sensitive plant species are known to occur in Goleta Slough and its environs, including southern tarplant (Hemizonia parryi ssp. australis) and Coutler’s goldfield (Lasthenia glabrata ssp. coultieri). Suitable habitat for these species is not present in Basins E/F, and there have not been any nearby sightings of these species, as described in the 2002 Environmental Impact Report/Statement for the Aviation Facilities Plan. Therefore, there would be no impact to sensitive plant species as a result of this project.

3.b) Locally Designated Historic, Landmark or Specimen Trees
There are no locally designated historic, landmark, or specimen trees in the project area. Therefore, there would be no impact to these resources.

3.c, e) Natural Communities and Wildlife Dispersion
The proposed project would result in the conversion of the following habitats: 1) non-tidal pickleweed marsh on the basin bottoms would be converted to a mosaic of tidal mudflat and tidal pickleweed marsh; 2) non-tidal mudflats/saltflats on the basin bottoms would be converted to a mosaic of tidal mudflat and tidal pickleweed marsh; 3) non-tidal pickleweed marsh on the basin bottoms would be disturbed to construct a temporary access road, but restored to similar pickleweed/alkali heath marsh habitat; 4) non-native weeds along the proposed access roads would be removed and replaced with native wetland herbs and shrubs. These changes would be consistent with the recommendations of the Draft Goleta Slough Ecological Management Plan to enhance and restore the diversity of habitats and resources within Goleta Slough and, specifically to restore tidal circulation and enhance tidal mud flats and high marsh habitats that are presently underrepresented in the Slough. Thus, these changes would result in a beneficial impact to natural communities in the Goleta Slough.

The Goleta Slough used by small mammals, fish, and some migratory birds. However, the proposed project, which consists of grading and restoring tidal connection within a basin that is presently isolated from tidal influence, would not result in impediments or impacts to wildlife dispersal or migration corridors.

Temporary Construction Impacts
The project construction would result in temporary disturbance of pickleweed marsh, quail bush scrub, coyote bush scrub in a temporary disturbance zone on the perimeter of the basins, at culvert locations, and at the ramp into Basin E/F. These disturbances are considered potentially significant, mitigable and can be reduced to a less than significant level with the implementation of BIO-4, which requires the Airport to restore the areas of temporary disturbance with seed of local genetic stock and local pickleweed cuttings.

Areas containing non-native weeds on Adams Berm at Basin E/F would be temporarily disturbed due to the establishment of access roads and construction entrances. This disturbance would be a less than significant impact. Implementation of mitigation measure BIO-4 would further reduce this impact, by requiring that these areas be seeded with low-lying native perennial plants from Goleta Slough to reduce erosion and prevent further colonization by weeds.

A temporary disturbance would also occur to native plants established in Basin E/F as part of the Safety Area Grading mitigation project. This is considered a potentially significant, mitigable impact and can be reduced to a less than significant level with the implementation of required mitigation measure BIO-4 which requires that these areas be seeded with the same native plants that occur in that area at present.

For each of these disturbances, the interim habitat conditions while new vegetation is being developed provides value to invertebrates and birds because such early successional habitats are scarce in the Goleta Slough.

3.d) Wetland Habitat
The purpose of the proposed project is to convert one type of wetland habitat (non-tidal) to another (tidal), thus there is no net loss or gain of wetlands as defined by either the U.S. Army Corps of Engineers or the California Coastal Commission. The habitat conversion from non-tidal to tidal habitat would increase the ecological function and value of these areas as tidal salt marsh areas, and, in general, provide for higher productivity and species diversity than non-tidal habitats with similar vegetation types. These changes would be consistent with the recommendations of the Draft Goleta Slough Ecological Management Plan to enhance and restore the diversity of habitats and resources within Goleta Slough and, specifically to restore tidal circulation and enhance tidal mud flats and high marsh habitats that are presently underrepresented in the Slough. Thus, these changes would result in a beneficial impact to natural communities in the Goleta Slough.
**Biological Resources – Mitigation**

**BIO-1:** Prior to construction and during all dewatering activities surveys shall be conducted by a biologist approved to handle tidewater gobies under a Section 10a(1a) Recovery Permit to determine the general abundance of tidewater gobies in tidal basin. Relocation of any tidewater gobies shall follow the procedures described in the USFWS Tidewater Goby Survey Protocol (2006). All native fish species shall be relocated from the Tidal Demonstration Basin and Foxtrot Drainage prior to any earthwork. The area of Tecolotito Creek and Foxtrot Drainage to be dewatered shall be minimized, not completely dewatered if practical, and kept moist in order to minimize mortality of aquatic species. Foot traffic in any channel bottom shall be limited to fish relocation and dewatering activities.

Post construction surveys for tidewater goby shall be implemented for 2 years following completion of the project. The surveys shall be conducted by a Section 10a(1a) Recovery Permit approved biologist to determine the general abundance of tidewater gobies in tidal basin. Survey methods shall follow those previously conducted by Ecorp Consulting to measure population densities in Tecolotito and Carneros Creeks. A total of four surveys shall be conducted including one pre-spawn survey in May/June and one post-spawn survey in August of each year.

All tidewater goby survey reports shall be submitted to the USFWS for acceptance.

**BIO-2:** The project site shall be monitored by a qualified biologist for Belding’s savannah sparrow and loggerhead shrike. Prior to site preparation and construction activities, the Airport shall have a qualified biologist survey all breeding/nesting habitat within the project site every seven days for eight consecutive weeks. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). Site preparation and construction activities will only begin if no breeding/nesting birds are observed and concurrence has been received from the CDFG. If breeding activities or an active nest is located in a work area, site preparation and construction activities shall not begin in that area until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area and the young will no longer be impacted by the project.

Once site preparation and construction activities have commenced, the project site shall be monitored for Belding’s savannah sparrow and loggerhead shrike on a weekly basis. Documentation of findings, including negative findings shall be submitted to the CDFG until construction is complete.

Site preparation or construction activities shall be suspended immediately in a given basin if the qualified biologist determines that breeding or nesting activity is occurring in that basin. Site preparation and construction activities shall not resume until the monitor determines that the breeding and nesting activities described above have stopped.

Noise levels will be monitored by a qualified biologist to determine if construction activities are disruptive to Belding’s savannah sparrow or loggerhead shrike in or adjacent to the project site. If a significant disruption to foraging behavior is observed, construction activities in the area of disturbance will be stopped immediately until the qualified biologist develops recommendations to reduce or eliminate the disturbances and receives concurrence from CDFG.

Use of the project site by Belding’s savannah sparrows or loggerhead shrike will be recorded during routine restoration monitoring, including evidence of breeding.

**BIO-3:** Construction shall be prohibited between November 1 and July 15 to avoid the rainy season, Belding’s savannah sparrow and loggerhead shrike breeding season and potential Steelhead migration.

**BIO-4:** Areas of temporary disturbance along the access routes shall be reseeded with native plants from local genetic stock. Weeding will be performed to ensure that restoration performance criteria are met. Weeding shall occur at least six times per year, or more frequently if necessary. Maintenance will be performed by hand, including techniques such as weed whacking and hand removal which has proven effective in other Airport restoration projects. Herbicides shall only be used if hand removal is not effective. Herbicides must be approved for use.
near water. Only targeted application will be permitted; no blanket spraying will be allowed. Application will be
supervised by a qualified biologist. Prior to application of herbicide, the maintenance crew must alert the Airport
in compliance with the City of Santa Barbara’s Integrated Pest Management Program. A project completion
report shall be prepared following the conclusion of construction activities.

Monitoring and reporting shall occur for a period of at least seven if the performance criteria are not met. If
performance criteria are not met by the end of year 7, then the choice of plants, site conditions, performance
criteria, and other factors would be reevaluated by a qualified biologist. A new restoration effort would be
implemented with a new monitoring period.

Performance criteria for the initial seeding effort would be as follows:
- All installed plants must achieve a 70% survival rate after one year following the construction completion,
  and an 80% survival rate of the remaining plants after two and three years.
- At the end of seven years, there must be a minimum of 75% total native plant cover.
- Non-native weeds must remain below 15% of total vegetative coverage at all times during the seven-year
  period. By the end of the seventh year, the restoration site shall not have more than 10% non-native cover.
  Non-native grasses and common naturalized species that are not aggressive such as brass buttons (Cotula
coronopifolia) are not included in this performance criteria.
- The project site must be without supplemental irrigation for a minimum of three years.
- Except for pickleweed, no species shall constitute more than 50% of the vegetative cover.
- No woody invasive species shall be present, and herbaceous invasive species shall not exceed 5% cover.

Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year
during the monitoring period. The Airport shall prepare annual revegetation status report on the condition of the
seeded areas during the monitoring period. An annual monitoring report shall be prepared detailing the condition
of the revegetation area in respect to the performance criteria. The annual report shall contain quantitative
analysis of achievement of performance criteria. The annual revegetation monitoring period shall span 12 months
following completion of revegetation of the project site. Annual reports shall be completed one month after the
end of the monitoring period and submitted to the permitting agencies.

BIO-5: A pre-construction survey shall be conducted during the blooming period for southern tarplant (July-August) and
Coulter’s goldfields (February-June) immediately prior to construction in all areas of the project site containing
habitat suitable to support southern tarplant and/or Coulter’s goldfields. Populations within or adjacent to the
project site that can be avoided will be clearly marked with identifying flagging to ensure projection of the
species.

If individuals or populations of southern tarplant and Coulter’s goldfields cannot be avoided, all seed available
from the plant to be removed would be salvaged and used in the restoration seed mix.

**Biological Resources - Residual Impacts**

Implementation of Mitigation Measure BIO-1 would reduce impacts related to the tidewater goby to a **less than significant** level. Implementation of Mitigation Measure BIO-2 and BIO-3 would reduce impacts related to the Belding savannah sparrow to a **less than significant** level. Implementation of Mitigation Measure BIO-3 would also reduce impacts related to wetland habitat to a **less than significant** level. Implementation of Mitigation Measure BIO-4 would reduce impacts related to natural communities to a **less than significant** level. And Implementation of Mitigation Measure BIO-5 would further reduce impacts to rare species of plants to a **less than significant** level.
## 4. CULTURAL RESOURCES

<table>
<thead>
<tr>
<th>Could the project:</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Disturb archaeological resources?</td>
<td></td>
<td>Less than significant</td>
</tr>
<tr>
<td>b) Affect a historic structure or site designated or eligible for designation as a National, State or City landmark?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>c) Have the potential to cause a physical change which would affect ethnic cultural values or restrict religious uses in the project area?</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

### Cultural Resources - Discussion

**Issues:** Archaeological resources are subsurface deposits dating from Prehistoric or Historical time periods. Native American culture appeared along the channel coast over 10,000 years ago, and numerous villages of the Barbareno Chumash flourished in coastal plains now encompassed by the City. Spanish explorers and eventual settlements in Santa Barbara occurred in the 1500’s through 1700’s. In the mid-1800's, the City began its transition from Mexican village to American city, and in the late 1800’s through early 1900’s experienced intensive urbanization. Historic resources are above-ground structures and sites from historical time periods with historic, architectural, or other cultural importance. The City’s built environment has a rich cultural heritage with a variety of architectural styles, including the Spanish Colonial Revival style emphasized in the rebuilding of Santa Barbara’s downtown following a destructive 1925 earthquake.

**Impact Evaluation Guidelines:** Archaeological and historical impacts are evaluated qualitatively by archeologists and historians. First, existing conditions on a site are assessed to identify whether important or unique archaeological or historical resources exist, based on criteria specified in the State CEQA Guidelines and City Master Environmental Assessment Guidelines for Archaeological Resources and Historical Structures and Sites, summarized as follows:

- Contains information needed to answer important scientific research questions and there exists a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with an important prehistoric or historic event or person.

If important archaeological or historic resources exist on the site, project changes are evaluated to determine whether they would substantially affect these important resources.

### Cultural Resources – Existing Conditions and Project Impacts

#### 4.a-c) Archaeological Resources

The project site is not located in any cultural resource sensitivity zone as identified by the Santa Barbara Airport Phase I Archeological Assessment dated 1993. The area of Goleta Slough containing Basins E/F has been subjected to repeated disturbance, including initial construction of the airfield and filling of the Slough by the Marine Corps in 1941, by the Airport during rerouting of Tecolotito Creek and extension of Runway 7/25 in 1970-1972, and again by the Airfield Safety Projects and the Goleta Slough Tidal Demonstration Project in 2006 which graded in Basin E/F and again rerouted Tecolotito and Carneros Creeks. A low berm that separated Basins E and F was removed in 1999 as part of a Slough restoration project associated with mitigation for the Airport’s Safety Area Grading project.

Further, extremely high runoff events, such as those that occurred in the El Nino years of 1995 and 1998, have deposited several feet of fine sediment in the basins. The area historically was comprised on inundated tidelands and is not thought to have supported any human settlements. Over time, the periodic deposition of sediment has increased the bottom elevation of the basins by several feet.

The proposed project would lower the bottom elevations of Basin E/F to about 4 feet elevation at the culvert feet. Since the project is not located in a cultural resource sensitivity zone, the sediments to be removed have been deposited since construction of the basins and the area has been subject to repeated disturbance since construction of the Airport and the basins, impacts to cultural resources would be **less than significant**.
The project site and entry area does not contain either a historic structure or site designated or eligible for designation as a National, State or City landmark nor does the site have ethnic cultural or religious significance. The project work is limited to habitat restoration and creation of construction entrances and therefore does not have the potential to affect a historic resource or site or cause a physical change that would affect ethnic cultural values or restrict religious uses in the project area. Thus, there would be no impact to historic, ethnic, or religious resources.

**Cultural Resources – Recommended Mitigation**

**CR-1: Unanticipated Archaeological Resources Contractor Notification.** Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts associated with past human occupation of the parcel. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and an archaeologist from the most current City Qualified Archaeologists List shall be retained by the applicant. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. A Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

**Cultural Resources – Residual Impacts**

Project specific impacts would be less than significant and further reduced by the recommended mitigation measure.

<table>
<thead>
<tr>
<th>5. GEOPHYSICAL CONDITIONS</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project result in or expose people to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Seismicity: fault rupture?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b) Seismicity: ground shaking or liquefaction?</td>
<td>✓</td>
<td>L</td>
</tr>
<tr>
<td>c) Seismicity: seiche or tsunami?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>d) Landslides or mudslides?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>e) Subsidence of the land?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>f) Expansive soils?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>g) Excessive grading or permanent changes in the topography?</td>
<td>✓</td>
<td>Less Than Significant</td>
</tr>
</tbody>
</table>

**Geophysical Conditions - Discussion**

**Issues:** Geophysical impacts involve geologic and soil conditions and their potential to create physical hazards affecting persons or property; or substantial changes to the physical condition of the site. Included are earthquake-related conditions such as fault rupture, groundshaking, liquefaction (a condition in which saturated soil looses shear strength during earthquake shaking); or seismic sea waves; unstable soil or slope conditions, such as landslides, subsidence, expansive or compressible/collapsible soils; or erosion; and extensive grading or topographic changes.

**Impact Evaluation Guidelines:** Potentially significant geophysical impacts may result from:

- Exposure to or creation of unstable earth conditions due to seismic conditions, such as earthquake faulting,
groundshaking, liquefaction, or seismic waves.

- Exposure to or creation of unstable earth conditions due to geologic or soil conditions, such as landslides, settlement, or expansive, collapsible/compressible, or expansive soils.
- Extensive grading on slopes exceeding 20%, substantial topographic change, destruction of unique physical features; substantial erosion of soils, overburden, or sedimentation of a water course.

**Geophysical Conditions – Existing Conditions and Project Impacts**

5.a-c) Seismic Hazards

The closest faults to the project vicinity are the More Ranch Fault and the North Ellwood Fault. The routes of these faults are along the southern edge of Goleta Slough and the northern part of UCSB’s main campus. Both faults are considered to be potentially active. This project is not located in the immediate vicinity of the above referenced faults, therefore no faulting is expected to occur on the project site. The area is not susceptible to seiche. The area is susceptible to tsunamis, however no habitable structures or areas where humans would congregate would be created.

The project area may be prone to ground shaking or liquefaction in the event of a major earthquake. However, the project does not involve construction of any habitable structures. Therefore, the Basin E/F Tidal Restoration Project would result in no impacts related to seismic activity.

5.d) Landslides or Mudslides

The entire site contains no steep slopes of sufficient height to result in landslides or mudslides, thus there is no potential for landslides or mudslides in the project area. The proposed project would take place within shallow basins and banks of Goleta Slough. Therefore the proposed project would present no impact to landslide and mudslide hazards.

5.e-f) Subsidence and Expansive Soils

The project would not result in land subsidence nor are the soils on the project site considered to be expansive. The project would involve excavation of deposited sediment from existing basins; therefore the project would have less than significant impacts with respect to subsidence and exposure to expansive soils.

5.g) Excessive Grading

Project grading would involve 24,885 cubic yards of cut and 2,203 cubic yards of fill in Basin E/F. The project would remove sediments deposited during major runoff events from manmade basins within Goleta Slough in order to reduce the grade sufficiently to allow tidal circulation within the basins. The overall grade of the area would not change substantially as a result of this project. Impacts from grading would be less than significant.

**Geophysical Conditions - Mitigation**

No mitigation required.

<table>
<thead>
<tr>
<th>6. HA ZARDS</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project involve:</td>
<td>Level of Significance</td>
<td></td>
</tr>
<tr>
<td>a) A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation)?</td>
<td>Less Than Significant</td>
<td></td>
</tr>
<tr>
<td>b) The creation of any health hazard or potential health hazards?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>c) Exposure of people to existing sources of potential health hazards?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>d) Increased fire hazard in areas with flammable brush, grass, or trees?</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Hazards - Discussion**

**Issues:** Hazardous materials issues involve the potential for public health or safety impacts from exposure of persons or the environment to hazardous materials or risk of accidents involving combustible or toxic substances.
**Impact Evaluation Guidelines:** Significant impacts may result from the following:

- Siting of incompatible projects in close proximity to existing sources of safety risk, such as pipelines, industrial processes, railroads, airports, etc.
- Exposure of project occupants or construction workers to unremediated soil or groundwater contamination.
- Exposure of persons or the environment to hazardous substances due to improper use, storage, or disposal of hazardous materials.
- Siting of development in a high fire hazard areas or beyond adequate emergency response time, with inadequate access or water pressure, or otherwise in a manner that creates a fire hazard

**Hazards – Existing Conditions and Project Impacts**

6.a-d) Public Health and Safety

Although areas of previous contamination have been identified on Santa Barbara Airport property, the project site and vicinity is not on the State list of contaminated sites and has no known history of site contamination or known existing site contamination. The project would not involve the use of any hazardous materials other than herbicides approved for use in aquatic environments consistent with all regulatory requirements, including AquaMaster, for initial weed removal and periodic vegetation maintenance. Any herbicides used would be from the approved list of herbicides consistent with the City of Santa Barbara Integrated Pest Management Program and would comply with all posting requirements. Therefore, hazard-related impacts would be **less than significant**.

**Hazards – Mitigation**

No mitigation required.

**Hazards – Recommended Mitigation**

HAZ-1: All construction work shall cease in the event of visual discovery of hazardous or unknown material or upon discovery of chemical odors. The Santa Barbara County Hazardous Materials Unit (HMU) shall be contacted and given access to the site. Resumption of work shall not take place until such work has been approved by the HMU.

**Hazards – Residual Impact**

Implementation of mitigation measure HAZ-1 would further reduce **less than significant** short-term construction related hazardous materials.

<table>
<thead>
<tr>
<th>7. NOISE</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project result in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Increases in existing noise levels?</td>
<td></td>
<td>Less Than Significant</td>
</tr>
<tr>
<td>b) Exposure of people to severe noise levels?</td>
<td></td>
<td>Less Than Significant</td>
</tr>
</tbody>
</table>

**Noise - Discussion**

**Issues:** Noise issues are associated with siting of a new noise-sensitive land use in an area subject to high ambient background noise levels, siting of a noise-generating land use next to existing noise-sensitive land uses, and/or short-term construction-related noise.

The primary source of ambient noise in the City is vehicle traffic noise. The City Master Environmental Assessment (MEA) **Noise Contour Map** identifies average ambient noise levels within the City.

Ambient noise levels are determined as averaged 24-hour weighted levels, using the Day-Night Noise Level ($L_{dn}$) or Community Noise Equivalence Level (CNEL) measurement scales. The $L_{dn}$ averages the varying sound levels occurring over the 24-hour day and gives a 10 decibel penalty to noises occurring between the hours of 10:00 p.m. and 7:00 a.m. to take into account the greater annoyance of intrusive noise levels during nighttime hours. Since $L_{dn}$ is a 24-hour average noise level, an area could have sporadic loud noise levels above 60 dB (A) which average out over the 24-hour period. CNEL is similar to $L_{dn}$ but includes a separate 5 dB (A) penalty for noise occurring between the hours of 7:00 p.m. and 10:00 p.m. CNEL and $L_{dn}$ values usually agree with one another within 1 dB (A). The **Equivalent Noise Level ($L_{eq}$)** is a
single noise level, which, if held constant during the measurement time period, would represent the same total energy as a fluctuating noise. $L_{eq}$ values are commonly expressed for periods of one hour, but longer or shorter time periods may be specified. In general, a change in noise level of less than three decibels is not audible. A doubling of the distance from a noise source will generally equate to a change in decibel level of six decibels.

Guidance for appropriate long-term background noise levels for various land uses are established in the City General Plan Noise Element Land Use Compatibility Guidelines. Building codes also establish maximum average ambient noise levels for the interiors of structures.

High construction noise levels occur with the use of heavy equipment such as scrapers, rollers, graders, trenchers and large trucks for demolition, grading, and construction. Equipment noise levels can vary substantially through a construction period, and depend on the type of equipment, number of pieces operating, and equipment maintenance. Construction equipment generates noise levels of more than 80 or 90 dB(A) at a distance of 50 feet, and the shorter impulsive noises from other construction equipment (such as pile drivers and drills) can be even higher, up to and exceeding 100 dB(A). Noise during construction is generally intermittent and sporadic, and after completion of the initial demolition, grading and site preparation activities, tends to be quieter.

The Noise Ordinance (Chapter 9.16 of the Santa Barbara Municipal Code) governs short-term or periodic noise, such as construction noise, operation of motorized equipment or amplified sound, or other sources of nuisance noise. The ordinance establishes limitations on hours of construction and motorized equipment operations, and provides criteria for defining nuisance noise in general.

**Impact Evaluation Guidelines:** A significant noise impact may result from:

- Siting of a project such that persons would be subject to long-term ambient noise levels in excess of Noise Element land use compatibility guidelines as follows:
  - **Office Buildings:** Normally acceptable maximum exterior ambient noise level of 75 dB (A); maximum interior noise level of 50 dB (A).
- Substantial noise from grading and construction activity in close proximity to noise-sensitive receptors for an extensive duration.

**Noise – Existing Conditions and Project Impacts**

7.a-b) **Increased Noise Level; Exposure to High Noise Levels**

**Long-Term Operational Noise:**

Operation of the proposed project would not result in any long-term changes in land use or involve any activities that would generate noise. The absence of human or vehicle activity in the area would result in no impact to existing noise levels.

**Temporary Construction Noise:**

Heavy construction equipment proposed for use on this project generate noise levels in the range of 80 to 85 dBA at a distance of 50 feet, while shorter more impulsive noises from other construction equipment can be higher, to over 100 dBA. Noise levels produced by construction equipment vary substantially depending on the type of equipment used and on their operation and maintenance.

Construction of the project, including earthmoving activities, may result in temporary increases in noise from construction equipment during the approximate 120-day construction period. However, these potential increases are temporary, and the project site is already subject to very high noise levels from nearby aircraft operations. Work hours during construction would be 7 AM – 4 PM, weekdays only. Additional restrictions on the hours of construction activity are not recommended for this project since there are no sensitive receptors in the vicinity of the project site. Given the short-term and intermittent nature of construction activities and limitation of construction hours, nuisance noise impacts from construction activities are considered less than significant. To further minimize short-term construction noise impacts, requirements for equipment mufflers and maintenance are recommended in the NOI-1 identified below.

**Noise – Recommended Mitigation**

NOI-1: All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers’ muffler and silencing devices.
Noise – Residual Impact
Implementation of mitigation measure NOI-1 would further reduce less than significant short-term construction related noise impacts.

<table>
<thead>
<tr>
<th>8. POPULATION AND HOUSING</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b) Displace existing housing, especially affordable housing?</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Population and Housing - Discussion

Impact Evaluation Guidelines: Issues of potentially significant population and housing impacts may involve:

- Growth inducement, such as provision of substantial population or employment growth or creation of substantial housing demand; development in an undeveloped area, or extension/ expansion of major infrastructure that could support additional future growth.
- Loss of a substantial number of housing units, especially loss of more affordable housing.

Population and Housing – Existing Conditions and Project Impacts

8.a, b) Population and Housing Impacts

The project is limited to grading and restoration activities. The project would not involve the extension of major infrastructure. No loss of dwellings or creation of new dwelling units would occur, and no increase in population would result from the project. The project would have no impact to population and available housing.

Population and Housing - Mitigation

No mitigation is required.

<table>
<thead>
<tr>
<th>9. PUBLIC SERVICES</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project have an effect upon, or result in a need for new or altered services in any of the following areas:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Fire protection?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b) Police protection?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>c) Schools?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>d) Maintenance of public facilities, including roads?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>e) Other governmental services?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>f) Electrical power or natural gas?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>g) Water treatment or distribution facilities?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>h) Sewer or septic tanks?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>i) Water distribution/demand?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>j) Solid waste disposal?</td>
<td></td>
<td>Less Than Significant</td>
</tr>
</tbody>
</table>

Public Services - Discussion

Issues: This section evaluates project effects on fire and police protection services, schools, road maintenance and other governmental services, utilities, including electric and natural gas, water and sewer service, and solid waste disposal.
**Impact Evaluation Guidelines:** The following may be identified as significant public services and facilities impacts:

- Creation of a substantial need for increased police department, fire department, road maintenance, or government services staff or equipment.
- Generation of substantial numbers of students exceeding public school capacity where schools have been designated as overcrowded.
- Inadequate water, sewage disposal, or utility facilities.
- Substantial increase in solid waste disposal to area sanitary landfills.

**Public Services – Existing Conditions and Project Impacts**

**9a-i. Facilities and Services**

The project is limited to grading and restoration activities and therefore would have **no impact** on fire and police protection, schools, maintenance of public facilities or other government services. The project would require periodic maintenance to clear clogged culverts, which would be completed by Airport maintenance personnel under a certified 1601 Streambed Alteration Agreement by the California Department of Fish and Game.

**9.j) Solid Waste**

Disposal of fill material from grading activities would be determined by the contractor at the initiation of construction. The material would either be transported to another construction site to be used as clean fill material or provided to the Tajiguas Landfill to be used as clean cover fill. Impacts to solid waste would be **less than significant**. Mitigation is recommended below to minimize construction-related solid waste through source reduction, reuse, and recycling.

**Public Services – Recommended Mitigation**

PF-1: Recycling and/or reuse of construction and green waste materials shall be implemented and containers shall be provided on site for that purpose during the construction period.

**Public Services – Residual Impact**

Impacts to solid waste disposal would be less than significant. Recommended mitigation measure PF-1 would minimize any short-term construction solid waste generation.

<table>
<thead>
<tr>
<th>10. RECREATION</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project:</td>
<td></td>
<td>Level of Significance</td>
</tr>
<tr>
<td>a) Increase the demand for neighborhood or regional parks or other recreational facilities?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b) Affect existing parks or other public recreational facilities?</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Recreation - Discussion**

**Issues:** Recreational issues are associated with increased demand for recreational facilities, or loss or impacts to existing recreational facilities.

**Impact Evaluation Guidelines:** Recreation impacts may be significant if they result in:

- Substantial increase in demand for park and recreation facilities in an area under-served by existing public park and recreation facilities.
- Substantial loss or interference with existing park space or other public recreational facilities such as hiking, cycling, or horse trails.

**Recreation – Existing Conditions and Project Impacts**

**10.a-b) Recreational Demand and Existing Facilities**

The proposed project would not increase demand for parks or recreational facilities. The tidal basin is not located in the vicinity of existing recreational facilities and is located in a restricted portion of the airfield that cannot be used for recreational purposes. **No impacts** to recreation would result from the project.
Recreation - Mitigation

No mitigation required.

<table>
<thead>
<tr>
<th>11. TRANSPORTATION/CIRCULATION</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could the project result in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Increased vehicle trips?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Long-Term</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-Term</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Hazards to safety from design features (e.g. sharp curves, inadequate sight distance or dangerous intersections)?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>c) Inadequate emergency access or access to nearby uses?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>d) Insufficient parking capacity on-site or off-site?</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>e) Hazards or barriers for pedestrians or bicyclists?</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Transportation - Discussion

Issues: Transportation issues include traffic, access, circulation, safety, and parking. Vehicle, bicycle and pedestrian, and transit modes of transportation are all considered, as well as emergency vehicle access. The City General Plan Circulation Element contains policies addressing circulation, traffic, and parking in the City.

Impact Evaluation Guidelines: A proposed project may have a significant impact on traffic/ circulation/ parking if it would:

Vehicle Traffic
- Cause an increase in traffic that is substantial in relation to the existing traffic load and street system capacity (see traffic thresholds below).
- Cause insufficiency in transit system.
- Conflict with the Congestion Management Plan (CMP) or Circulation Element or other adopted plan or policy pertaining to vehicle or transit systems.

Circulation and Traffic Safety
- Create potential hazards due to addition of traffic to a roadway that has design features (e.g., narrow width, roadside ditches, sharp curves, poor sight distance, inadequate pavement structure) or that supports uses that would be incompatible with substantial increases in traffic.
- Diminish or reduce safe pedestrian and/or bicycle circulation.
- Result in inadequate emergency access on-site or to nearby uses.

Parking
- Result in insufficient parking capacity for the projected amount of automobiles and bicycles.

Traffic Thresholds of Significance: The City uses Levels of Service (LOS) “A” through “F” to describe operating conditions at signalized intersections in terms of volume-to-capacity (V/C) ratios, with LOS A (0.50-0.60 V/C) representing free flowing conditions and LOS F (0.90+ V/C) describing conditions of substantial delay. The City General Plan Circulation Element establishes the goal for City intersections to not exceed LOS C (0.70-0.80 V/C).

For purposes of environmental assessment, LOS C at 0.77 V/C is the threshold Level of Service against which impacts are measured. An intersection is considered “impacted” if the volume to capacity ratio is .77 V/C or greater.

Project-Specific Significant Impact: A project-specific significant impact results when:

(a) Project peak-hour traffic would cause a signalized intersection to exceed 0.77 V/C, or
(b) The V/C of an intersection already exceeding 0.77 V/C would be increased by 0.01 (1%) or more as a result of project peak-hour traffic.
For non-signalized intersections, delay-time methodology is utilized in evaluating impacts.

**Significant Cumulative Contribution**: A project would result in a significant contribution to cumulative traffic impacts when:

(a) Project peak-hour traffic together with other cumulative traffic from existing and reasonably foreseeable pending projects would cause an intersection to exceed 0.77 V/C, or

(b) Project would contribute traffic to an intersection already exceeding 0.77 V/C.

**Transportation/Circulation – Existing Conditions and Project Impacts**

11.a-e) **Short-Term Traffic**

Construction work would occur during the period of July 15, 2010 to November 1, 2010 when the soils are dry at the basins, runoff in Tecolotito Creek is generally absent, and bird breeding is absent. Access to Basin E/F would be via the Airport access road that parallels Runway 7-25 from the Goleta Slough Overlook. The staging area for Basin E/F would be located near the bunker west of the basin.

Work hours would be 7 AM – 4 PM, weekdays only. Typical equipment at the project sites would include an excavator or grade-all, backhoe, loader, and 10-cubic yard haul trucks. The typical daily work crew at a basin would be 3 to 5 workers. The average daily worker traffic to and from the basins (one way) would be about 10 trips per day. The estimated peak number of truck trips during hauling events would be 30 trucks per day. Since this project would result in a limited number of truck trips over a short period of time, impacts to traffic and circulation would be **less than significant**. Mitigation Measures TC-1 through TC-4 are included to further reduce less than significant short-term impacts associated with construction activities.

The project would not create any long-term traffic demand or introduce any changes or limitations for emergency traffic, non-motorized traffic, or parking capacity.

**Transportation/Circulation – Recommended Mitigation**

TC-1: Construction-related truck trips shall not be scheduled during peak hours (7:30 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) to help reduce truck traffic on adjacent streets and roadways.

TC-2: The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods, subject to approval by the Transportation Manager.

TC-3: The haul route(s) for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Manager.

TC-4: The location of construction parking and storage shall be provided in locations subject to the approval of the Transportation Manager. During construction, free parking spaces for construction workers shall be provided.

**Transportation/Circulation – Residual Impact**

Project impacts to transportation or circulation would be **less than significant**. The recommended mitigation measures would further reduce temporary construction-related disruptions to circulation.
12. WATER ENVIRONMENT

Could the project result in:

<table>
<thead>
<tr>
<th>a) Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?</th>
<th>NO</th>
<th>YES</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Exposure of people or property to water related hazards such as flooding?</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Discharge into surface waters?</td>
<td></td>
<td>Potentially Significant, Mitigable</td>
<td></td>
</tr>
<tr>
<td>d) Change in the quantity, quality, direction or rate of flow of ground waters?</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Increased storm water drainage?</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Water – Discussion

Issues: Water resources issues include changes in offsite drainage and infiltration/groundwater recharge; storm water runoff and flooding; and water quality.

Impact Evaluation Guidelines: A significant impact would result from:

Water Resources and Drainage

- Substantially changing the amount of surface water in any water body or the quantity of groundwater recharge.
- Substantially changing the drainage pattern or creating a substantially increased amount or rate of surface water runoff that would exceed the capacity of existing or planned drainage and storm water systems.

Flooding

- Locating development within 100-year flood hazard areas; substantially altering the course or flow of flood waters or otherwise exposing people or property to substantial flood hazard.

Water Quality

- Substantial discharge of sediment or pollutants into surface water or groundwater, or otherwise degrading water quality, including temperature, dissolved oxygen, or turbidity.

Water Resources – Existing Conditions and Project Impacts

12.a) Absorption, Drainage, and Run-off

The proposed project would result in an increase in tidal circulation to Basin E/F. The proposed project would change the drainage of basin E/F by lowering the elevation of the basin through excavation. This would ensure that tidal waters that enter the basins could drain daily. As the basins would be lowered in elevation, the capacity to accept tidal flows and flooding would be increased. The increase in tidal circulation would be beneficial to water quality, as the tidal flows would be exposed to more mudflat habitat during the tidal cycle, which is considered a beneficial impact to surface water quality because of exposure to filter feeding invertebrates. The project would not result in greater surface run-off, since no impervious surfaces would be created. Construction of a stabilized construction entrances would not alter drainage and would be designed to prevent runoff from leaving the site. Therefore, the proposed project would have a less than significant effect on drainage patterns and the rate and amount of surface run-off.

12.b) Flooding

The proposed project is in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM)-defined floodway. As the basin would be excavated, the cross sectional capacity of the area would be increased. Therefore, the project would have a beneficial impact on flood capacity. In addition, the Goleta Slough is the end point of the Goleta Slough Watershed before it empties into the Pacific Ocean. The proposed project would not occur during the rainy season and the project would not construct any habitable structures. Thus, no flooding impacts to people or property would occur.
12.c) Surface Water Discharge

The project would result in a substantial long-term beneficial effect on creek water quality, since there would be an increase in tidal circulation in the Goleta Slough. In the short-term, project construction would involve earthwork, and restoration of habitat with landscaping improvements. Construction of the proposed tidal basin would involve substantial earthwork to lower the basins. Hence, there is a potential for disturbed soils to be discharged to Tecolotito Creek as the result of direct dumping, accidental spills, and/or post-grading erosion during the winter. Increased sedimentation from construction in the tidal channels of Goleta Slough could adversely affect aquatic invertebrates, insects, and fish. While the project is not expected to cause a significant increase in sediments entering the Slough, the project could result in a potentially significant, mitigable impact due to increased sedimentation and/or erosion during or following construction activities. This impact could reduced to a less than significant level with the incorporation of required mitigation measures: BIO-3, which requires that earthwork be conducted between July 15 and November 1 when soils are dry and there is no rain or runoff that could convey sediments to the tidal channels; WE-1, which requires the implementation of the Storm Water Pollution Prevention Plan that incorporates Best Management Practices (BMPs); and BIO-4, which requires that the basin bottoms be stabilized with pickleweed plants and erosion control mats after grading and prior to opening the culverts for tidal exchange.

Further, use of construction equipment could result in contamination of the creek water quality or native vegetation in the event of an inadvertent oil spillage or leakage during construction equipment use, refueling, maintenance or washing over the four-month construction process. This is a potentially significant, mitigable impact that could be reduced to a less than significant level with the incorporation of WE-1, which requires the implementation of a Storm Water Pollution Prevention Plan that incorporates BMPs to prevent the likelihood of such an occurrence. Further, any herbicide use will be consistent with the City of Santa Barbara Integrated Pest Management Program, which would further reduce any impacts.

Installation of the culverts in the berms of Basin E/F would require use of construction equipment within the banks of Tecolotito Creek, which may create a potentially significant, mitigable impact to water quality due to disturbance of the creek and banks. This impact would be reduced to less than significant with the incorporation of required mitigation measure WE-1, which requires that temporary cofferdams be installed in the Creek to isolate the tidal channel near the construction site and allow the earthwork to proceed without contact with water. Also, mitigation measure WE-1 further reduces this impact by requiring that the outer banks be stabilized once the culverts have been installed with an erosion control mat and pickleweed plants to minimize erosion.

12.d) Groundwater Quality

Since the project would only increase the area for tidal circulation, it would not generate any additional drainage or make any subsurface changes that could lead to changes in ground water quality, quantity, or rate of flow. It would therefore have no impact on ground water quality.

12.d) Storm Water Drainage

The proposed project would marginally enhance storm water drainage because the tidal water flowing in Tecolotito Creek would have a new outlet into Basins E/F and thence to Basin G, thus increasing its capacity. These outlets would decrease the tidal flows in Tecolotito Creek marginally, which would have a beneficial impact on drainage during certain conditions such as the combination of high tide and storm conditions. In addition, implementation of required Water Quality Management Plan, would further protect water quality.

Water Resources – Required Mitigation

WE-1: A Storm Water Pollution Prevention Plan (SWPPP) utilizing Best Management Practices (BMPs) shall be used for grading and construction activities and approved by the Building Division to maintain all sediment on site and out of the drainage system. The plan shall include, at a minimum:

1. Fill material to be imported to the site shall consist of the following: coconut fiber mats (mesh type) that are biodegradable and will not introduce any contaminants; and native plant seeds and vegetative matter.

2. The following BMPs for effective temporary and final soil stabilization and to reduce sediment discharges from the site during and after construction shall be implemented: (a) construction shall occur during dry season when there is no rainfall per Mitigation Measure BIO-3; (b) no soils shall be stockpiled near the basin where runoff could enter the creek; (c) the culvert trenches shall be backfilled with low permeability materials to
reduce piping and seepage which could destabilize the slopes of the berms; (d) a cofferdam shall be utilized
during culvert installation to ensure that the exposed slopes of the berms will not be eroded; (e) to the extent
practicable, the areas of disturbance shall be minimized; (f) no grading shall occur outside designated limits on
the final engineering drawings; (g) temporary sediment control materials shall be maintained on-site
throughout the duration of construction to allow implementation of temporary sediment controls in the event of
an unpredicted rain, and for rapid response to failures or emergencies; (h) silt fences shall be deployed along
the limits of grading to contain loose soils and filter storm water runoff, if necessary; (i) post-construction
erosion on the basin slopes shall be managed by the use of erosion control blankets (i.e., coconut fiber mesh),
as well as proposed pickleweed cuttings and native plants and seeding in the basins and along the berms, (j) the
outer slope of the berms shall be stabilized with erosion control mats and vegetation after installing the
culverts; and (k) polyethylene covers shall be used to cover exposed stockpiled materials prior to forecast
storm events, and anchored to prevent damage by wind.

3. To reduce sediment tracking from the construction site onto private or public roads, a stabilized construction
entrance/exit shall be constructed and maintained at construction site entrances and exits to reduce tracking of
sediment as a result of construction traffic. The entrance shall be designed to prevent runoff from leaving the
site. Stabilization material shall be 3 to 6-inch aggregate. The entrance shall be flared where it meets the
existing road to provide an adequate turning radius.

4. To prevent non-storm water discharges: (a) construction vehicle cleaning and maintenance shall not be
performed on-site or in the Slough; (b) all construction vehicles shall be fueled off-site and outside of the
Slough in a temporary fueling area designated by the Airport on a level, graded area that is at least 100 feet
from all wetlands; (c) watertight shipping containers shall be used to store hand tools, small parts, and most
construction materials that can be carried by hand, such as paint cans, solvents and grease; (d) spill clean-up
materials, material safety data sheets, a material inventory, and emergency contact numbers shall be
maintained and stored in a container; (e) solid wastes shall be loaded directly into trucks for off-site disposal;
when on-site storage is necessary, solid wastes shall be stored in watertight dumpsters in the general storage
area of the contractors yard; (f) when contaminated soils are encountered, the Airport shall be notified, the
contaminated soils shall be contained, covered if stockpiled, and disposed of properly in accordance with all
applicable regulations; and (g) portable toilets shall be located and maintained in the staging areas for the
duration of the project.

5. The contractor shall inspect the adequacy of BMPs on the site prior to a forecast storm, after a rain event that
causes runoff from the construction site, at 24-hour intervals during extended rain events, weekly during the
rainy season, and every two weeks during the non-rainy season. The results of all inspections and assessments
will be documented, a copy will be provided to the Airport Engineer within 24 hours of the inspection. Copies
of the completed inspection checklists will be maintained with the SWPPP. A tracking or follow-up procedure
shall follow any inspection that identifies deficiencies in BMPs.

6. If a discharge occurs or if the project receives a written notice or order from any regulatory agency, the
Contractor shall immediately notify the Airport Engineer, and will file a written report to the Airport Engineer
within 2 days of the discharge event, notice, or order. Corrective measures shall be implemented immediately
following the discharge, notice or order. All discharges shall be documented. Discharges requiring reporting
include: non-storm water, except conditionally exempted discharges, discharged to the slough without
treatment by an approved BMP described in the SWPPP; storm water discharged to the slough where the
BMPs have been overwhelmed or not properly maintained or installed; storm water runoff containing
hazardous substances from spills discharged to the Slough; and where water quality sample results indicate
elevated levels of non-visible pollutants.

7. The proposed basins shall be drained at or near the same locations of existing outlets.

8. The proposed basin shall be designed to drain freely to Goleta Slough, conveying both diurnal tidal waters and
runoff from precipitation. No sediments or pollutants shall be discharged during construction, and post-
construction sediment discharge shall be minimized by revegetating graded areas.
9. The proposed culverts and slide gates shall be designed to allow the free passage of tidal waters into and out of the basins without any scouring effects. The SWPPP shall contain various BMPs to reduce construction and post-construction erosion and to stabilize all affected slopes.

10. The Airport shall routinely monitor and repair the proposed culverts and slide gates, areas of revegetation, and areas that have been graded. The Airport shall restore and stabilize any areas that become eroded or damaged from precipitation or runoff.

11. Under the proposed SWPPP, the Airport shall conduct visual monitoring of receiving waters during and after construction to ensure that no discharge of pollutants or sediments occurs which could cause water quality exceedances. If it is determined that water quality standards are exceeded, the Airport shall conduct monitoring until it is determined that water quality standards are no longer being exceeded. An assessment of the potential sources of the excessive pollutant loadings will be conducted and corrective actions to remedy the water quality impacts shall be implemented.

**Water Resources – Residual Impact**

With implementation of Mitigation Measures BIO-3 and WE-1, potentially significant impacts to water quality would be reduced to less than significant levels.

<table>
<thead>
<tr>
<th>MANDATORY FINDINGS OF SIGNIFICANCE.</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildfire population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ✓ | |
b) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? | ✓ | |
c) Does the project have potential impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ✓ | |
d) Does the project have potential environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | ✓ | |

**INITIAL STUDY CONCLUSION**

On the basis of this initial evaluation it has been determined that with identified mitigation measures agreed-to by the applicant, potentially significant impacts would be avoided or reduced to less than significant levels. A Mitigated Negative Declaration will be prepared.

Initial Study - Page 30
C. Mitigation Monitoring and Reporting Program
D. Tidal Restoration Demonstration Project Year 3 Annual Monitoring Report
E. Draft Biological Assessment for the Basin E/F Tidal Restoration Project
F. City of Santa Barbara Planning Commission Recommended Conditions of Approval
G. Loggerhead Shrike Summary Report dated January 27, 2010
H. Response to Comment Letters Received on Draft Mitigated Negative Declaration
LIST OF SOURCES USED IN PREPARATION OF THIS INITIAL STUDY

The following sources used in the preparation of this Initial Study are located at the Community Development Department, Planning Division, 630 Garden Street, Santa Barbara and are available for review upon request:

Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents (Association of Environmental Professionals, June 29, 2007)

Draft Biological Assessment for the Basin E/F Tidal Restoration Project

California Environmental Quality Act (CEQA) & CEQA Guidelines

Flood Insurance Rate Map for the Santa Barbara Airport (1991)

General Plan Conservation Element

General Plan Land Use Element

General Plan Noise Element w/appendices

General Plan Map

General Plan Seismic Safety/Safety Element

General Plan Update 2030: Conditions, Trends and Issues Report

Geology Assessment for the City of Santa Barbara


Institute of Traffic Engineers Trip Generation Manual

Local Coastal Program (Airport and Goleta Slough)

Master Environmental Assessment

Santa Barbara Airport Aviation Facilities Plan (2002)

Santa Barbara Airport – Project Description – Basin E/F Tidal Restoration Project (2009)

Santa Barbara Airport Part 150 Noise Compatibility Study (2005)

Santa Barbara Municipal Code & City Charter

Tidewater Goby Survey Protocol (USFWS 2006)

Tidal Restoration Demonstration Project Year 3 Annual Monitoring Report (URS 2009)

URBEMIS 2007 Version 9.2.4

Zoning Ordinance & Zoning Map

Airport-wide Phase I Archaeological Resources Report prepared by Snethcamp (1992) not available to the public
PURPOSE

The purpose of the Basin E/F Tidal Restoration Project Mitigation Monitoring and Reporting Program (MMRP) is to ensure compliance with all mitigation measures identified in the Initial Study to mitigate or avoid potentially significant adverse environmental impacts resulting from the proposed project. The implementation of this MMRP shall be accomplished by City staff and the project developer's consultants and representatives. The program shall apply to the following phases of the project:

- Plan and specification preparation
- Pre-construction conference
- Construction of the site improvements
- Post Construction

I. RESPONSIBILITIES AND DUTIES

A qualified representative of the developer, approved by the City Planning Division and paid for by the developer, shall be designated as the Project Environmental Coordinator (PEC). The PEC shall be responsible for assuring full compliance with the provisions of this mitigation monitoring and reporting program to the City. The PEC shall have authority over all other monitors/specialists, the contractor, and all construction personnel for those actions that relate to the items listed in this program.

It is the responsibility of the contractor to comply with all mitigation measures listed in the attached MMRP matrix. Any problems or concerns between monitors and construction personnel shall be addressed by the PEC and the contractor. The contractor shall prepare a construction schedule subject to the review and approval of the PEC. The contractor shall inform the PEC of any major revisions to the construction schedule at least 48 hours in advance. The PEC and contractor shall meet on a weekly basis in order to assess compliance and review future construction activities.

A. PRE-CONSTRUCTION BRIEFING

The PEC shall prepare a pre-construction project briefing report. The report shall include a list of all mitigation measures and a plot plan delineating all sensitive areas to be avoided. This report shall be provided to all construction personnel.

The pre-construction briefing shall be conducted by the PEC. The briefing shall be attended by the PEC, construction manager, necessary consultants, Planning Division Case Planner, Public Works representative and all contractors and subcontractors associated with the project. Multiple pre-construction briefings shall be conducted as the work progresses and a change in contractor occurs.

The MMRP shall be presented to those in attendance. The briefing presentation shall include project background, the purpose of the MMRP, duties and responsibilities of each participant, communication procedures, monitoring criteria, compliance criteria, filling out of reports, and duties and responsibilities of the PEC and project consultants.
It shall be emphasized at this briefing that the PEC and project consultants have the authority to stop construction and redirect construction equipment in order to comply with all mitigation measures.

Once construction commences, field meetings between the PEC and project consultants, and contractors shall be held on an as-needed basis in order to create feasible mitigation measures for unanticipated impacts, assess potential effects, and resolve conflicts.

II. IMPLEMENTATION PROCEDURES

There are three types of activities which require monitoring. The first type pertains to the review of the Conditions of Approval and Construction Plans and Specifications. The second type relates to construction activities and the third to ongoing monitoring activities during operation of the project.

A. MONITORING PROCEDURES

The PEC and required consultant(s) shall monitor all field activities. The authority and responsibilities of the PEC and consultant(s) are described in the previous section.

B. REPORTING PROCEDURES

The following three (3) types of reports shall be prepared:

1. Schedule

   The PEC and contractor shall prepare a monthly construction schedule to be submitted to the City prior to or at the pre-construction briefing.

2. General Progress Reports

   The PEC shall be responsible for preparing written progress reports submitted to the City. These reports would be expected on a weekly basis during grading, excavation and construction, activities. The reports would document field activities and compliance with project mitigation measures, such as dust control and sound reduction construction.

3. Final Report

   A final report shall be submitted to the Planning Division when all monitoring (other than long term operational) has been completed and shall include the following:

   a. A brief summary of all monitoring activities.

   b. The date(s) the monitoring occurred.

   c. An identification of any violations and the manner in which they were dealt with.
d. Any technical reports required, such as noise measurements.

e. A list of all project mitigation monitors.

C. MMRP MATRIX

The following MMRP Matrix describes each initial study mitigation measure, monitoring activities and the responsibilities of the various parties, along with the timing and frequency of monitoring and reporting activities. For complete language of each condition, the matrix should be used in conjunction with the mitigation measures described in full in the Initial Study.

The MMRP Matrix is intended to be used by all parties involved in monitoring the project mitigation measures, as well as project contractors and others working in the field. The Matrix should be used as a compliance checklist to aid in compliance verification and monitoring requirements. A copy of the MMRP matrix shall be kept in the project file as verification that compliance with all mitigation measures has occurred.
### AQ-1
During site grading and transportation of fill materials, regular water sprinkling shall occur. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to minimize dust generation. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust but minimized so as to prevent runoff and ponding.

Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.

<table>
<thead>
<tr>
<th>Responsible Entity</th>
<th>Monitor</th>
<th>Action by Monitor</th>
<th>Mitigation Requirement</th>
<th>Monitoring Frequency</th>
<th>Reporting Frequency</th>
<th>Compliance Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor</td>
<td>PEC</td>
<td>Ensure requirement shown on building plans and carried out on site.</td>
<td>During site grading and transportation of fill materials, regular water sprinkling shall occur. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to minimize dust generation. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust but minimized so as to prevent runoff and ponding. Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.</td>
<td>At building plan check and daily throughout construction period.</td>
<td>Daily</td>
<td></td>
</tr>
</tbody>
</table>

### AQ-2
Trucks transporting fill shall be covered.

| Contractor | PEC | Ensure requirement shown on building plans and carried out on site. | Daily |
| AQ-3
The haul routes for all construction trucks 3 tons or more shall be approved by City Transportation and Parking Manager.

| Contractor | PEC | Ensure haul routes identified on building plans and carried out on site. | At building plan check and daily throughout construction period. | Daily |

### AQ-4
During and after excavation, treat soil to prevent wind pick-up by seeding, use of soil binders, watering or other methods approved by APCD.

<p>| Contractor | PEC | Ensure requirement shown on building plans and carried out on site. | At building plan check and daily throughout construction period. | Daily |</p>
<table>
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<tr>
<th>Mitigation Measure</th>
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<tr>
<td>AQ-5</td>
<td>Construction equipment shall be maintained in tune per the manufacturer’s specifications.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Ensure construction equipment is maintained in tune per the manufacturer’s specifications.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division.</td>
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<tr>
<td>AQ-6</td>
<td>Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated “clean” diesel engines) shall be utilized wherever feasible.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that diesel engines used in construction are federally mandated “clean” engines.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division.</td>
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</tr>
<tr>
<td>AQ-7</td>
<td>The engine size of construction equipment shall be the minimum practical size.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Ensure engine sizes are kept to a minimum.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division.</td>
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</tr>
<tr>
<td>AQ-87</td>
<td>The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Ensure construction equipment is operated through efficient management practices.</td>
<td>Daily during construction.</td>
<td>Weekly during construction.</td>
<td>Weekly during construction.</td>
<td>Building &amp; Safety Division.</td>
<td></td>
</tr>
<tr>
<td>AQ-98</td>
<td>Catalytic converters shall be installed on gasoline-powered equipment, if feasible.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that diesel engines used in construction are federally mandated “clean” engines.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division.</td>
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## Mitigation Monitoring and Reporting Program Matrix

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<tr>
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</thead>
<tbody>
<tr>
<td>AQ-109</td>
<td>Diesel catalytic converters shall be installed, if available.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that diesel engines used in construction are federally mandated &quot;clean&quot; engines.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division</td>
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<tr>
<td>AQ-4110</td>
<td>Diesel particulate emissions shall be reduced using EPA or California certified and or verified control technologies like particulate traps.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that diesel emissions are being reduced by approved technologies.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division</td>
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<tr>
<td>AQ-4211</td>
<td>Diesel powered equipment shall be replaced by electric equipment whenever feasible.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that diesel equipment is replaced whenever feasible.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division</td>
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<tr>
<td>AQ-12</td>
<td>All construction equipment shall be maintained in tune per the manufacturer’s specifications.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that equipment is in tune per specifications.</td>
<td>Daily during construction.</td>
<td>Daily during construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division</td>
<td></td>
</tr>
<tr>
<td>AQ-13</td>
<td>Catalytic converters shall be installed on gasoline-powered equipment, if feasible.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that catalytic converters are installed.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division</td>
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</tr>
<tr>
<td>AQ-14</td>
<td>Only heavy-duty diesel construction equipment manufactured after 1996 (with federally mandated &quot;clean&quot; diesel engines) shall be used.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check manufacture date of all heavy-duty equipment.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
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<td>AQ-15</td>
<td>Construction equipment operating on site shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines. Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check engines and catalytic converters against EPA or California certifications.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division</td>
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<tr>
<td>AQ-16</td>
<td>Diesel powered equipment shall be replaced by electric equipment whenever feasible.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check that electric equipment cannot be used for all diesel powered equipment.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Once prior to construction.</td>
<td>Building &amp; Safety Division</td>
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<tr>
<td>AQ-17</td>
<td>Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units shall be used whenever possible.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Monitor idling trucks and report idling exceeding five minutes.</td>
<td>Daily during construction.</td>
<td>Daily during construction.</td>
<td>Once prior to construction.</td>
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<tr>
<td>BIO-1</td>
<td>Prior to construction and during all dewatering activities surveys shall be conducted by a biologist approved to handle tidewater gobies under a Section 10a(1a) Recovery Permit to determine the general abundance of tidewater gobies in tidal basin. Relocation of any tidewater gobies shall follow the procedures described in the USFWS Tidewater Goby Survey Protocol (2006). All native fish species shall be relocated from the Tidal Demonstration Basin and Foxtrot Drainage prior to any earthwork. The area of Tecolotito Creek and Foxtrot Drainage to be dewatered shall be minimized, not completely dewatered if practical, and kept moist in order to minimize mortality of aquatic species. Foot traffic in any channel bottom shall be limited to fish relocation and dewatering activities. Post construction surveys for tidewater goby shall be implemented for 2 years following completion of the project. The surveys shall be conducted by a Section 10a(1a) Recovery Permit approved biologist to determine the general abundance of tidewater gobies in tidal basin. Survey methods shall follow those previously conducted by Ecorp Consulting to measure population densities in Tecolotito and Carneros Creeks. A total of four surveys shall be conducted including one pre-spawn survey in May/June and one post-spawn survey in August of each year. All tidewater goby survey reports shall be submitted to the USFWS for acceptance.</td>
<td>Contractor &amp; Airport Engineer</td>
<td>Monitor prior to, during, and after construction.</td>
<td>Throughout project.</td>
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<td>PEC final report to Planning Division and annual monitoring reports to USFWS.</td>
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<tr>
<td>BIO-2</td>
<td>The project site shall be monitored by a qualified biologist for Belding's savannah sparrow and loggerhead shrike. Prior to site preparation and construction activities, the Airport shall have a qualified biologist survey all breeding/nesting habitat within the project site every seven days for eight consecutive weeks. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). Site preparation and construction activities will only begin if no breeding/nesting birds are observed and concurrence has been received from the CDFG. If breeding activities or an active nest is located in a work area, site preparation and construction activities shall not begin in that area until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area and the young will no longer be impacted by the project. Once site preparation and construction activities have commenced, the project site shall be monitored for Belding's savannah sparrow and loggerhead shrike on a weekly basis. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG) until construction is complete. Site preparation or construction activities shall be suspended immediately in a given basin if the qualified biologist determines that breeding or nesting activity is occurring in that basin. Site preparation and construction activities shall not resume until the monitor determines that the breeding and nesting activities described above have stopped.</td>
<td>Contractor &amp; Airport Engineer</td>
<td>Qualified Biologist</td>
<td>Monitor prior to, during, and after construction.</td>
<td>Throughout project.</td>
<td>Weekly, beginning 8 weeks prior to construction, weekly during construction, and monthly after construction.</td>
<td>Once prior to construction to gain CDFG concurrence. Once following completion of construction activities, or if disturbance is recorded.</td>
<td>PEC Report to Planning Division and Department of Fish and Game.</td>
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<td>BIO-2 (continued)</td>
<td>Noise levels will be monitored by a qualified biologist to determine if construction activities are disruptive to Belding savannah sparrow or loggerhead shrike in or adjacent to the project site. If a significant disruption to foraging behavior is observed, construction activities in the area of disturbance will be stopped immediately until the qualified biologist develops recommendations to reduce or eliminate the disturbances and receives concurrence from CDFG. Use of the project site by Belding’s savannah sparrows or loggerhead shrikes will be recorded during routine restoration monitoring, including evidence of breeding.</td>
<td>Contractor &amp; Airport Engineer</td>
<td>PEC</td>
<td>Check for compliance.</td>
<td>Throughout construction.</td>
<td>Throughout construction.</td>
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<tr>
<td>BIO-3</td>
<td>Construction activities shall be prohibited in the experimental basins between November 1 and July 15 to avoid the rainy season and disruption of any active nesting territories during the breeding season of the Belding’s savannah sparrow and the loggerhead shrike.</td>
<td>Contractor &amp; Airport Engineer</td>
<td>PEC</td>
<td>Check for compliance.</td>
<td>Throughout construction.</td>
<td>Throughout construction.</td>
<td></td>
<td>PEC Report to Planning Division and CA Department of Fish and Game (CDFG).</td>
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<tr>
<td>BIO-4</td>
<td>Areas of temporary disturbance along the access routes shall be reseeded with native plants from local genetic stock. Weeding will be performed to ensure that restoration performance criteria are met. Weeding shall occur at least six times per year, or more frequently if necessary. Maintenance will be performed by hand, including techniques such as weed whacking and hand removal which has proven affective in other Airport restoration projects. Herbicides shall only be used if hand removal is not effective. The restoration performance criteria are as follows: (1) All installed plants must achieve a 70% survival rate after one year following the construction completion, and an 80% survival rate of the remaining plants after two and three years. (2) At the end of seven years, there must be a minimum of 75% total native plant cover. (3) Non-native weeds must remain below 15% of total vegetative coverage at all times during the seven year period. By the end of the seventh year, the restoration site shall not have more than 10% non-native cover. Non-native grasses and common naturalized species that are not aggressive are not included in this performance criteria. (4) The project site must be without supplemental irrigation for a minimum of three years. (5) Except for pickleweed, no species shall constitute more than 50% of the vegetative cover. (6) No woody invasive species shall be present, and herbaceous invasive species shall not exceed 5% cover.</td>
<td>Contractor &amp; Airport Engineer</td>
<td>Qualified Biologist &amp; PEC</td>
<td>Once immediately following completion of construction activities and as needed up to six times per year during monitoring period.</td>
<td>Six times a year.</td>
<td>Once following completion of construction activities. Once a year during monitoring period.</td>
<td>PEC final report to Planning Division and annual monitoring reports to CDFG.</td>
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</table>
### Mitigation Monitoring and Reporting Program Matrix

| Mitigation Measure | Mitigation Requirement                                                                                                                                                                                                                                                                                                                                 | Responsible Entity                                      | Action by Monitor                              | Mitigation Frequency | Monitoring Frequency | Reporting Frequency | Compliance Check       | Verification                  |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------|-----------------------|----------------------|----------------------|-----------------------|------------------------|--------------------------------|
| BIO-5              | A pre-construction survey shall be conducted during the blooming period for southern tarplant (July-August) and Coulter’s goldfields (February-June) immediately prior to construction in all areas of the project site containing habitat suitable to support southern tarplant and/or Coulter’s goldfields. Populations within or adjacent to the project site that can be avoided will be clearly marked with identifying flagging to ensure projection of the species. If individuals or populations of southern tarplant and Coulter’s goldfields cannot be avoided, all seed available from the plant to be removed would be salvaged and used in the restoration seed mix. | Contractor and Airport Engineer, PEC and Qualified Biologist | Check for compliance                         | Seeds collected prior to construction. Seeding immediately following completion of construction activities. | Once in February-June and once in July-August before construction. | Once following completion of construction activities. | PEC Report to Planning Division. |
Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts associated with past human occupation of the parcel. If such archaeological resources are encountered or suspected, work shall be halted immediately; the City Environmental Analyst shall be notified and an archaeologist from the most current City Qualified Archaeologists List shall be retained by the applicant. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc. If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

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<tr>
<td>CR-1</td>
<td>Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts associated with past human occupation of the parcel. If such archaeological resources are encountered or suspected, work shall be halted immediately; the City Environmental Analyst shall be notified and an archaeologist from the most current City Qualified Archaeologists List shall be retained by the applicant. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc. If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.</td>
<td>Contractor and Airport Engineer</td>
<td>PEC</td>
<td>Check for compliance</td>
<td>Continually during construction</td>
<td>Continually during construction</td>
<td>Once following completion of construction activities</td>
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<tr>
<td>HAZ-1</td>
<td>All construction work shall cease in the event of visual discovery of hazardous or unknown material or upon discovery of chemical odors. The Santa Barbara County Hazardous Materials Unit (HMU) shall be contacted and given access to the site. Resumption of work shall not take place until such work has been approved by the HMU.</td>
<td>Contractor PEC</td>
<td>Check for compliance</td>
<td>Continually during construction</td>
<td>Continually during construction</td>
<td>Once following completion of construction activities</td>
<td>PEC Report to Planning Division</td>
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<tr>
<td>NOI-1</td>
<td>All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers’ muffler and silencing devices.</td>
<td>Contractor PEC</td>
<td>Check for compliance</td>
<td>Once prior to construction</td>
<td>Weekly during construction</td>
<td>Once following completion of construction activities</td>
<td>PEC report to Planning Division</td>
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<tr>
<td>PF-1</td>
<td>Recycling and/or reuse of construction and green waste materials shall be implemented and containers shall be provided on site for that purpose during the construction period.</td>
<td>Contractor PEC</td>
<td>Check to ensure containers provided and being used</td>
<td>Continually during construction</td>
<td>Continually during construction</td>
<td>Weekly during construction and final report</td>
<td>Building &amp; Safety Division</td>
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<tr>
<td>TC-1</td>
<td>Construction-related truck trips shall not be scheduled during p.m. peak hours (4:00 p.m. to 6:00 p.m.) to help reduce truck traffic on adjacent streets and roadways.</td>
<td>Contractor PEC</td>
<td>Ensure requirement shown on building plans and carried out on site</td>
<td>Continually throughout construction period</td>
<td>Continually throughout construction period</td>
<td>Weekly during construction and final report</td>
<td>Planning Division</td>
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<tr>
<td>TC-2</td>
<td>The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods, subject to approval by the Transportation Manager.</td>
<td>Contractor PEC</td>
<td>Establish routing plan with Transportation Division and ensure the plan is followed</td>
<td>Continually throughout construction period</td>
<td>Continually throughout construction period</td>
<td>Weekly during construction and final report</td>
<td>Transportation Division</td>
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<tr>
<td>TC-3</td>
<td>The haul route(s) for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Manager.</td>
<td>Contractor PEC</td>
<td>Establish routing plan with Transportation Division and ensure the plan is followed</td>
<td>Continually throughout construction period</td>
<td>Continually throughout construction period</td>
<td>Weekly during construction and final report</td>
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<td>TC-4</td>
<td>The location of construction parking and storage shall be provided in locations subject to the approval of the Transportation Manager. During construction, free parking spaces for construction workers shall be provided.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Determine parking &amp; storage areas with Transportation Division &amp; ensure areas are used.</td>
<td>Continually throughout construction period.</td>
<td>Continually throughout construction period.</td>
<td>Weekly during construction and final report.</td>
<td>Transportation Division</td>
<td></td>
</tr>
<tr>
<td>WE-1</td>
<td>The Storm Water Pollution Prevention Plan (SWPPP) utilizing Best Management Practices shall be used for grading and construction activities and approved by the Building Division to maintain all sediment on site and out of the drainage system. The plan shall include, at a minimum: 1. Fill material to be imported to the site includes the following: (1) natural rock gravel and cobble for subgrade preparation and access road surface (at Basin L/M only), which will not contain any contaminants; coconut fiber mats (mesh type) that is biodegradable and will not introduce any contaminants; and (3) native plant seeds and vegetative matter.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check for suitability of fill material.</td>
<td>During construction as fill material is brought to site.</td>
<td>During construction as material is brought to site.</td>
<td>Weekly construction.</td>
<td>PEC report to Planning Division. And RWQCB.</td>
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</table>
### Basin E/F Tidal Restoration Project (MST2009-00424)

#### Mitigation Monitoring and Reporting Program Matrix

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<tr>
<th>Mitigation Measure</th>
<th>Mitigation Requirement</th>
<th>Responsible Entity</th>
<th>Monitor</th>
<th>Action by Monitor</th>
<th>Mitigation Frequency</th>
<th>Monitoring Frequency</th>
<th>Reporting Frequency</th>
<th>Compliance Check</th>
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<td>WE-1 (continued)</td>
<td>2. The following BMPs for effective temporary and final soil stabilization and to reduce sediment discharges from the site during and after construction shall be implemented: (a) construction shall occur during dry season when there is no rainfall per Mitigation Measure BIO-2; (b) no soils shall be stockpiled near the basins where runoff could enter the creek; (c) the culvert trenches shall be backfilled with low permeability materials to reduce piping and seepage which could destabilize the slopes of the berms; (d) a cofferdam shall be utilized during culvert installation to ensure that the exposed slopes of the berms will not be eroded; (e) to the extent practicable, the areas of disturbance shall be minimized; (f) no grading shall occur outside designated limits on the final engineering drawings; (g) temporary sediment control materials shall be maintained on-site throughout the duration of construction to allow implementation of temporary sediment controls in the event of an unpredicted rain, and for rapid response to failures or emergencies; (h) silt fences shall be deployed along the limits of grading to contain loose soils and filter stormwater runoff, if necessary; (i) post-construction erosion on the basin slopes shall be managed by the use of erosion control blankets (i.e., coconut fiber mesh), as well as proposed pickleweed cuttings and native plants and seeding in the basins and along the berms, (j) the outer slope of the berms shall be stabilized with erosion control mats and vegetation after installing the culverts; and (k) polyethylene covers shall be used to cover exposed stockpiled materials prior to forecast storm events, and anchored to prevent damage by wind.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check for BMP installation and compliance.</td>
<td>Continually throughout construction.</td>
<td>Continually throughout construction.</td>
<td>Weekly during construction, or if there is a violation.</td>
<td>PEC Report to Planning Division and RWQCB.</td>
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3. To reduce sediment tracking from the construction site onto private or public roads, a stabilized construction entrance/exit shall be constructed and maintained at construction site entrances and exits to reduce tracking of sediment as a result of construction traffic. The entrance shall be designed to prevent runoff from leaving the site. Stabilization material shall be 3 to 6-inch aggregate. The entrance shall be flared where it meets the existing road to provide an adequate turning radius.

   Contractor  PEC  Check for compliance.  Install once prior to construction and maintenance throughout construction period.  Check for installation throughout construction activities then monitor continually throughout construction.  Weekly during construction.  PEC Report to Planning Division and RWQCB.

4. To prevent non-stormwater discharges: (a) construction vehicle cleaning and maintenance shall not be performed on-site or in the Slough; (b) all construction vehicles shall be fueled off-site and outside of the Slough in a temporary fueling area designated by the Airport on a level, graded area that is at least 100 feet from all wetlands; (c) watertight shipping containers shall be used to store hand tools, small parts, and most construction materials that can be carried by hand, such as paint cans, solvents and grease; (d) spill clean-up materials, material safety data sheets, a material inventory, and emergency contact numbers shall be maintained and stored in a container; (e) solid wastes shall be loaded directly into trucks for off-site disposal; when on-site storage is necessary, solid wastes shall be stored in watertight dumpsters in the general storage area of the contractors yard; (f) when contaminated soils are encountered, the Airport shall be notified, the contaminated soils shall be contained, covered if stockpiled, and disposed of properly in accordance with all applicable regulations; and (g) portable toilets shall be located and maintained in the staging areas for the duration of the project.

   Contractor  PEC  Check for BMP installation and compliance.  Continually throughout construction.  Continually throughout construction.  Weekly during construction, or sooner if there is a violation.  PEC Report to Planning Division and RWQCB.
<table>
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<tr>
<th>Mitigation Measure</th>
<th>Mitigation Requirement</th>
<th>Responsible Entity</th>
<th>Monitor</th>
<th>Action By Monitor</th>
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<td>WE-1 (continued)</td>
<td>5. The contractor shall inspect the adequacy of BMPs on the site prior to a forecast storm, after a rain event that causes runoff from the construction site, at 24-hour intervals during extended rain events, weekly during the rainy season, and every two weeks during the non-rainy season. The results of all inspections and assessments will be documented, a copy will be provided to the Airport Engineer within 24 hours of the inspection. Copies of the completed inspection checklists will be maintained with the SWPPP. A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs.</td>
<td>Contractor</td>
<td>PEC and Airport Engineer</td>
<td>Perform BMP Inspections.</td>
<td>As needed during and following construction.</td>
<td>Prior to a forecast storm; after a rain event that causes runoff from the construction site; at 24-hour intervals during extended rain events; weekly during the rainy season; every 2 weeks during the non-rainy season.</td>
<td>Completed checklists submitted within 24 hours of inspection to Airport Engineer.</td>
<td>Report to Airport Engineer and RWQCB as required.</td>
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<td>6. If a discharge occurs or if the project receives a written notice or order from any regulatory agency, the Contractor shall immediately notify the Airport Engineer, and will file a written report to the Airport Engineer within 2 days of the discharge event, notice, or order. Corrective measures shall be implemented immediately following the discharge, notice or order. All discharges shall be documented. Discharges requiring reporting include: non-storm water, except conditionally exempted discharges, discharged to the slough without treatment by an approved BMP described in the SWPPP; storm water discharged to the slough where the BMPs have been overwhelmed or not properly maintained or installed; storm water runoff containing hazardous substances from spills discharged to the Slough; and where water quality sample results indicate elevated levels of non-visible pollutants.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Check for compliance.</td>
<td>Continually throughout construction.</td>
<td>Continually throughout construction.</td>
<td>Continually throughout construction.</td>
<td>Report to Airport Engineer and RWQCB as required.</td>
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<td>7. The proposed basins shall be drained at or near the same locations of existing outlets.</td>
<td>Airport Engineer Planning Division</td>
<td>Check for compliance.</td>
<td>Once during plan check.</td>
<td>Ensure that outlets are placed at or near same location as existing outlets.</td>
<td>During plan check.</td>
<td>Planning Division.</td>
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<td>Mitigation Measure</td>
<td>Mitigation Requirement</td>
<td>Responsible Entity</td>
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<td>WE-1 (continued)</td>
<td>8. The proposed basins shall be designed to drain freely to Goleta Slough, conveying both diurnal tidal waters and runoff from precipitation. No sediments or pollutants shall be discharged during construction, and post-construction sediment discharge shall be minimized by revegetating graded areas.</td>
<td>Contractor</td>
<td>Planning Division, PEC &amp; Qualified Biologist</td>
<td>Check for Compliance.</td>
<td>Check design during plan check. PEC monitors potential for discharge continually throughout construction and ensures replanting is completed following construction.</td>
<td>During plan check and continually throughout construction.</td>
<td>During plan check and weekly during construction.</td>
<td>PEC report to Planning Division and RWQCB</td>
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<td>9. The proposed culverts and slide gates shall be designed to allow the free passage of tidal waters into and out of the basins without any scouring effects. The SWPPP shall contain various BMPs to reduce construction and post-construction erosion and to stabilize all affected slopes.</td>
<td>Contractor/Airport Engineer</td>
<td>PEC/Airport Engineer</td>
<td>Check for compliance.</td>
<td>Check design during plan check. PEC and Airport Engineer monitor BMP compliance throughout construction and biweekly following construction.</td>
<td>During and following construction as required in SWPPP.</td>
<td>During and following construction as required in SWPPP.</td>
<td>RWQCB</td>
<td></td>
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<tr>
<td></td>
<td>10. The Airport will routinely monitor and repair the proposed culverts and slide gates, areas of revegetation, and areas that have been graded. The Airport will restore and stabilize any areas that become eroded or damaged from precipitation or runoff.</td>
<td>Airport Department</td>
<td>Airport Engineer</td>
<td>Check for compliance.</td>
<td>Monthly during monitoring period.</td>
<td>Monthly during monitoring period.</td>
<td>Following construction as required in SWPPP.</td>
<td>RWQCB</td>
<td></td>
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<tr>
<td></td>
<td>11. Under the proposed SWPPP, the Airport shall conduct visual monitoring of receiving waters during and after construction to ensure that no discharge of pollutants or sediments occurs which could cause water quality exceedances. If it is determined that water quality standards are exceeded, the Airport shall conduct monitoring until it is determined that water quality standards are no longer being exceeded. An assessment of the potential sources of the excessive pollutant loadings will be conducted and corrective actions to remedy the water quality impacts will be implemented.</td>
<td>Contractor</td>
<td>PEC</td>
<td>Conduct visual monitoring of receiving waters during construction.</td>
<td>Daily during construction.</td>
<td>Daily during construction.</td>
<td>Weekly during construction, sooner if there is an exceedances of water one or more water quality standards/</td>
<td>Report to Planning Division.</td>
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TIDAL RESTORATION DEMONSTRATION PROJECT

YEAR 3 ANNUAL MONITORING REPORT

SANTA BARBARA AIRPORT
SANTA BARBARA, CALIFORNIA

Prepared for:
Santa Barbara Airport
601 Firestone Road
Santa Barbara, CA 93117

Prepared by:
URS
130 Robin Hill Road, Suite 100
Goleta, California 93117
Contact: Johanna Kisner (805) 964-6010
URS Project Number 28906645
March 2009

Exhibit D
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SECTION 1.0
INTRODUCTION

This is the third and final annual monitoring report submitted to the Santa Barbara Airport (Airport) for the Tidal Restoration Demonstration Project at Goleta Slough in Santa Barbara, California. This report includes the third year of post-construction monitoring information from December 1, 2007 to November 30, 2008 and compares it with pre-construction monitoring and the first two years of post-construction monitoring. Pre-construction monitoring occurred from March 4 to May 28, 2004 and December 9, 2004 to July 28, 2005. The first annual report included the first year of post-construction monitoring information from November 1, 2005 to October 31, 2006. The second annual report included the second year of post-construction monitoring information from November 1, 2006 to November 30, 2007.

As part of the experiment, URS biologists and our subcontractors ECORP Consulting, Inc. (ECORP) and David Compton monitored bird, vegetation, benthic macroinvertebrate (BMI), tidewater goby, and tidal feature (hydrology and water quality) responses to the new hydrologic regime.

1.1 BACKGROUND INFORMATION

In 2003, URS Corporation (URS) prepared the Goleta Slough Tidal Restoration Study for the Airport and the California Coastal Conservancy (URS 2003b). The study included a preliminary feasibility evaluation for improving tidal circulation at Goleta Slough with the goal of enhancing existing wetlands. Conceptual plans were also developed as part of the two-year field experiment to further determine the feasibility of the project. The Federal Aviation Administration (FAA) and U.S. Department of Agriculture (USDA) Wildlife Services approved the project and the Airport constructed the field experiment from August to October 2005. The project required approval by the City of Santa Barbara (City) Planning Commission and California Coastal Commission (CCC), with issuance of a Coastal Development Permit (CDP) by the City. Other required permits included a U.S. Army Corps of Engineers 404 permit, 401 water quality certification by the Regional Water Quality Control Board, 1601 Streambed Alteration Agreement by the California Department of Fish and Game, and a grading permit from the City.

The Tidal Restoration Demonstration Project involves the conversion of a historical tidal basin of Goleta Slough (Basin F) that was no longer tidally influenced into an experimental tidal basin (approximately 2.5 acres) and a non-tidal control basin (approximately 1.7 acres). See Figure 1 for the Site Location Map which shows the location of the experimental tidal basin and control basin. The overall objective of the Tidal Restoration Demonstration Project is to provide empirical data to assist in determining the feasibility of a long-term tidal restoration program in Goleta Slough. The implementation of this small-scale pilot project
provides an opportunity to observe the hydrologic and ecological effects of increasing tidal circulation to a non-tidal area of the Goleta Slough. The experiment was to be monitored by URS for a minimum of two years to assess the success in establishing the desired tidal habitats, identify potential implementation and maintenance problems, and determine the effects of habitat changes on the potential for aviation bird-strike hazards. A third year of monitoring was conducted because several factors resulted in inconclusive results related to the bird strike hazard. These factors include two years of lower than average rainfall, lack of established vegetation in the tidal basin during the first year resulting in temporary increased use by killdeer, and disturbances from various Airport and Goleta Slough construction projects. This third year of post-construction monitoring provides data that reflects site conditions without ongoing construction activities and with established vegetation at the tidal basin. In addition, since URS discovered the federally-listed endangered tidewater goby (\textit{Eucyclogobius newberryi}) in Goleta Slough in August 2006, a new component of the post-construction monitoring was added in Year 3 to conduct U.S. Fish and Wildlife Service (USFWS) protocol presence/absence surveys for tidewater goby in the tidal basin. Data from the Tidal Restoration Demonstration Project will provide a solid scientific foundation for assessing the feasibility of allowing the experimental basin to remain tidal indefinitely and serve as wetland mitigation for the Airport Airfield Safety Projects, and the feasibility of increasing tidal circulation to additional portions of Goleta Slough in the future.

\section*{1.2 BASIN CONSTRUCTION}

To initiate the experiment, a small tidal basin was created by excavating portions of a larger non-tidal basin (Basin F). A culvert with a tidal gate was then installed under the berm between the experimental tidal basin and the tidally influenced Tecolotito Creek. Construction began in August 2005 and was completed by October 2005. This design placed the experimental tidal basin adjacent to the remainder of the non-tidal basin, separated by an earthen berm. The non-tidal basin thus serves as a control for the effects of tidal circulation, and their proximity allows for easy comparison of environmental parameters. See Figure 2 for the Project Site Map which shows the location of the experimental tidal basin in relation to the non-tidal control basin and Tecolotito Creek.

The experimental tidal basin was constructed in the southern end of Basin F. A 20-foot-wide channel was created in the center of the basin, extending from the tidal gate. The channel was excavated to about 3.5 feet in elevation, matching the channel bottom elevation of Tecolotito Creek. This allowed for the fullest range of tidal elevations possible. The remainder of the basin bottom was excavated to an elevation between 5 and 6 feet. See Appendix A for a topographic map of the experimental tidal basin and the non-tidal control basin.

Low earthen berms were constructed on the north and east sides of the tidal basin at approximately 7.5 foot elevation. The existing berms on the south and west sides of the experimental tidal basin were not modified, except for some temporary vegetation removal.
and installation of the tide gate and culvert. A high density polypropylene pipe culvert was
installed through the southern berm at the southeast corner of the tidal basin, and was
equipped with a slide gate enabling the Airport to temporarily or permanently terminate tidal
inflow if necessary.

1.3 HABITAT RESTORATION IMPLEMENTATION

Prior to the start of the tidal basin experiment, Basin F was hydrologically isolated from the
Goleta Slough, and was dominated by pickleweed (Salicornia virginica) with patches of
prairie bulrush (Bolboschoenus [Scirpus] maritimus). During the clearing and grubbing of the
tidal basin, the contractor, Burke Construction Company, salvaged the top layer of existing
pickleweed and three inches of topsoil to create a stockpile. After grading was completed this
material was turned back into the soil of the new tidal basin from approximately 5 to 6.5 feet
in elevation, excluding the channel in the basin bottom and the top of the berms. Following
construction, the northern, eastern, and western berms were hydroseeded with low-growing
native plants from Goleta Slough including pickleweed, California sagebrush (Artemisia
californica), quailbush (Atriplex lentiformis), alkali heath (Frankenia salina), wild heliotrope
(Heliotropium curassavicum), verbena (Verbena lasiostachys), coast goldenbush (Isocoma
menziesii), and southern tarplant (Centromadia [Hemizonia] parryi ssp. australis, CNPS List
1B.1). Seeding occurred in the beginning of October 2005. Hydroseed mixed with paper
mulch was distributed on the top of the berms and the basin slopes between 6.5 and 7.5 feet
in elevation. These seeded areas were slow to germinate, so a temporary overhead irrigation
system was installed on the top of the berms to assist with germination. On December 20,
2006, the southern berm was seeded by hand broadcasting native seed and then manually
raking over the seed. Species that were seeded included California sagebrush, quailbush,
alkali heath, wild heliotrope, verbena, and coast goldenbush. Revegetation of the southern
berm relied on natural rainfall without supplemental irrigation.

The southern berm was weeded and seeded under the provisions of the wetland restoration
program for the Airfield Safety Projects (URS 2007a) and Tecolotito Berm Restoration
Project (URS 2007c), which will be maintained through at least December 2013. The western
berm was weeded until July 2007 under the provisions of the wetland restoration program for
the Airport Safety Grading Project (URS 2007b). The northern and eastern berms were
weeded under the provisions of the wetland restoration program for the Tidal Restoration
Demonstration Project, which was on an as needed basis. Currently, only the southern berm
is being actively weeded.

1.4 MONITORING

In Year 1 through Year 3, four parameters were monitored during the Tidal Restoration
Demonstration Project: bird variety and use, vegetation establishment, benthic
macroinvertebrate assemblages, and tidal features. In Year 3, a fifth parameter was added,
with tidewater goby abundance also being monitored. See Figure 2 for the Project Site Map which details the survey areas. Bird surveys were conducted weekly and biweekly by David Compton and URS biologists, and documented bird use of the experimental tidal basin in comparison to other Airport basins. Vegetation in the tidal basin was monitored quarterly by URS biologists. Transects were used to document vegetation establishment after construction. Benthic macroinvertebrate surveys were conducted in May and August by ECORP and URS biologists. Benthic samples were collected to document macroinvertebrate species in the tidal basin, the control basin, Tecolotito Creek, and Goleta Slough. Tidewater goby surveys were conducted in May and October by ECORP and URS biologists. Protocol presence/absence surveys were conducted in the tidal basin to determine the presence, quantities and size class of tidewater gobies and other fish species. Tidal information was collected throughout the year as part of the Tidal Restoration Demonstration Project and data was also used from the Airport Stormwater Sampling Project. Tidal features including water quality and hydrology parameters were collected by URS and ECORP biologists in order to document conditions of the tidal basin compared to Tecolotito Creek, Goleta Slough, and the control basin. This report compiles the data from these studies in order to assist in determining the feasibility of a long-term tidal restoration program at Goleta Slough.
SECTION 2.0
METHODOLOGY

2.1 BIRDS

Bird surveys were conducted by David Compton and URS biologists. Data were collected to
document bird use of the experimental tidal basin compared to other Airport basins. Pre-
construction baseline surveys were conducted from March 4 through May 28, 2004 and again
from December 9, 2004 to July 28, 2005. Year 1 post-construction surveys were conducted
from November 1, 2005 through October 31, 2006, Year 2 post-construction surveys were
conducted from November 1, 2006 through November 30, 2007, and Year 3 post-
construction surveys were conducted from December 1, 2007 through November 30, 2008.
The same methodology was used during pre-construction and post-construction surveys.

Two types of surveys were conducted including weekly surveys of Basin F (tidal basin and
control basin) and Basin E; and biweekly surveys (every two weeks) of other Airport tidally
influenced and non-tidal basins (Basins A, B/C/D, and G). See Appendix B for a map of
basin locations and where the surveys were conducted. Observation points were designated at
the edges of Basin E and the tidal basin for the weekly surveys, and Basin A and Basin G for
the biweekly surveys. No location adjacent to the control basin provided a good view of the
basin and the cover necessary to avoid flushing birds. Therefore, the control basin was
surveyed simultaneously with the tidal basin from the observation point adjacent to the tidal
basin. Additionally, a walking transect was established along the edges of Basins A and
B/C/D for the biweekly surveys. Basin B, C, and D were surveyed together, creating an area
comparable in size to Basin A.

Three types of data were gathered during surveys:

- Birds using the basin (i.e., feeding, resting, or using the basin in any way besides flying
  over it)
- Birds flying over the basin
- Birds flying to and from the basin and over the airfield (defined as runways, taxiways, the
  infield areas, and the approach zones)

The third type listed above links bird-strike hazards with the airport basin. Two levels of
hazardous activity can occur:

- **Type A sighting.** Five or fewer birds fly over the runway or approach zone (up to 300
  feet elevation, the potential strike zone for most aircraft on approach or taking off) or
  land on the airfield while traveling to or from a basin.
TIDAL RESTORATION DEMONSTRATION PROJECT
YEAR 3 ANNUAL MONITORING REPORT

- **Type B sighting.** A bird characterized as a high-hazard species, or a flock of birds of any type, flies over the runway or lands on the airfield while clearly traveling to or from a basin. High strike hazard species include waterfowl, gulls, egrets, herons, raptors, and vultures. Flocks are defined as six or more birds.

2.1.1 Weekly

An hour was spent at each observation point during each weekly survey. Data on bird use of the observed basin and birds flying over the basin were gathered for Basin E from one observation point and the tidal and control basins from the other observation point. At all times throughout the survey, observations of birds flying to or from any of these three basins and over the airfield were recorded. This was done to maximize the time spent observing airfield overflights for each basin, even while surveying an adjacent basin.

2.1.2 Biweekly

The biweekly surveys were conducted to gather data on bird use and airfield overflights elsewhere in the slough. Basins A, B/C/D, and G were surveyed (Appendix B). For Basins A and B/C/D, walking routes were devised that followed the edges of the basins. Observations for Basin A were also recorded from a point on the bluffs above the basin. Basin G was surveyed from one vantage point, rather a walking route, because of limited access to the margins of the basin when surveys began in 2005. The time spent surveying these basins varied; however, the data can be compared with the weekly survey airfield overflight data by determining the number of overflights per hour. To limit variation in survey time, a minimum time to survey each basin was set. At least 50 minutes were spent for each survey of Basin A, and surveys typically ranged from 50 to 60 minutes, from the observation point and the walking route combined. At least 30 minutes were spent surveying Basin B/C/D from the walking route. In most cases, 12 minutes were spent at the observation point for Basin G. Since surveys were conducted every other week, half of the time there were no concurrent figures to compare with weekly surveys. Thus a running average for airfield overflights for these basins was calculated and compared with weekly figures for the tidal basin, the control basin, and Basin E. When comparisons met certain criteria indicating a possible elevated strike potential, the data were examined more closely to determine whether this potential warranted suspending the experiment.

2.2 VEGETATION

URS biologists conducted vegetation transect monitoring at the tidal basin to quantitatively document the progress of vegetation establishment. After construction of the tidal basin was completed, URS biologists established fixed transects in February 2006. These transects have been used over the three-year monitoring and maintenance period to examine the progress of the restoration project. Transects were used to estimate native cover, non-native cover, and bare ground for the entire site, native and non-native cover by transect, and percent native
cover by species. Nine transects were established within the restoration site. See Appendix C for a map of the transect locations and lengths. Three were located on the northern berm, one on the eastern berm, three on the southern berm, and two on the western berm. Each transect began on the top outside edge of the berm and continued down the slope of the basin, ending at the mean waterline. The placement of each transect captured portions of the berms, the tidal basin slopes, and the tidal basin floor. Each transect varied in length, ranging from 13.5 meters to 22.9 meters.

The vegetation monitoring transects were monitored quarterly by URS biologists. Year 1 post-construction monitoring was completed in February, June, and December of 2006. Year 2 post-construction monitoring was completed in January, April, July, and October of 2007. Year 3 post-construction monitoring was completed in February, May, August, and November of 2008. Pre-construction baseline surveys were not conducted since the tidal basin had not yet been constructed. The point-intercept method was used, where plant species were recorded every ten centimeters. In Year 1, vegetation was recorded every five centimeters since vegetation was more sparse than observed in Year 2. If more than two species occurred at a single point, the two most dominant species were recorded. If no species were present, then it was categorized as bare ground which included mulch, thatch, woody debris, and unvegetated soil. Soil conditions were qualitatively documented along the transects as well. Conditions that were recorded included moisture, cracks, salt deposits, thatch, and the presence of wrack lines. The same methodology was used during all three post-construction surveys.

Photographs were taken at each end of the transect to document plant growth and soil conditions (Appendix D). Photographs were also taken at various representative locations to document vegetative growth (Appendix E). Data was analyzed using pivot tables in Microsoft Excel.

2.3 BENTHIC MACROINVERTEBRATES

ECORP was contracted by URS to monitor BMI communities in the tidal basin, control basin, and Tecolotito Creek. ECORP conducted pre-construction baseline surveys in June 2005 to characterize BMI communities. Year 1 post-construction BMI surveys were conducted in May and August of 2006, Year 2 post-construction BMI surveys were conducted in May and August of 2007, and Year 3 post-construction BMI surveys were conducted in May and August of 2008. Samples collected from the basins were used to assess the change in BMI community dynamics between the tidal basin and the control basin. Samples taken from Tecolotito Creek were used to assess the extent of BMI colonization into the tidal basin.

Pre-construction baseline BMI samples were collected at four locations in 2005: 1) Sampling Site 1 in Tecolotito Creek at the bicycle bridge; 2) Sampling Site 2 in Tecolotito Creek at the
end of the ASR berm; 3) Sampling Site 3 within Basin F (the low elevation portion of the basin that corresponded to the future experimental tidal basin); and 4) Sampling Site 4 within Basin F (the high elevation portion of the basin that corresponded to the future control basin). At Sampling Sites 1 and 2, four BMI samples were collected per site. Two samples were taken from shallow water habitat (< 0.4 meters), and two samples were taken from deep water habitat (> 0.5 meters). At Sampling Sites 3 and 4, two samples were collected per site, since only shallow habitat was present.

Post-construction BMI samples were collected at four locations between 2006 and 2008 using the same methodology as the pre-construction baseline survey. Sampling Sites 1 and 2 remained in the same location and the number of samples collected at each site remained the same. Site 3 became the tidal basin, and Site 4 became the control basin (Figure 2). The number of samples collected at Sites 3 and 4 remained the same with two samples collected per site, since only shallow habitat was present. Site 4 was dry during the August 2007 and 2008 sampling events and was not sampled.

Samples were obtained using an Eckman dredge. Each sample consisted of five bottom grabs that were combined prior to the elutriation process (the removal of substances from a mixture by washing and decanting). Each sample was elutriated using a 3 gallon bucket and either a 1.0mm or a 0.5mm mesh sieve. Large organic and inorganic debris were rinsed with water and inspected for presence of BMIs. Samples were placed in 1,000 ml Whirl-Pak® bags with a label noting sample date, site location, and sampling depth. Each sample was preserved using a solution consisting of 70 percent ethanol. Chain-of-Custody forms were completed and samples were logged into the ECORP Bioassessment Laboratory in Rocklin, California following standard operating procedures.

At the laboratory, samples were emptied from Whirl-Pak® plastic bags into plastic trays labeled with numbered grids. The sample was evenly distributed over the tray, and a randomly selected grid or grid portion was removed and placed in a Petri dish. The grid sample was examined for BMIs using a dissecting microscope. All BMIs from the grid or grid portion were enumerated. Additional grids or grid portions were selected from each sample until approximately 300 organisms were obtained or the entire sample was processed if less than 300 organisms were present. BMIs were identified to the lowest determinable taxonomic level (usually genus) except Ostracoda and Oligochaeta, which were left at subclass and class levels, respectively.

Data were entered into a Microsoft Excel spreadsheet designed to calculate biological metrics that provide a detailed assessment of the BMI community. These metrics were calculated and presented as either: count, percentage, or composition of the sample. Counts were enumerations of taxa composition by single taxon or taxa group. Five biological metrics were used to describe the BMI communities: Abundance, Taxa Richness, Percent Insect, Percent Non-insect, and Percent Dominant Taxon. BMI Abundance was calculated by multiplying
the number of organisms per grid portion by the total number of grids. For example, 300 BMIs counted from one grid portion, multiplied by 10 grid portions in the sample, equals an Abundance of 3,000 BMIs. Taxa Richness is a count of the number of taxa in a sample. Percent Insect and Percent Non-insect values represent the percentages of individual insects and non-insects, respectively, per sample. Percent Dominant Taxa is the percentage of the most common taxa in the sample.

2.4 TIDEWATER GOBY

In 2008, fish population-monitoring was added to the suite of monitoring surveys for the Tidal Restoration Demonstration Project to determine species community composition within the tidal basin. A fish species of particular interest was the federally-listed endangered tidewater goby (*Eucyclogobius newberryi*). Tidewater gobies were found during previous surveys within Tecolotito and Carneros creeks during the Tecolotito Creek and Carneros Creek Relocation Project. USFWS protocol presence/absence surveys for tidewater goby consisted of a single (May 19, 2009 survey) and five (October 7, 2009 survey) seine haul(s) using a 1/8 inch mesh beach seine. Fish collected in the beach seine were identified to species, measured (fork length in mm), and immediately returned to the water.

2.5 TIDAL FEATURES

To assess tidal features (hydrology and water quality) in the tidal basin in comparison to Tecolotito Creek, Goleta Slough, and the control basin, URS biologists compiled data from the Tidal Restoration Demonstration Project and from the Airport Stormwater Sampling Project. Data was used from 2004 through 2008 sampling efforts completed by URS and ECORP. Appendix L shows where data was collected, by whom it was collected, and the years in which the data was taken.

The same methodology was used by URS and ECORP to take measurements at each site. A YSI model 556 multi-probe meter was used to collect water quality data. Parameters measured include temperature, salinity, conductivity, total dissolved solids, dissolved oxygen, and pH. At each site where water depth exceeded 0.3 meter, two water quality measurements were obtained. The first measurement was taken just under the water’s surface and the second measurement was taken within 0.5 ft of the substrate bottom. Only one quality measurement was taken at mid-depth if the water depth at the site was less than 0.3 meter deep. A portable turbidimeter (TN-100) was used to analyze turbidity. Current velocity was measured using a Flow Probe FP101, which was also used to determine the depth of the water column. For methodology used for data obtained from the Stormwater Sampling Project please see the corresponding reports (URS 2008c). Photographs were taken at each sampling site prior to taking measurements (Appendix G).
3.1 BIRDS

In Year 3, 107 species of birds were observed during post-construction surveys conducted from December 2007 through November 2008. One hundred forty-five species were observed during post-construction surveys from Year 1 through Year 3. Thirty-seven of the species observed in Year 3 were high-hazard species. High-hazard species were designated according to size prior to conducting pre-construction baseline surveys, and the list of species was altered slightly during Year 2 surveys to apply the basic criterion consistently. Generally, species with a mass greater than that of the American Crow (Corvus brachyrhynchos), such as most waterfowl, herons, egrets, gulls, terns, and raptors, are large enough to be considered high-hazard species (URS 2003b). See Appendix H for a list of bird species observed during Year 3 surveys. See Appendix I for a list of high-hazard species observed during surveys conducted in Years 1, 2, and 3.

3.1.1 Post-construction Surveys, Birds Present in the Basins

Counting all bird species, the total number of individuals for the control basin was much higher than that for the tidal basin in Year 3. In the control basin, 965 birds were observed, about 3 times the total of 359 birds recorded in the tidal basin (Graph 1). The difference in the total numbers of high-hazard individuals was even more dramatic. In the control basin, 487 high-hazard individuals were observed, which was approximately 10 times the 49 observed in the tidal basin. Most of the high-hazard birds in the control basin were waterfowl (ducks and geese) that were attracted to the basin when it contained ponded water (441 of 487). The majority of the high-hazard birds in the tidal basin were herons and egrets (31 of 49), and 17 of the remaining 18 were waterfowl. Over the course of the year, the control basin attracted more individual birds than did the tidal basin, while the tidal basin attracted more birds at times of year when the control basin was dry.

The difference in the number of high-hazard individuals in the control basin versus the tidal basin was mostly due to the high numbers of waterfowl present in the control basin from January through May, when standing water from rainfall covered much of the surface of the control basin (Graph 2). During this period, high-hazard individuals counted in the control basin outnumbered those counted in the tidal basin 463 to 27, respectively. For the next six months, and for December 2007, high-hazard individuals were present in the control basin in low numbers. By comparison, the tidal basin had low, steady numbers of high-hazard individuals year-round, never exceeding 10 birds in an entire month of surveys. Numbers never exceeded 3 for an entire month from July through November, but were slightly higher the rest of the year. High-hazard individuals in the tidal basin did outnumber those in the
GRAPH 1
TOTAL INDIVIDUAL BIRDS,
TIDAL BASIN VS. CONTROL BASIN (YEAR 3)

GRAPH 2
TOTAL INDIVIDUAL BIRDS, HIGH-HAZARD SPECIES,
TIDAL BASIN VS. CONTROL BASIN (YEAR 3)
control basin from July through November, but numbers were very low overall (11 to 2 for the entire five-month period).

The total individuals for all species in the two basins showed trends similar to those for high-hazard individuals over the course of the year. Numbers for the control basin were significantly higher from January to May (852 to 162), when much of the control basin was covered with standing water from rainfall, and the basin therefore attracted greater numbers of waterfowl (Graph 3). Numbers were relatively equal in June (35 in the tidal basin compared to 33 in the control basin), but significantly higher in the tidal basin over the remaining months (162 to 79, in December 2007 and in July through November 2008). The last of the standing water from winter rainfall dried up in June, thus the control basin was less of an attractant for all bird species after this time. Tidal waters are present in the tidal basin year-round, thus this area provides a steady, low-level attractant to certain species, but for few high-hazard species.

**GRAPH 3**

**TOTAL INDIVIDUAL BIRDS, ALL SPECIES, TIDAL BASIN VS. CONTROL BASIN (YEAR 3)**

<table>
<thead>
<tr>
<th>Months Surveyed</th>
<th>Tidal</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec '07</td>
<td>38</td>
<td>27</td>
</tr>
<tr>
<td>Jan (5)</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Feb</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Mar</td>
<td>16</td>
<td>38</td>
</tr>
<tr>
<td>Apr (5)</td>
<td>26</td>
<td>121</td>
</tr>
<tr>
<td>May</td>
<td>28</td>
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<tr>
<td>Jun</td>
<td>19</td>
<td>33</td>
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<tr>
<td>Jul (5)</td>
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<td>8</td>
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<tr>
<td>Aug</td>
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<td>22</td>
</tr>
<tr>
<td>Sep</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Oct (5)</td>
<td>34</td>
<td>9</td>
</tr>
<tr>
<td>Nov</td>
<td>34</td>
<td>9</td>
</tr>
</tbody>
</table>

*Four surveys conducted unless otherwise noted*

3.1.2 Post-construction Surveys, Airfield Overflights

During the course of the surveys, hazard levels were monitored using a measure of overflights involving the basins. The hazard level, or Incident Level, was determined by comparing current conditions in all basins rather than comparing current data with pre-construction data. Incident Levels were measured on a scale from 1, being a lesser hazard
level, to 5, being the most critical. On many weeks, data indicated no hazard in the tidal basin relative to others, thus no hazard level was assigned.

In analyzing the data on airfield overflights, overflights were broken down into two types: Type A and Type B, as described in Section 2.1. By comparing the occurrences of these overflight types across basins, an Incident Level was assigned weekly, permitting evaluation of current bird-strike potential. At no time in Year 3 did overflight incidents recorded meet the criteria requiring evaluation of the study for potential termination. In Year 3, an Incident Level of 5 was recorded 2 times, compared to 8 times in Year 2 and 11 in Year 1. An Incident Level of 5 occurs when the number of Type A or B sightings in the tidal basin exceeds those of the control basin and all of the other basins surveyed. Incident Level 5 was recorded on the following dates in Year 1: December 22, 2005, January 5, March 1, May 18, July 5, July 12, August 16, September 14, September 28, October 12, and October 25, 2006. Incident Level 5 was recorded on the following dates in Year 2: November 8 and December 20, 2006, January 18, January 31, February 23, March 1, June 27, and November 7, 2007. On all but one of these dates, an Incident Level of 5 was recorded because of a single type A overflight involving the tidal basin, in a week when no Type A overflights were recorded elsewhere. In Year 3, the only dates on which an Incident Level of 5 was recorded were December 19, 2007, and September 3, 2008. The December 19th Incident Level 5 was also due to a single Type A overflight recorded in the tidal basin. The September 3rd Incident Level 5 occurred due to an apparently anomalous situation in which 4 separate overflights were recorded that involved Killdeer (*Charadrius vociferus*) either landing in or taking off from the basin. These 4 overflights accounted for approximately 67 percent (4 of 6) of the Type A overflights involving the tidal basin in Year 3, and for approximately 37 percent (4 of 11) of all the significant overflights involving the tidal basin in that time span. Aside from this date, Killdeer were recorded only twice in the tidal basin in the last four and one-half months of surveys, with only one bird recorded each time.

Graphs 4 and 5 show how the tidal basin, the control basin, and Basin E (the three basins surveyed weekly) compare in terms of total overflights recorded. While relatively few significant overflights occurred at any of the three locations, the control basin was associated with more of both Type A and Type B overflights than either the tidal basin or Basin E. However, Type A overflights occurred with relatively equal frequency over the three areas, while Type B overflights were much more frequent in the control basin than in the tidal basin or Basin E. Another way to compare numbers of overflights is to adjust for basin size, since the size of the basins varies significantly (1.73 acres for the tidal basin; 2.98 for the control basin; and 8.55 for Basin E). This is done by dividing overflights by the number of acres for each basin. When adjusted for basin size, significant overflights for the tidal and control basins occurred at virtually identical rates over the course of the year (0.0638 per hour per acre in the control basin vs. 0.0636 per hour per acre in the tidal basin). The more hazardous Type B overflights occurred with greater frequency per acre in the control basin; Type A overflights occurred more often in the tidal basin (Graph 6). The rates of both types
GRAPH 4
TYPE A OVERFLIGHTS BY BASIN (YEAR 3)

GRAPH 5
TYPE B OVERFLIGHTS BY BASIN (YEAR 3)
of overflights for Basin E, which is nontidal and accumulates relatively little standing water in winter, are well below those for the tidal and control basins when adjusted for basin size.

All of the type A and B overflights involving the control basin occurred from mid-March to late May, when this area still held large amounts of standing water left over from the winter rains. Bird activity during this period was also influenced by the presence of spring migrants and local breeding birds. Breeding-related activity had a particular impact on the recording of type A and B overflights involving the control basin in Year 3. Of the 10 Type B overflights, 7 incidents (70 percent) involved ducks that breed in the area and that are attracted to the standing water present in the control basin in spring. Mallards (Anas platyrhynchos) accounted for 6 of these incidents, while Gadwalls (Anas strepera) accounted for the other. With both of these species, males occasionally take part in aerial pursuits of pairs flying through the area (Drilling et al. 2002; Leschack et al. 1997). In Year 3, these pursuits often took ducks occupying the control basin over runway 7-25. Other type B overflights associated with the control basin involved a single Canada Goose (Branta canadensis), a single Great Egret (Ardea alba), and a flock of Tree Swallows (Tachycineta bicolor) drinking water from the basin. Of the 9 Type A overflights associated with the control basin, 6 (approximately 67 percent) involved Red-winged Blackbirds (Agelaius phoeniceus). Some, if not all, of these incidents involved birds gathering food in the control basin and carrying it to nesting sites north of runway 7-25. Other species involved in type A overflights associated
with the control basin were the White-tailed Kite (*Elanus leucurus*), Killdeer, and Long-billed Dowitcher (*Limnodromus scolopaceus*).

Compared with the control basin, overflights involving the tidal basin and Basin E were more spread out over the course of the year. The 11 tidal basin overflights occurred on 8 different dates from December 19, 2007, to October 2, 2008. Killdeer accounted for 5 of the 6 Type A incidents, while Cassin’s Kingbird accounted for the other. Great Egrets (3 incidents) and Mallards (2 incidents) accounted for all of the Type B incidents. The 11 Basin E overflights occurred on 9 different dates from February 7 to October 30. Western Meadowlarks (*Sturnella neglecta*) and Red-winged Blackbirds (3 incidents per species) accounted for 6 of the 8 Type A incidents (75 percent), while the other two involved a single Mourning Dove (*Zenaida macroura*) and a single Belding’s Savannah Sparrow (*Passerculus sandwichensis beldingi*). Mallards accounted for 2 of the 3 Type B incidents, while a flock of 9 Western Meadowlarks accounted for the other.

Graph 7 illustrates the number of overflights per hour in all basins, including those surveyed biweekly. Not adjusting for area, Basins A and G had far more of both Type A and Type B overflights than the other basins. Basin A, the main tidal area of Goleta Slough, had 0.48 Type A overflights per hour and 0.88 Type B overflights per hour. Nontidal Basin G had 1.16 Type A overflights per hour and 0.39 Type B overflights per hour. Except for Type B overflights involving Basin B/C/D (0.2 per hour), no other basin was associated with more than 0.1 overflight per hour of either type of overflight during Year 1. However, adjusted for area, the rates for both Type A and Type B overflights were lower in Basin A compared with most basins surveyed (Graph 7). The 22 Type B overflights associated with Basin A involved the Canada Goose (2 incidents), Gadwall (5), Mallard (2), Great Blue Heron (*Ardea herodias*; 2), Double-crested Cormorant (*Phalacrocorax auritus*; 1), Great Egret (5), Black-crowned Night-Heron (*Nycticorax nycticorax*; 1), Turkey Vulture (*Cathartes aura*; 1), Least Sandpiper (*Calidris minutilla*; 1), Cliff Swallow (*Petrochelidon pyrrhonota*; 1), and a combined flock of Semipalmated Plovers (*Charadrius semipalmatus*) and Western Sandpipers (*Calidris mauri*; 1). Most of these overflights occurred in the first seven months of Year 3, with only two coming after June 5, 2008, and none occurring in the final six surveys, after September 12.

The per hour overflight rates for Basin G are the highest of any basin when adjusted for area (Graph 6). The rate for Type A overflights, at 0.134 per hour per acre, was more than three times that of the basin with the next highest rate, the tidal basin. But the Year 3 sample size was small for Basin G (5.19 hours of surveying) and the findings were not in line with those from previous years. In Years 1 and 2 combined, only one Type A and no Type B overflights were recorded in this area. Two of the 6 Type A overflights associated with Basin G in Year 3 involved single Belding’s Savannah Sparrows (both on November 21, 2008, the final biweekly survey). The remaining 4 involved single overflights by the Greater Yellowlegs (*Tringa melanoleuca*), Least Sandpiper, Yellow-rumped Warbler (*Dendroica coronata*), and
Western Meadowlark. The 2 type B overflights involved flocks of small birds: Western Meadowlarks and a combined flock of Western and Least Sandpipers. The latter species and the Greater Yellowlegs were attracted to a pool that formed in winter next to the service road after the configuration of the basin was altered as part of the extension of runway 7-25. Pooling of water in this location was not observed to occur before the runway extension.

Basin B/C/D was associated with no Type A and 3 Type B incidents in 14.78 hours of surveying. Two of these overflights occurred on February 15 and involved flocks of small birds: 8 American Pipits (Anthus rubescens) and 9 Western Meadowlarks. The other involved a single Great Blue Heron on January 5, 2008.

3.1.3 Comparison to Pre-construction Surveys, Birds Present in the Basins

Baseline surveys conducted before the construction of the tidal basin were not year-round as were the post-construction surveys. Using the same methods as used for the post-construction surveys, the first round of surveys was conducted from March through May 2004 and a second round was conducted from December 2004 through July 2005. There were no pre-construction surveys for the months of August through November, when non-tidal areas are generally dry.
Graph 8 shows the number of high-hazard birds, number of waterfowl, and total number of birds observed in Basin F (comprising both the tidal and control basins) before and after construction, for the months of December to July. Numbers for all birds, high-hazard species, and waterfowl were all significantly lower in Year 3 than in 2004–2005, before construction. Year 3 numbers were high in all categories compared to Year 2 (2006–2007), but were lower than those for Year 1. As in previous years, most of the high-hazard species recorded in the area were waterfowl.

**GRAPH 8**

**TOTAL INDIVIDUAL BIRDS, BASIN F (2004 – 2008)**

Graphs 9 and 10 show the seasonal variation in bird activity during the pre-construction periods and each of the post-construction periods from Year 1 through Year 3. The average number of individual birds per survey for all species combined was highly variable before construction and continued to be so afterward (Graph 9). Year 3 numbers were overall higher than Year 2 numbers, and were higher in every month except December, April, September, and October. However, numbers for both Year 2 and Year 3 were generally lower than numbers for the pre-construction periods and for Year 1. After an initial spike in numbers after construction, the total number of birds seems to have stabilized at a level lower than occurred before construction. In both the pre-construction surveys of 2004–2005 and in Year 1 after construction, numbers surpassed 100 per survey in two months, while in Years 2 and 3 they never averaged more than 80 in a month.

The number of high-hazard individuals was also higher in Year 3 than in Year 2, and reached a level comparable to that of Year 1 throughout the winter and spring months (Graph 10).
GRAPH 9
AVERAGE NUMBER OF INDIVIDUAL BIRDS PER SURVEY,
ALL SPECIES, BASIN F (2004 – 2008)

GRAPH 10
AVERAGE NUMBER OF INDIVIDUAL BIRDS PER SURVEY,
HIGH-HAZARD SPECIES, BASIN F (2004 – 2008)
However, the numbers of high-hazard individuals have decreased since tidal basin construction during all of the high-volume months from January through May.

3.1.4 Comparison to Pre-construction Surveys, Airfield Overflights

Airfield overflights in the former Basin F (the tidal and control basins combined) increased significantly in the first year of surveys following construction; however, they decreased considerably in Year 2 and dropped again slightly in Year 3 (Graph 11). In Year 3, both type A and type B overflights for the months of July–December were lower than they were during the pre-construction surveys of December 2004–July 2005 (Graph 12). In Year 3, the number of airfield overflights associated with the former Basin F reached its lowest amount.

GRAPH 11
OVERFLIGHTS PER HOUR, BASIN F (2005 – 2008)

3.1.5 Special-status Taxa

Belding’s Savannah Sparrow (*Passerculus sandwichensis beldingi*), present in Goleta Slough year-round, is listed as endangered under the California Endangered Species Act (CDFG 2008a, 2008b). This taxon breeds commonly in Basins A and B/C/D, is less common in Basin E, and occurs sporadically in the tidal and control basins. Compared to the pre-construction surveys of December 2004–July 2005, Belding’s Savannah Sparrow numbers dropped drastically after construction (Table 1). They recovered somewhat in Years 2 and 3,
but remained below pre-construction levels. This is a disappointment, given the creation of new habitat that would appear to be suitable for this taxon, which breeds in the dense pickleweed (*Salicornia virginica*) that covers the tidal Basin. As the pickleweed matures, Belding’s Savannah Sparrows will potentially find the area more suitable for breeding and foraging.

Three bird species of special concern were also recorded during the Year 3 surveys (CDFG 2008a) (See Appendix H). However, all of these are protected only during their breeding period, and none of them are known to breed in the Goleta area. These species are the Northern Harrier (*Circus cyaneus*), resident in the area in fall and winter; the Loggerhead Shrike (*Lanius ludovicianus*), present in Goleta Slough from late summer through winter; and the Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), recorded in Year 3 only on May 1 in the control basin and May 9 over Basin B/C/D.

### 3.2 VEGETATION

In Year 3, 10 native plant species and six non-native plant species were documented along the nine transects surrounding the tidal basin. In Year 2, 11 native plant species and five non-native plant species were documented. In Year 1, 13 native plant species and 15 non-native
TABLE 1
NATIVE PLANT SPECIES LIST (2006 – 2008)

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Year 1 2006</th>
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<td>Atriplex lentiformis¹</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Frankenia salina¹</td>
<td>Alkali heath</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Heliotropium curassaviculum¹</td>
<td>Heliotrope</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Malvella leprosa</td>
<td>Alkali mallow</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Phacelia spp.</td>
<td>Phacelia spp.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salicornia virginica¹</td>
<td>Pickleweed</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Salix lasiolepis</td>
<td>Arroyo willow</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Scrophularia californica</td>
<td>Bee plant</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solanum douglasii</td>
<td>Douglas nightshade</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urtica dioica</td>
<td>Stinging nettle</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Verbena lasiostachys¹</td>
<td>Verbena</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Species that were seeded or sprigged.

Plant species were documented. Table 1 shows the species list of native plants observed along the transects in Year 1, Year 2, and Year 3. Five native species were seeded or sprigged (see footnote of Table 1). Six native species seen in Year 3 voluntarily colonized the site. Coast goldenbush, southern tarplant, and California sagebrush were seeded in the area, but not observed along the transects in either Year 1, Year 2, or Year 3; however, California sagebrush was observed on-site. See Appendix J for a species list of non-native plants observed along the transects in Year 3. See Appendix C for transect locations.

Four previously present annual species were not observed in Year 3, including horseweed (*Conyza canadensis*), phacelia spp. (*Phacelia* spp.), Douglas nightshade (*Solanum douglasii*), and stinging nettle (*Urtica dioica*). Two previously present perennial species were not observed in Year 3, including bee plant (*Scrophularia californica*) and verbena (*Verbena lasiostachys*). This may have been due to unfavorable conditions for these plants.

### 3.2.1 Percent Cover by Type of Cover

Native vegetation steadily increased in Year 3, with peak native coverage in September and November. In Year 3, the average percent native cover increased from 52 percent in February...
to 65 percent in November. At the end of Year 2 the average percent native cover was 48 percent, resulting in a positive 74 percent change\(^1\) from the end of Year 2 to the end of Year 3. The average percent native cover for Year 3 was 60 percent, while in Year 2 it was 46 percent. Visual observations of the site indicate that the basin bottom and the top of the berms have dense cover, and that the slopes of the basin are less vegetated (See photographs in Appendices D and E). Graph 13 shows the average percent cover by month for Year 3 for all types of cover. Table 2 shows the average percent cover by Year for all types of cover.

**GRAPH 13**

**AVERAGE PERCENT VEGETATIVE COVER BY MONTH (YEAR 3)**

Non-native plant cover was very low in Year 3. The average percent non-native cover was one percent for most monitoring events, which was also the peak amount for Year 3. Non-native cover was also low in Year 2. The Year 3 and Year 2 average percent non-native cover was one percent.

Bare ground cover steadily decreased in Year 3, with peak coverage in February. In Year 3, the average percent bare ground cover decreased from 43 percent in February to 38 percent in November. At the end of Year 3 the average percent bare ground cover was 38 percent, resulting in a negative 27 percent change from the end of Year 2 to the end of Year 3. The

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\(^1\) Percent change was used as a comparative analysis between monitoring events. Percent change is the net change between two values, which can show a percent increase or decrease (\(D\% = 100 \times \frac{X_{\text{final}} - X_{\text{initial}}}{X_{\text{initial}}}\)).
TABLE 2
AVERAGE PERCENT COVER BY YEAR (2006 – 2008)

<table>
<thead>
<tr>
<th></th>
<th>Exotic</th>
<th>Native</th>
<th>Bare Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>February 2006</td>
<td>1</td>
<td>1</td>
<td>97</td>
</tr>
<tr>
<td>June 2006</td>
<td>9</td>
<td>15</td>
<td>76</td>
</tr>
<tr>
<td>September 2006</td>
<td>2</td>
<td>30</td>
<td>68</td>
</tr>
<tr>
<td>Year 1 Average</td>
<td>4</td>
<td>15</td>
<td>80</td>
</tr>
<tr>
<td><strong>Year 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>January 2007</td>
<td>0</td>
<td>36</td>
<td>63</td>
</tr>
<tr>
<td>April 2007</td>
<td>3</td>
<td>46</td>
<td>50</td>
</tr>
<tr>
<td>July 2007</td>
<td>0</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>October 2007</td>
<td>0</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>Year 2 Average</td>
<td>1</td>
<td>46</td>
<td>53</td>
</tr>
<tr>
<td><strong>Year 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>February 2008</td>
<td>1</td>
<td>52</td>
<td>43</td>
</tr>
<tr>
<td>May 2008</td>
<td>1</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>August 2008</td>
<td>1</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>November 2008</td>
<td>0</td>
<td>65</td>
<td>38</td>
</tr>
<tr>
<td>Year 3 Average</td>
<td>1</td>
<td>60</td>
<td>39</td>
</tr>
</tbody>
</table>

Note: 100% cover is the maximum amount of cover achievable for the site. In instances where cover does not add up to 100%, the remaining cover consists of unidentifiable plant species.

Year 3 average percent cover was 39 percent, while in Year 2 it was 53 percent. Bare ground included mulch, thatch, woody debris, and unvegetated soil.

3.2.2 Percent Cover by Native Species

Pickleweed was the dominant species throughout Year 3, increasing from 36 percent cover in the beginning of the year to 40 percent cover at the end of the year. Quailbush (Atriplex lentiformis) was the second dominant species, increasing from 10 percent cover in the beginning of the year to 16 percent cover at the end of the year. Cover by other species at the restoration site remained below 5 percent each. Graph 14 shows the average percent cover of each native species observed in Year 3.

3.2.3 Percent Native Cover by Restoration Technique

The northern berm of the tidal basin was actively restored with native seeds, while the southern berm was not. Weeding occurred on both berms. To illustrate the difference in the
restoration techniques, a comparison of the native cover of both berms was conducted (Graph 15). Data from Transects 2, 3, and 4 were combined for the restored northern berm, and data from Transects 7, 8, and 9 were combined for the un-restored southern berm. The restored northern berm continually had higher native cover. In January, the northern berm had 77 percent native cover. By November, the northern berm had a higher amount of native cover at 85 percent.
The biodiversity was similar for each berm, each having four species present; however, the restored berm had significant cover from only one species. The native species found along the restored berm were pickleweed, spearscale, quailbush, and alkali heath. Pickleweed had the highest average cover of 79 percent, followed by quailbush with 2 percent average cover. The native species found along the un-restored berm were pickleweed, quailbush, Coulter's horseweed and coyote brush. Quailbush had the highest average cover of 24 percent, followed by pickleweed with 12 percent average cover.

At the end of Year 3 the average percent native cover along the restored berm was 72 percent, resulting in a 18 percent change increase\(^2\) from the end of Year 2 to the end of Year 3. At the end of Year 3 the average percent native cover along the un-restored berm was 28 percent, resulting in a 43 percent change increase from the end of Year 2 to the end of Year 3.

\(^2\) Percent change was used as a comparative analysis between monitoring events. Percent change is the net change between two values, which can show a percent increase or decrease (\(D\% = 100 \times \frac{X_{\text{final}} - X_{\text{initial}}}{X_{\text{initial}}}\)).
3.3 BENTHIC MACROINVERTEBRATES

The Tidal Basin (Site 3) had the highest BMI Abundance in 2008, with 12,096 organisms collected in August. Tecolotito Creek at the ASR confluence (Site 2) had the lowest BMI Abundance, with 354 organisms collected in May. Within the tidal basin, the highest BMI Abundance occurred in August with 12,096 organisms and the lowest Abundance occurred in May with 1,568 organisms. The mean BMI Abundance for each site was 7,533 organisms per sample for the tidal basin (Site 3), 3,288 organisms per sample for Tecolotito Creek at the bicycle bridge (Site 1), and 4,670 organisms per sample for Tecolotito Creek at the ASR channel confluence (Site 2). The mean BMI Abundance of 2,067 organisms for the control basin (Site 4) is for the May sampling event only; the basin was dry during the August sampling effort and was not sampled. Table 3 shows the BMI Abundance for 2005 through 2008. BMI Abundance was markedly higher in the 0.5-mm sieved samples than in the 1.0-mm sieved samples for Sites 1 through 3 due primarily to the high numbers of Ostracoda (a dominant taxon) that pass through the 1.0-mm sieve but are retained in the 0.5-mm sieve. In contrast, BMI Abundance in the control basin was greater in the 1.0-mm sieved sample than in the 0.5-mm sample due to the presence of larger size freshwater ostracods (a dominant taxon) which were easily retained in the 1.0-mm sieve. See Figure 2 for sampling site locations.

Taxa Richness was greatest in the control basin, with a mean of 10.0 taxa per sampling event (May only); and lowest in the tidal basin, with a mean of 6.5 taxa per sampling event. Tecolotito Creek at the ASR channel had a mean Taxa Richness value of 6.6, and Tecolotito Creek at the bicycle bridge had a mean Taxa Richness of 7.0. Table 4 shows the BMI Taxa Richness.

In Year 3, salinity tolerant non-insect taxa including the amphipod Corophium sp., the polychaete Polydora sp., Oligochaeta, and Ostracoda dominated the Tecolotito Creek sites and the tidal basin site. A total of five taxa (Corophium sp., Polydora sp., Hyale sp., Ostracoda, and Oligochaeta) were collected at both the tidal channel and restored tidal basin sites. In contrast, only Oligochaeta were collected from both the tidal channel and control basin sites. The dominant taxon in the samples collected in the tidal basin during the May 2008 sampling event was Ostracoda, and Ostracoda and Polydora sp. were co-dominant in the samples collected during the August 2008 sampling event. At the Tecolotito Creek estuary site, Corophium sp. was the dominant taxon in the samples, followed by Ostracoda. The dominant taxa collected from the control basin in May 2008 included a freshwater ostracod (in the family Cyprididae) and Oligochaeta. A distinction is made between insect and non-insect taxa to demonstrate differences in BMI community structure in fresh and estuarine (brackish) water environments. There are relatively few insect taxa that can tolerate salinities above 10 ppt, hence one would expect that the tidally-influenced areas would have fewer insect taxa than freshwater marsh habitat. Therefore, the reduced number of insect taxa in the tidal basin compared to the control basin suggests that BMI community structure in the
<table>
<thead>
<tr>
<th>Site Information (Depth and Sieve Size)</th>
<th>Sampling Date and Estimated Abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>06/30/05</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (shallow 0.5 mm)</td>
<td>1,760</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (shallow 1.0 mm)</td>
<td>501</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (deep 0.5 mm)</td>
<td>1,920</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (deep 1.0 mm)</td>
<td>915</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (shallow 0.5 mm)</td>
<td>1,933</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (shallow 1.0 mm)</td>
<td>972</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (deep 0.5 mm)</td>
<td>1,400</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (deep 1.0 mm)</td>
<td>600</td>
</tr>
<tr>
<td>Site 3 – Tidal Basin (Basin F) (0.5 mm)</td>
<td>1,120</td>
</tr>
<tr>
<td>Site 3 – Tidal Basin (Basin F) (1.0 mm)</td>
<td>149</td>
</tr>
<tr>
<td>Site 4 – Control Basin (Basin F) (0.5 mm)</td>
<td>89</td>
</tr>
<tr>
<td>Site 4 – Control Basin (Basin F) (1.0 mm)</td>
<td>31</td>
</tr>
</tbody>
</table>

1 Shallow sites have depths < 0.4 meters and deep sites have depths > 0.5 meters.
2 Excessive silt and fine particulate organic matter (<1 mm) prohibited sample processing.
3 Samples were not taken due to dry conditions without ponded water.
tidal basin is representative of tidally-influenced habitat. Table 5 shows the percent insect and percent non-insect taxa and Table 6 shows the percent dominant taxa for 2005 though 2008. See Appendix K for a BMI species and location list.

### TABLE 5
**BENTHIC MACROINVERTEBRATES**
**PERCENT INSECT AND NON-INSECT TAXA (2005 – 2008)**

<table>
<thead>
<tr>
<th>Site Information (Depth and Sieve Size)</th>
<th>Sampling Date and Percent Insect/Percent Non-insect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>06/30/05</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (shallow 0.5 mm)</td>
<td>0/100</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (shallow 1.0 mm)</td>
<td>0/100</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (deep 0.5 mm)</td>
<td>0/100</td>
</tr>
<tr>
<td>Site 1 – Tecolotito Creek – Bridge (deep 1.0 mm)</td>
<td>0/100</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (shallow 0.5 mm)</td>
<td>0.3/99.7</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (shallow 1.0 mm)</td>
<td>0/100</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (deep 0.5 mm)</td>
<td>0.6/99.4</td>
</tr>
<tr>
<td>Site 2 – Tecolotito Creek – ASR (deep 1.0 mm)</td>
<td>4.7/95.3</td>
</tr>
<tr>
<td>Site 3 – Tidal Basin (Basin F) (0.5 mm)</td>
<td>2.9/97.1</td>
</tr>
<tr>
<td>Site 3 – Tidal Basin (Basin F) (1.0 mm)</td>
<td>89.3/10.7</td>
</tr>
<tr>
<td>Site 4 – Control Basin (Basin F) (0.5 mm)</td>
<td>42.7/57.3</td>
</tr>
<tr>
<td>Site 4 – Control Basin (Basin F) (1.0 mm)</td>
<td>32.3/67.7</td>
</tr>
</tbody>
</table>

1 Shallow sites have depths < 0.4 meters and deep sites have depths > 0.5 meters.
2 Excessive silt and fine particulate organic matter (<1 mm) prohibited sample processing.
3 Samples were not taken due to dry conditions without ponded water.

#### 3.4 TIDEWATER GOBY

Five fish species were captured during the combined 2008 presence/absence beach seine surveys conducted in the tidal basin. Fish captured during the May sampling event included longjaw mudsucker (*Gillichthys mirabilis*), arrow goby (*Clevelandia ios*), topsmelt
# TABLE 6

**BENTHIC MACROINVERTEBRATES**  
**PERCENT DOMINANT TAXA (2005 – 2008)**

| Site Information (Depth and Sieve Size)
|---|---|
| **Site 1 – Tecolotitio Creek – Bridge**  
(shallow 0.5 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Corophium sp. | 56.8 | 63.9 | 62.2 | 61.1 | 68.3 | 71.3 | 45.5 |
| Oligochaeta | | | | | | | |

| Site 1 – Tecolotitio Creek – Bridge  
(shallow 1.0 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Corophium sp. | 61.0 | 84.9 | 64.1 | 61.4 | 42.2 | 50.8 | 44.6 |
| Oligochaeta | | | | | | | |

| Site 1 – Tecolotitio Creek – Bridge  
(deep 0.5 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Corophium sp. | 59.4 | 64.3 | 59.9 | 54.7 | 59.3 | 57.7 | 56.0 |
| Oligochaeta | | | | | | | |

| Site 1 – Tecolotitio Creek – Bridge  
(deep 1.0 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Corophium sp. | 66.6 | 95.2 | 55.5 | 94.3 | 81.2 | 90.6 | 52.9 |
| Oligochaeta | | | | | | | |

| Site 2 – Tecolotitio Creek – ASR  
(shallow 0.5 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Corophium sp. | 59.6 | 81.8 | 71.6 | 42.2 | 52.7 | 60.3 | 38.3 |
| Ostracoda | | | | | | | |

| Site 2 – Tecolotitio Creek – ASR  
(shallow 1.0 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Corophium sp. | 75.0 | 66.4 | 51.1 | 49.3 | 61.3 | 46.7 | 26.3 |
| Oligochaeta | | | | | | | |

| Site 2 – Tecolotitio Creek – ASR  
(deep 0.5 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Corophium sp. | 78.6 | 80.0 | 61.4 | 51.6 | 56.0 | 45.5 | 42.1 |
| Ostracoda | | | | | | | |

| Site 2 – Tecolotitio Creek – ASR  
(deep 1.0 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Spionidae | 44.7 | 61.1 | 53.7 | 57.5 | 85.5 | 56.0 | 57.4 |
| Oligochaeta | | | | | | | |

| Site 3 – Tidal Basin (Basin F) (0.5 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Physa sp. | 82.5 | 76.7 | 80.7 | 51.4 | 53.7 | 89.8 | 67.0 |
| Oligochaeta | | | | | | | |

| Site 3 – Tidal Basin (Basin F) (1.0 mm) | 06/30/05 | 05/04/06 | 08/24/06 | 05/29/07 | 08/21/07 | 5/20/2008 | 8/13/2008 |
| Chironomidae | 87.9 | 60.1 | 22.6 | 39.1 | 50.3 | 33.3 | 24.0 |
| Oligochaeta | | | | | | | |

---

S:\_Proj\SB Airport\Tidal Basin Report 2008\final\Year 3 Report.doc 3-22
<table>
<thead>
<tr>
<th>Site Information</th>
<th>Sampling Date and Percent Dominant Taxon</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Depth and Sieve Size)</td>
<td>06/30/05 05/04/06 08/24/06 05/29/07 08/21/07 5/20/2008 8/13/2008</td>
</tr>
<tr>
<td>Site 4 – Control Basin (Basin F) (0.5 mm)</td>
<td>30.3 41.4 51.1 N/A (silt/FPOM) N/A (dry) 81.7 N/A (dry)</td>
</tr>
<tr>
<td>Physa sp.</td>
<td>Cyprididae</td>
</tr>
<tr>
<td>Hyalella</td>
<td></td>
</tr>
<tr>
<td>Cyprididae</td>
<td></td>
</tr>
<tr>
<td>Site 4 – Control Basin (Basin F) (1.0 mm)</td>
<td>41.9 60.1 80.3 36.4 N/A (dry) 43.8 N/A (dry)</td>
</tr>
<tr>
<td>Physa sp.</td>
<td>Cyprididae</td>
</tr>
<tr>
<td>Hyalella</td>
<td>Oligochaeta</td>
</tr>
<tr>
<td>Oligochaeta</td>
<td></td>
</tr>
</tbody>
</table>

1. Shallow sites have depths < 0.4 meters and deep sites have depths > 0.5 meters.
2. Excessive silt and fine particulate organic matter (<1 mm) prohibited sample processing.
3. Samples were not taken due to dry conditions without ponded water.
(Atherinops affinis), and mosquitofish (Gambusia affinis). Fish captured during the October sampling event included arrow goby, California killifish (Fundulus parvipinnis), and mosquitofish. Table 7 provides a summary of fish species and numbers captured during the May 20 and October 6, 2008 sampling events. Tidewater goby (Eucyclogobius newberryi) were not captured during either sampling event.

**TABLE 7**

**TIDAL BASIN FISH SPECIES COMPOSITION (YEAR 3)**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Fish Species and Number Captured</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5/20/2008</td>
</tr>
<tr>
<td>Longjaw mudsucker</td>
<td>Gillichthys mirabilis</td>
<td>40</td>
</tr>
<tr>
<td>Arrow goby</td>
<td>Clevelandia ios</td>
<td>2</td>
</tr>
<tr>
<td>Topsmelt</td>
<td>Atherinops affinis</td>
<td>1</td>
</tr>
<tr>
<td>Mosquitofish</td>
<td>Gambusia affinis</td>
<td>12</td>
</tr>
<tr>
<td>California killifish</td>
<td>Fundulus parvipinnis</td>
<td>0</td>
</tr>
<tr>
<td>Total Individuals</td>
<td></td>
<td>55</td>
</tr>
</tbody>
</table>

**3.5 TIDAL FEATURES**

Water quality values taken from within the tidal basin were fairly similar to those observed in Tecolotito Creek just outside the tidal basin, with conductivity and salinity values for the two sites differing by approximately 20 percent. Features such as depth and current velocity were also very similar. Table 8 provides the average values for water quality parameters for the different sites for 2004 through 2008. See Appendix L for sampling site locations.

Table 8 also provides the percent change between the different sites for each of the water quality parameters. The first comparison is between the brackish water values from the post-construction tidal basin compared to those at Tecolotito Creek. It is the most vital comparison for determining whether or not the Santa Barbara Airport is affecting water quality within the tidal basin as the two sites should have similar water quality values since they are both composed of brackish water. The second row compares the creek (brackish water) values for pre-construction to post-construction at the tidal basin, and the values are expected to be similar since it compares the same location. The third row compares the freshwater creek sites pre-construction to post-construction, with the values expected to be similar since it is again comparing the same location. The last row compares the freshwater at the control basin to the brackish water at the tidal basin. The values are expected to be different since the water sources differ, with the control basin water derived mainly from the creeks, while the tidal basin has water from the ocean mixed in it.
## TABLE 8
### COMPARISON OF AVERAGE WATER QUALITY VALUES (2004 – 2008)

<table>
<thead>
<tr>
<th></th>
<th>Site Depth (ft)</th>
<th>Current Velocity (ft/s)</th>
<th>Temperature (°C)</th>
<th>Conductivity (μS/cm)</th>
<th>Dissolved Oxygen (mg/L)</th>
<th>pH (pH Units)</th>
<th>Salinity (ppt)</th>
<th>Total Dissolved Solids (g/L)</th>
<th>Turbidity (NTU)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-construction</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Freshwater (Basin E/F)</td>
<td>0.23</td>
<td>0.01</td>
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<td>3,950</td>
<td>10.40</td>
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<td>28,950</td>
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<td><strong>Post-construction</strong></td>
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<td>0.01</td>
<td>20.28</td>
<td>2,369.40</td>
<td>5.32</td>
<td>7.92</td>
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<td>1.75</td>
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<tr>
<td>Tidal Basin – BW (TS1, BMI3, TWG7)</td>
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<td>0.15</td>
<td>22.93</td>
<td>45,140.92</td>
<td>11.14</td>
<td>8.34</td>
<td>29.88</td>
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<td>Tecolotito Creek – BW (TS2, BMI1, BMI2, CON-4, CON-5, TEC-2)</td>
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<td>0.25</td>
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<td>37,442.93</td>
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<td><strong>Percent Change</strong>(^1)</td>
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<tr>
<td>Tidal Basin vs. Tecolotito Creek (post-construction)</td>
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<td>-14%</td>
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<td>-19%</td>
<td>-21%</td>
<td>-10%</td>
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<tr>
<td>Pre-construction vs. post-construction (Brackish water)</td>
<td>12%</td>
<td>56%</td>
<td>172%</td>
<td>6%</td>
<td>51%</td>
<td>68%</td>
<td>163%</td>
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<td></td>
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<td>Pre-construction vs. post-construction (Freshwater)</td>
<td>-0.1%</td>
<td>-40%</td>
<td>-49%</td>
<td>-7%</td>
<td>-42%</td>
<td>-38%</td>
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<tr>
<td>Freshwater vs. Brackish water (post-construction)</td>
<td>13%</td>
<td>1,805%</td>
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<td>5%</td>
<td>2154%</td>
<td>1623%</td>
<td>N/A</td>
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<td></td>
</tr>
</tbody>
</table>

N/A = not applicable.
FW = Freshwater.
BW = Brackish water.

\(^1\) Percent change is the net change between two values, which can show a percent increase or decrease (D\% = 100 (X\(_{\text{final}}\) – X\(_{\text{initial}}\))/ X\(_{\text{initial}}\)).
All of the percent change values comparing the tidal basin to Tecolotito Creek are small, which is what we expected since the water sources are the same for each location, but could have differed if the Santa Barbara Airport was adversely impacting the tidal basin through water runoff or by altering the water course. The biggest difference in values between the two sites was for the salinity and total dissolved solids parameters, both having values of around negative 20 percent, which means Tecolotito Creek has less salinity and dissolved solids. The difference could be attributable to the creek location being a larger tributary than the tidal basin, creating more exchange and a larger source of water at the creek that could dilute the salinity and total dissolved solids values. Evidence for the sites having different characteristics is shown in the site depth and current velocity being greater for creek.

There largest difference in values comparing the brackish water pre-construction to the tidal basin was in dissolved oxygen, 172 percent, and the smallest difference was for pH, 6 percent. The values should be similar, but the difference in dissolved oxygen could be due to the tidal basin post-construction having a greater depth.

The largest difference in values comparing the freshwater tidal basin pre-construction to the freshwater control basin post-construction was in dissolved oxygen, negative 49 percent, and the smallest difference in values was in temperature, negative 0.1 percent. The values were expected to be similar, but the difference could be attributed to the control basin post-construction being more closed off from being influenced by other water sources, making the water in the control basin exhibit a greater degree of freshwater characteristics such as a lower value for dissolved oxygen.

The water quality values for the control basin post-construction were found to be very different than those for Tecolotito Creek, which was to be expected. The largest difference was for salinity, 2,154 percent, the smallest difference was for pH, 5 percent. The small difference in pH is actually not unexpected as there is not a big difference between the range of pH for freshwater (6 to 8) and brackish water (7.5 to 8.5).
4.1 BIRDS

The number of all birds in Year 3 increased compared to Year 2, but was still lower when compared to Year 1 and pre-construction totals. Additionally, the number of high-hazard individuals was lower in comparison with pre-construction and Year 1 numbers, but higher when compared with Year 2. More importantly, airfield overflights associated with the tidal and control basins combined (the former Basin F) were at their lowest level since bird surveys began. In part, the decreasing number of airfield overflights is likely due to the development of the tidal basin into a more permanent state in which it is largely vegetated, and thus unsuitable for many species of water birds. In the early months of Year 1, when the tidal basin was covered largely with mudflats, large numbers of shorebirds were attracted to the area. In particular, Killdeer and Least Sandpipers figured in the high number of Type A and B overflights associated with the tidal basin, accounting for 73 percent (33 of 45) of these incidents (URS 2008). But as vegetation took hold in most of the basin, these species and others that are generally attracted to open, sparsely vegetated areas became scarce. This trend continued throughout Year 3, except for the anomalous occurrence of 4 Type A overflights involving Killdeer on September 3, 2008.

At the end of Year 2, concern existed that the bird data gathered to date for this project were not necessarily suggestive of probable long-term trends in the study area after construction. This concern was due to the atypically dry conditions that occurred during the winter of 2006–2007, and the low bird numbers observed as a result. In typical years, large amounts of standing water in the control basin are expected to attract many ducks and other water birds from winter well into summer. The winter of 2007–2008 was wetter than the previous winter, and more birds were attracted to the control basin in the winter and spring. However, winter rains ceased early in 2008, and water levels dropped quickly thereafter. Standing water in the control basin was no longer adequate to support even small numbers of waterfowl after the first week of June, only about a week later than this occurred in 2007. Thus, due to the drier than normal conditions that existed during Years 2 and 3 of the experiment, there are limitations on how well the data gathered in Years 2 and 3 will predict trends in bird use and airfield overflights for subsequent years when rainfall and water levels are relatively high. This is especially true with regard to the control basin, which derives all of its water from precipitation.

However, conditions in the tidal basin are less reliant on rainfall than on the regular incursion of tidal waters. Thus the low rainfall of 2006–2008 presumably had little effect on bird use in the tidal basin as opposed to bird use in the control basin. Data for the tidal basin suggest that the introduction of tidal flow has suppressed bird-strike hazards associated with that basin. Bird numbers for this area over the course of the year continue to be low compared with the
control basin, even though the control basin was dry for most of Year 3. At the same time, only 6 Type A and 5 Type B overflights associated with the tidal basin were recorded for the entire year. These figures are not only lower than those for the control basin in Year 3, but also are lower than the tidal basin for both previous years of post-construction surveys.

It appears likely that bird strike hazards associated with the tidal area will remain low as the habitat continues to mature. Also, it is hoped that Belding’s Savannah Sparrows will find the newly created tidal area more suitable for breeding as the pickleweed in the tidal basin becomes denser.

4.2 VEGETATION

In Year 3, pickleweed and quailbush were found to be the two dominant species. Typical estuarine species such as spearscale, saltgrass, alkali heath, and heliotrope were also found on site. Species diversity slightly decreased in Year 3 compared to Year 2 and Year 1, but was significantly higher than pre-construction conditions. Ten native species were documented, four of which were seeded or sprigged species.

The average percent native cover across transects steadily increased from Year 2 through Year 3. At the end of Year 2, the tidal basin had an average 48 percent native cover. At the end of Year 3, the tidal basin had an average 65 percent native cover. Non-native cover continually decreased and remained at close to zero percent cover throughout most of Year 3. Bare ground also decreased in Year 3, from an average of 52 percent at the end of Year 2 to an average of 38 percent at the end of Year 3. The consistently low non-native cover can be attributed to an increase in native cover, limited ability of weeds to colonize tidally influenced areas, and weeding of the berms. Weeds were virtually absent from the tidal basin floor, with most weeds being present on the surrounding berms. Restoration of the area has been successful in Year 3 and will most likely continue into the following years.

Pickleweed was the dominant species seen in the tidal basin, which can be expected due to the application of the salvaged pickleweed sprigs and topsoil containing seeds and its dominance in other tidally influenced portions of the slough. Quailbush was the second dominant native species, which was present on the berms and has continuously done well on this restoration site and other Airport restoration sites. Additionally, salt marsh species such as spearscale, Coulter’s horseweed, saltgrass, alkali heath, and wild heliotrope (Heliotropium curassavicum) were present on the berms. These species are typical for tidally influenced areas, suggesting that the plants are responding well to the experimental design. Other species remained lower in cover. High plant biodiversity illustrates that volunteer species are also colonizing the area. All seeded and sprigged species successfully colonized the area except for coast goldenbush, southern tarplant, and California sage.

The berms had higher native cover than the tidal basin bottom, which is expected due to the hydrological dynamics of the basin that create open mudflats that are not vegetated. The
restored northern berm and non-restored southern berm were similar in species diversity; however, the seeded northern berm had a higher average percent native cover.

4.3 BENTHIC MACROINVERTEBRATES

The tidal basin site appears to be successfully colonized by a BMI community similar to Tecolotito Creek based on sampling results from Year 1, Year 2, and Year 3. The BMI community in the tidal basin is similar to that of a typical estuarine habitat. It is composed of a high abundance of organisms that represent taxa that are tolerant of rapid salinity changes. In Year 3, all taxa collected in the tidal basin were also found in Tecolotito Creek, indicating successful colonization of the tidal basin by BMI taxa present in the tidal channels.

Overall, the tidal basin had the highest BMI Abundance of all the sites, likely due to the large number of Ostracoda present in the tidal basin samples. Tecolotito Creek at the bike bridge (Site 1) had a higher Taxa Richness value than the tidal basin (Site 3), likely due to the increased movement and dispersal of organisms associated with increased tidal activity at the lower end of Goleta Slough. Two insect taxa (*Trichocorixa* sp. and *Rheotanytarsus* sp.) were relatively abundant in the tidal basin in Year 1; however, both are salinity tolerant (ECORP 2006; Usinger 1956). Insect Abundance and Insect Taxa Richness were low in the Tecolotito Creek sites and the tidal basin in Year 2 represented by 19 organisms belonging to five taxa (*Trichocorixa* sp., *Rheotanytarsus* sp., *Ephydra* sp., *Psychoda* sp., and *Dolichopodidae*). In Year 3, Insect Abundance and Taxa Richness were also relatively low, represented by 25 organisms belonging to four taxa (*Trichocorixa* sp., *Rheotanytarsus* sp., Ephydridae, and *Cricotopus* sp.). As observed in Year 2, Year 3 salinity values at both tidal channel sites and in the tidal basin were greater than 10 ppt during all sampling events (ECORP, 2007). As a result, Insect Abundance was low since few benthic insect taxa can tolerant salinities greater than 10 ppt for extended periods.

4.4 TIDEWATER Goby

Tidewater gobies were not found in the tidal basin during the Year 3 beach seine surveys. Although tidewater goby do occur within the Tecolotito Creek and Los Carneros estuary system (ECORP 2007a), their abundance is much lower than in other Santa Barbara County estuaries, such as Arroyo Burro Creek (ECORP 2006). It is likely that the relatively high salinity levels (bottom salinities ranging from 26 to 33 ppt) within the Tecolotito Creek and Los Carneros estuary system are not conducive to tidewater goby spawning and juvenile survival. Tidewater goby prefer a salinity range of 10 to 15 ppt for spawning (USFWS 1999).

4.5 TIDAL FEATURES

Water quality parameters observed in Year 3 sampling events were within the projected range for tidal channels in the tidally influenced sites. Similar conductivity and salinity values recorded in the Tecolotito Creek sites and in the tidal basin indicated that the tidal
basin appears to function as a tidally influenced saltwater marsh. Salinity levels in the tidal basin may continue to increase over time unless periodic flushing occurs via occasional freshwater outflows or extreme tidal fluctuations. Water quality parameters recorded in the control basin during the pre-construction baseline survey, Year 1, Year 2, and Year 3 sampling events were indicative of shallow freshwater habitat. Values recorded in Year 3 inside the tidal basin and in Tecolotito Creek adjacent to the tidal basin were similar to each other.

4.6 SUMMARY

In summary, monitoring results show that the Tidal Restoration Demonstration Project has been successful in the establishment of appropriate characteristics of a tidally influenced wetland for birds, vegetation, benthic macroinvertebrates, and tidal features (water quality and hydrology).
TIDAL RESTORATION DEMONSTRATION PROJECT
YEAR 3 ANNUAL MONITORING REPORT

SECTION 5.0
REFERENCES


2006. Results of Benthic Macroinvertebrate and Tidewater Goby Surveys Conducted in 2005 in the Arroyo Burro Creek and Mission Creek Estuaries. Prepared for the City of Santa Barbara Parks and Recreation Department. 73pp.


TIDAL RESTORATION DEMONSTRATION PROJECT
YEAR 3 ANNUAL MONITORING REPORT


APPENDIX A
TIDAL BASIN AND CONTROL BASIN TOPOGRAPHIC MAP
APPENDIX B

BASIN MAP, LOCATION OF BIRD SURVEYS
Appendix B. Basin Map
Location of Bird Surveys
APPENDIX C
LOCATION OF VEGETATION TRANSECTS
<table>
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Appendix C. Location of Vegetation Transects

Tidal Restoration Demonstration Project
Year 3 Annual Monitoring Report
APPENDIX D

PHOTOGRAPHS OF VEGETATION TRANSECTS,
MAY AND NOVEMBER 2008
Photograph 1.
May 22, 2008. Transect 1, facing east.

Photograph 2.
November 18, 2008. Transect 1, facing east.
Photograph 3.
May 22, 2008. Transect 1, facing west.

Photograph 4.
November 18, 2008. Transect 1, facing west.
Photograph 5.

Photograph 6.
Photograph 7.

Photograph 8.
November 18, 2008. Transect 2, facing south.
Photograph 9.

Photograph 10.
Photograph 11.

Photograph 12.
Photograph 13.

Photograph 14.
Photograph 15.

Photograph 16.
November 18, 2008. Transect 4, facing south.
Photograph 17.

Photograph 18.
November 18, 2008. Transect 5, facing east.
Photograph 19.

Photograph 20.
November 18, 2008. Transect 5, facing west.
Photograph 21.

Photograph 22.
November 18, 2008. Transect 6, facing northeast.
Photograph 23.

Photograph 24.
Photograph 25.

Photograph 26.
Photograph 27.

Photograph 28.
Photograph 29.

Photograph 30.
November 18, 2008. Transect 8, facing north.
Photograph 31.

Photograph 32.
November 18, 2008. Transect 8, facing south.
Photograph 33.

Photograph 34.
November 18, 2008. Transect 9, facing north.
Photograph 35.

Photograph 36.
November 18, 2008. Transect 9, facing south.
APPENDIX E
PHOTOGRAPHS OF TIDAL BASIN SITE,
OCTOBER 2006 AND OCTOBER 2008
Photograph 1. October 31, 2006. View of southern berm, facing east. Tecolotito Creek is on the right. Tidal Basin is on the left.

Photograph 2. October 1, 2008. Same view as above.
Photograph 3. December 31, 2006 (October photograph not available). View of southern berm, facing west. Tecolotito Creek is on the left. Tidal Basin is on the right.

Photograph 4. October 1, 2008. Same view as above.

Photograph 6. October 1, 2008. Same view as above.

Photograph 8. October 1, 2008. Same view as above.

Photograph 10. October 1, 2008. Same view as above.
View of Tidal Basin and tidal gate, facing northwest.

Photograph 12. October 1, 2008. Same view as above.

Photograph 14. October 1, 2008. Same view as above.

Photograph 16. October 1, 2008. Same view as above.
APPENDIX F
PHOTOGRAPHS OF BENTHIC MACROINVERTEBRATE
SAMPLING SITES, MAY 2008
Photograph 1.
May 20, 2008. Site 1, facing downstream.

Photograph 2.
May 20, 2008. Site 1, facing upstream.
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Photograph 3.
May 20, 2008. Site 2, facing downstream.

Photograph 4.
May 20, 2008. Site 2, facing upstream.
Photograph 5.

Photograph 6.
Photograph 7.
May 20, 2008. Site 4, facing downstream.

Photograph 8.
May 20, 2008. Site 4, facing upstream.
APPENDIX G
PHOTOGRAPHS OF TIDAL INFORMATION STATIONS, JULY 2008
Photograph 1.

Photograph 2.
Photograph 3.
July 10, 2008. Tecolotito Creek, just outside tidal basin (TS2), high tide.

Photograph 4.
July 10, 2008. Tecolotito Creek, outside tidal basin (TS2), low tide.
# Bird Species List December 1, 2007 – November 30, 2008

<table>
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<tr>
<th>Bird Species</th>
<th>Scientific Names</th>
<th>Tidal Basin</th>
<th>Control Basin</th>
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¹ Status: X = Observed, 0 = Not Observed

² White-faced Ibis is not included in the status column.
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<th>Bird Species</th>
<th>Scientific Names</th>
<th>Tidal Basin</th>
<th>Control Basin</th>
<th>Basin A</th>
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¹ Status codes: FP = For Protection, SSA = Species of State Concern, BSSC = Bird Species of State Concern, BCC = Bird Conservation Area, SSA(B) = SSA for Bird Conservation Area.
## TIDAL RESTORATION DEMONSTRATION PROJECT
### YEAR 3 ANNUAL MONITORING REPORT

### BIRD SPECIES LIST DECEMBER 1, 2007 – NOVEMBER 30, 2008 (CONTINUED)

<table>
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<th>Bird Species</th>
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<th>Tidal Basin</th>
<th>Control Basin</th>
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<th>Basin B/C/D</th>
<th>Basin E</th>
<th>Basin G</th>
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¹ Status codes:
- SSA(B): Suspected Significant Changes, Basins A and B/C/D
- BSSC(B): Basins of Special Scientific Concern, Basins A, B/C/D, and E
- BCC(5): Basins of Critical Concern, Basins A and B/C/D
- SSA(B): Suspected Significant Changes, Basins A and B/C/D

S:\_Pre\SB Airport\Tidal Basin Report 2008\final\App H_Bird spp flat.doc

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¹: BCC(R, 32), BSSC(B), SSA(B)
## BIRD SPECIES LIST DECEMBER 1, 2007 – NOVEMBER 30, 2008 (CONTINUED)

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<th>Control Basin</th>
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<th>Basin E</th>
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¹ Special Status Designations:
- U.S. Fish and Wildlife Service (USFWS, 2008).
- BCC = Birds of Conservation Concern (Sufficient information exists which warrants concern over that species' status and warrants study).
- (R) = USFWS Region 1 (States of CA, HI, ID, NV, OR, and WA, plus other Pacific islands).
- Numbers refer to Bird Conservation Regions (BCR): 1 (5) - Northern Pacific. 32 (32) - Coastal California.
- (B) = Species only protected while breeding, nesting or at rookery site.
BIRD SPECIES LIST DECEMBER 1, 2007 – NOVEMBER 30, 2008 (CONTINUED)

California Department of Fish and Game (CDFG, 2008).
SE = State Endangered (in danger of becoming extinct throughout all or a significant portion of its range).
FP = Fully Protected.
BSSC = California Bird Species of Special Concern: 2006 (Information exists which warrants concern over that species' status and warrants study).
SSA = State Special Animal (in danger of becoming California Species of Concern because it is directly connected to a habitat that is declining) (CDFG, 2007).
(B) = Species only protected while breeding, nesting or at rookery site.
2 Species observed flying over the basin, not landing, resting, or feeding in the basin.
3 A small percentage from August through April may be subspecies of Savannah Sparrow other than Belding’s.
APPENDIX I
HIGH-HAZARD BIRD SPECIES LIST, 2005 – 2008
### HIGH-HAZARD BIRD SPECIES LIST 2005 – 2008

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## HIGH-HAZARD BIRD SPECIES LIST 2005 – 2008 (CONTINUED)

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*Note: The following species were previously considered high-hazard species, but were removed from the list in Year 2 after reevaluation: Green Heron, Sharp-shinned Hawk, Bonaparte’s Gull, and Short-eared Owl.*
APPENDIX J
NON-NATIVE PLANT SPECIES LIST, 2008
NON-NATIVE PLANT SPECIES LIST, 2008)

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<td><em>Sonchus spp.</em></td>
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1 Listed as invasive by the California Invasive Plant Council (Cal-IPC, 2008).
APPENDIX K
BENTHIC MACROINVERTEBRATE SPECIES LIST,
MAY AND AUGUST 2008
## Tidal Restoration Demonstration Project
### Year 3 Annual Monitoring Report

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<th>Class</th>
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### TIDAL RESTORATION DEMONSTRATION PROJECT
#### YEAR 3 ANNUAL MONITORING REPORT

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### TIDAL RESTORATION DEMONSTRATION PROJECT
#### YEAR 3 ANNUAL MONITORING REPORT

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APPENDIX L
TIDAL INFORMATION STATION SITE INFORMATION
### TIDAL INFORMATION STATION SITE INFORMATION

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<th>Project</th>
<th>Same Location As</th>
<th>Year Data Was Used</th>
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<td>BW</td>
<td>Inside</td>
<td>URS</td>
<td>WQ – Tidal Basin</td>
<td>BMI3, TWG7</td>
<td>Year 2</td>
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<td>Outside</td>
<td>URS</td>
<td>WQ – Tidal Basin</td>
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<td>BW</td>
<td>Outside</td>
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<td>TEC-2</td>
<td>Pre-construction, Years 1 – 3</td>
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<td>BMI – Tidal Basin</td>
<td>BMI4</td>
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N/A = not applicable  
FW = Freshwater  
BW = Brackish water  
¹ For brackish water sites only
DRAFT
BIOLOGICAL ASSESSMENT
FOR THE
BASIN E/F TIDAL RESTORATION PROJECT
GOLETA SLOUGH
SANTA BARBARA AIRPORT
SANTA BARBARA, CALIFORNIA

Prepared for:
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URS Project Number 28907105
August 2009
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<tr>
<td>ASP</td>
<td>Airfield Safety Projects</td>
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<td>BA</td>
<td>Biological Assessment</td>
</tr>
<tr>
<td>BMPs</td>
<td>Best Management Practices</td>
</tr>
<tr>
<td>BSS</td>
<td>Belding’s Savannah Sparrow</td>
</tr>
<tr>
<td>BO</td>
<td>Biological Opinion</td>
</tr>
<tr>
<td>°C</td>
<td>Degrees Celsius</td>
</tr>
<tr>
<td>CCC</td>
<td>California Coastal Commission</td>
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<tr>
<td>CDFG</td>
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<tr>
<td>CDP</td>
<td>Coastal Development Permit</td>
</tr>
<tr>
<td>City</td>
<td>City of Santa Barbara</td>
</tr>
<tr>
<td>cm</td>
<td>Centimeters</td>
</tr>
<tr>
<td>CMP</td>
<td>Corrugated metal pipe</td>
</tr>
<tr>
<td>CNDDB</td>
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<tr>
<td>CNPS</td>
<td>California Native Plant Society</td>
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<td>Corps</td>
<td>U.S. Army Corps of Engineers</td>
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<tr>
<td>EIR</td>
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<tr>
<td>ESHA</td>
<td>Environmentally Sensitive Habitat Area</td>
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<tr>
<td>ESU</td>
<td>Evolutionarily Significant Unit</td>
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<td>°F</td>
<td>Degrees Fahrenheit</td>
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<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>HDPE</td>
<td>High density polyethylene</td>
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<tr>
<td>LCP</td>
<td>Local Coastal Plan</td>
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<tr>
<td>mm</td>
<td>Millimeters</td>
</tr>
<tr>
<td>MLLW</td>
<td>Mean Lower Low Water</td>
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<td>MMRP</td>
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<td>North American Vertical Datum of 1988</td>
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<td>NPDES</td>
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<tr>
<td>ppt</td>
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<td>Project</td>
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<td>RCP</td>
<td>Reinforced concrete pipe</td>
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<td>Streambed Alteration Agreement</td>
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<td>Science Applications International Corporation</td>
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<td>University of California Santa Barbara</td>
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<td>United States Fish and Wildlife Service</td>
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<td>USGS</td>
<td>United States Geological Survey</td>
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List of Acronyms (Continued)

WWC  Woodward-Clyde Consultants
EXECUTIVE SUMMARY

The Federal Aviation Administration (FAA) and the Santa Barbara Airport (Airport) are proposing to construct a 10.3-acre tidal restoration project in Basin E/F of Goleta Slough in Santa Barbara County, California.

This Biological Assessment (BA) documents potential adverse effects to species listed as endangered, threatened, or proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) that are regulated by the U.S. Fish and Wildlife Service (USFWS).

The field reconnaissance and background review determined that the Project site provides habitat suitable to support one federally listed species under the USFWS jurisdiction, the tidewater goby (*Eucyclogobius newberryi*), which is listed as endangered; one state-listed bird species Belding’s savannah sparrow (BSS; *Passerculus sandwichensis beldingi*); and two California Native Plant Society (CNPS)-listed plant species, southern tarplant (*Centromadia [Hemizonia] parryi* ssp. *australis*) and Coulter’s goldfields (*Lasthenia glabrata* ssp. *coulteri*).

After a literature review, site reconnaissance, communication with individuals knowledgeable about the species, and consideration of the proposed activities, FAA has determined that the proposed Project is not likely to have significant, direct adverse effects on Belding’s savannah sparrow, and Coulter’s goldfields. Direct adverse effects to southern tarplant are anticipated; however impacts would be minimized and mitigated by restoration efforts. Though unlikely, the Project may result in temporary direct adverse effects to tidewater gobies. In addition, potential temporary direct adverse effects are anticipated for aquatic species, water quality, and vegetated habitats and mudflats including coastal salt marsh, ESHAs and coastal act wetlands.

The proposed Project temporarily may adversely affect suitable habitat for the tidewater goby and Belding’s savannah sparrow, an indirect adverse effect. In addition, potential temporary indirect adverse effects are anticipated for aquatic species and water quality. However, the habitat restoration associated with the proposed Project would provide long-term benefits to these sensitive biological resources in Goleta Slough by improving habitat quality and establishing new populations of rare plant species.

Measures are proposed in this document that will avoid or minimize the potential for mortality, disturbance, habitat degradation, and other potential adverse effects on the tidewater goby, Belding’s savannah sparrow, southern tarplant, and Coulter’s goldfields. In addition, avoidance and minimization measures are proposed for aquatic species, water quality, and vegetated habitats and mudflats including coastal salt marsh, ESHAs and coastal act wetlands. FAA has determined that with the implementation of the identified avoidance
and minimization measures, the proposed Project is not likely to adversely affect these special-status species and sensitive biological resources. However, the fish relocation effort has a low potential to temporarily disturb and/or lead to mortality of tidewater gobies and therefore “may affect-is likely to adversely affect” tidewater goby. Section 7 consultation with USFWS for tidewater goby is required.
SECTION 1
INTRODUCTION

This BA is organized into eight sections. The remaining portion of Section 1 explains the history of the Project site as well as the purpose and need for the proposed Project. Section 2 describes the proposed Project in detail. Section 3 describes the environmental setting, including the vegetation communities at the Project site, the study methods, and identifies the special-status species that are relevant to the proposed Project. Section 4 describes the life history of the special-status species relevant to the proposed Project. Section 5 evaluates the potential adverse effects to these species, impacts to vegetated mudflats and habitats, impacts to aquatic species and water quality, and presents avoidance and minimization measures. Section 6 summarizes the conclusions of this analysis. References are listed in Section 7, and the list of preparers for this BA is in Section 8.

The FAA is providing the funding for the proposed Project and has prepared this BA to evaluate potential effects of the proposed Project on species that are listed, proposed, or candidate for listing under the ESA that are regulated by the USFWS. Potential effects on federal listed species are evaluated in accordance with the legal requirements set forth under Section 7 of the ESA (16 U.S.C. 1536). This BA was prepared in accordance with the USFWS rules at 50 CFR Part 402.12 (USFWS 1986) and the USFWS Section 7 Biological Assessment Guidelines (USFWS 2008b). In addition, this BA evaluates impacts critical habitat for federally endangered or threatened species, sensitive biological resources that are not federally listed including Species of Special Concern as designated by the California Department of Fish and Game (CDFG), or rare plants as designated by the California Native Plant Society (CNPS), coastal act wetlands, and Environmentally Sensitive Habitat Areas. Criteria used to determine which species were considered for this BA and potential adverse effects to those species from project activities are presented. In addition, this report proposes measures to avoid and/or minimize take or disturbance to potentially affected species.

In coordination with FAA, the Santa Barbara Airport (Airport) is proposing to construct a 10.3 acre tidal restoration project in Goleta Slough on Airport property. The Basin E/F Tidal Restoration Project (proposed Project) is to serve as mitigation for the FAA’s Airfield Safety Projects (ASP) at the Airport. In addition, the creation of tidally influenced wetlands are expected to reduce the Airport’s bird strike hazards by altering the species of birds that are attracted to Basin E/F.

The Airport is located in Goleta Valley, along the South Coast of Santa Barbara County, California, and was constructed within the historic boundaries of Goleta Slough (Figure 1). Only a small portion of the Goleta Slough wetlands and tidal channels remain, most of which are located on Airport property south of the airfield. Significant portions of Goleta Slough are non-tidal due to historic diking and filling. Existing tidal habitats have low to moderate quality because tidal influence has been reduced. In addition, the Airport and existing
wetlands are periodically impacted by large storm events which result in flooding of the region. The flood waters are restrained by the dikes and silt settles out in the low lying wetlands further degrading the habitat and accelerating the conversion of the slough into upland habitat. Therefore, in addition to serving as mitigation, the proposed Project would contribute to a reduction in the Airport’s bird strike hazards, provide several ecological benefits, and significantly contribute to the ongoing efforts to restore native habitats in Goleta Slough.

1.1 PROJECT BACKGROUND

As part of the Airport’s ongoing maintenance, and as required by the FAA, the ASP were constructed in 2005 through 2007 at the Airport. The ASP consisted of several projects including New Runway Safety Areas (including the relocation of Tecolotito and Carneros creeks approximately 1,000 feet to the west), West Service Road Extension, Eastern Taxiway Improvements, New Taxiway M, East Service Road Extension, and Grading and Drainage Improvements. The Airport Wetland Restoration Plan (Restoration Plan; URS 2003a) was created to provide guidance on mitigation for impacts to wetlands associated with the ASP. The wetland mitigation sites constructed in 2005–2007 according to the Restoration Plan include Area I, Tecolotito Creek Berms, R-2 Wetlands, and Creek Relocation. These mitigation sites did not fulfill the Airports full mitigation requirement as specified in their California Coastal Commission (CCC) Coastal Development Permit (CDP). The Tidal Restoration Demonstration Project (Tidal Basin) constructed in 2005, was not part of the mitigation identified in the Restoration Plan; however, since it was determined successful after three years of monitoring, the Airport is adopting it to serve as a portion of their remaining mitigation. The proposed Project would serve as the remaining mitigation to complete the full mitigation requirement.

For many years, the Airport, various public agencies, regulatory agencies, public interest groups, and environmental organizations have sought to restore wetlands in Goleta Slough by increasing the extent of tidal circulation. The FAA has expressed concern that restoring tidal circulation to portions of Goleta Slough could modify bird activity in and near the airfield, and possibly increase aviation bird strike hazards.

In order to address these concerns, the Airport conducted a tidal restoration feasibility study. In September 2003, the Airport issued the Goleta Slough Tidal Restoration Study, Feasibility Study for a Field Experiment (URS 2003c) to the FAA and United States Department of Agriculture (USDA) Wildlife Services. The study evaluated the feasibility of implementing a short-term field experiment in Goleta Slough to increase tidal circulation for monitoring and research purposes. The anticipated ecological benefits of the proposed field experiment and the effect on bird strike hazard at the Airport due to the experiment were evaluated in the study. The study concluded that the recommended field experiment could be
FIGURE 1
PROJECT LOCATION MAP
implemented without increasing bird strike hazards at the Airport and recommended that the small tidal basin would be monitored for a minimum of two years.

To initiate the experiment, a small tidal basin was created by excavating portions of a larger non-tidal basin (Basin F). A culvert with a tidal gate was then installed under the berm between the experimental tidal basin and the tidally influenced Tecolotito Creek. Construction began in August 2005 and was completed October 2005. This design placed the experimental tidal basin adjacent to the remainder of the non-tidal basin, separated by an earthen berm. The non-tidal basin thus served as a control for the effects of tidal circulation, and their proximity allowed for easy comparison of environmental parameters. See Figure 2 for the Project Site Map which shows the location of the existing experimental tidal basin in relation to the non-tidal control basin and Tecolotito Creek.

Based on the third year monitoring results (URS 2009) covering the period of December 1, 2007 to November 30, 2008, the number of high-hazard individual birds was lower in comparison with the pre-construction surveys. Additionally, airfield overflights associated with the tidal and control basins combined (the former Basin F) were at their lowest level in 2008 since bird surveys began.

The decreasing number of airfield overflights is likely due to the development of the tidal basin into a more permanent state in which it is largely vegetated, and thus unsuitable for many species of water birds. It appears likely that bird strike hazards associated with the tidal area will remain low as the habitat continues to mature. Also, it is hoped that Belding’s Savannah Sparrows will find the newly created tidal area more suitable for breeding as the pickleweed in the tidal basin becomes more established.

With the completion of three years of monitoring and documentation of ecological benefits of the experimental tidal restoration basin and the reduction on bird strike hazard at the Airport, the experimental tidal basin has been adopted by the Airport as part of their wetland mitigation to remain permanently. Additional tidal restoration in Basins E/F is being designed to fulfill the remaining mitigation requirements associated with the ASP. URS Corporation (URS) prepared a letter for the Airport on June 18, 2009, that summarizes the wetland mitigation that had been implemented to date and the remaining wetland mitigation required totaled 7.05 acres.
FIGURE 2
PROJECT SITE MAP
SECTION 2
DESCRIPTION OF THE PROPOSED PROJECT

The experimental tidal basin project is being used as a model to guide the design and implementation of the Basin E/F Tidal Restoration Project, and lessons learned from the experimental basin will improve the proposed Project’s success. The Project site is defined as the limit of the proposed construction activities associated with the implementation of the proposed Project (e.g., access and construction areas). The Project site includes areas in and around Basins E, F, and G that may be permanently or temporarily disturbed by the proposed Project including portions of Tecolotito Creek and Foxtrot Drain (Figure 2). The Project goals include:

- Creating a minimum of 7.05 acres of tidal wetland restoration to serve as mitigation
- Providing habitat for special-status species
- Providing a diverse species mix of high marsh habitat
- Providing a hydrological regime that minimizes sediment accumulation in the basin
- Connecting to the existing experimental tidal basin
- Minimizing the amount of standing water near the runway
- Facilitating the in-flow and out-flow of water in Basin G

The primary goal of the Project is to create 7.05 acres of wetland to fulfill the mitigation requirements of the CCC CDP for the Airport’s ASP. These goals not only fulfill the Airport’s mitigation requirement, but also provide several ecological benefits to Goleta Slough that are consistent with the Draft Goleta Slough Ecosystem Management Plan (City of Santa Barbara 1997) and Wetland Restoration Plan (URS 2003a), improve storm water management of the Airport infield, and contribute to a reduction in the Airport’s bird strike hazards. Basin E/F will be excavated to create two basins that will be connected during moderate high tides and significant storm events. Much of the area being created is designed to be suitable BSS breeding habitat and will allow for the establishment of uncommon and rare wetland plant species. The Project will provide habitat for the following special-status species:

- **Belding’s Savannah Sparrow** (State Endangered): Based on the BSS preference for nesting in large patches “in the mid- to upper-littoral zones of coastal salt marshes” (Powell 1993), the best breeding habitat is assumed to be from 6 to 7 foot elevation. The design maximizes habitat in this elevation range and in large patches.

- **Tidewater goby** (Federally Endangered and State Species of Special Concern): Tidewater gobies are generally found in brackish water at the upper end of estuaries where the salt water and fresh water of stream inlets interface. Most tidewater gobies are
found in water with salinity of 12 parts per thousand or less and less than 1 meter deep. They prefer slow moving water but not stagnant. Planting wetland plants such as marsh bulrush (Bolboschoenus [Scirpus] maritimus) in the brackish water areas will provide cover for gobies and also assist in filtering potential pollutants entering the slough from the drainage inlets. The design creates areas with brackish water conditions during the rainy season by creating drainages that capture freshwater runoff from the Airport at Foxtrot Drain and the Windsock drain that will flow into tidal areas.

- **Wandering skipper** (*Panoquina errans*; locally rare): Saltgrass (*Distichlis spicata*) will be planted on wetland edges to serve as food for the larvae and a diversity of low growing flowering plants will be installed to provide nectar for adults.

- **Pygmy blue butterfly** (*Brephidium exilis*; locally rare): A variety of native *Atriplex* sp. will be planted to serve as food for larvae and a diversity of low growing flowering plants will be installed to provide nectar for adults.

- Seeds of **southern tarplant** (*Centromadia parryi* ssp. *australis*; California Native Plant Society [CNPS] 1B.1 [rare, threatened or endangered in California and elsewhere, seriously endangered in California]), **Coulter’s goldfields** (*Lasthenia glabrata* ssp. *coulteri*; CNPS 1B.1), and **annual saltmarsh aster** (*Aster subulatus* var. *ligulatum*; locally rare) shall be broadcast seeded, and *Leopold rush* (*Juncus acutus* ssp. *leopoldii*; CNPS 4.2 [limited distribution, fairly endangered in California]) will be planted in transitional wetland edges.

Implementation of these goals is addressed in greater detail in conjunction with various Project elements that are discussed in Section 4.0. Construction is scheduled to begin in early August 2010 and is expected to be completed by November 1, 2010.

### 2.1 PROJECT SITE

The Project consists of reintroducing tidal flow to portions of a non-tidal basin (Basin E), and experimental tidal basin and non-tidal control basin (formerly Basin F) in Goleta Slough on Airport property (Figure 3). The Project site is approximately 10.3 acres, of which 9.3 acres will be tidally influenced. The Project site is located within the central portion of Goleta Slough and is between the main runway 7-25 and Tecolotito Creek. Descriptions of Basins E, F, and G, and Foxtrot Drainage are provided below. Site photographs are shown in Appendix A.

The Project consists of the following specific elements, which are described in detail in the following subsections:

- Construction of Basin E/F Tidal Restoration Project
- Habitat Restoration of the Basin E/F
FIGURE 3
EXISTING CONDITIONS AT BASIN E/F
• Revegetation Maintenance and Monitoring

2.2 CONSTRUCTION OF BASIN E/F TIDAL RESTORATION PROJECT

In addition to excavating portions of Basin E/F to accommodate tidal flow, and filling other portions of the basin to reduce freshwater ponding and provide more high marsh habitat, the Project consists of the following elements. The upstream end of the berm separating Foxtrot Drainage from Basin E would be breached just south of the culvert outfall and a small portion of the drainage would be filled to divert storm waters into a new channel in Basin E. At the downstream end of the Foxtrot Drainage/Basin E berm a portion of the berm would be breached near the intersection of Foxtrot Drainage and Tecolotito Creek to create a connection between the new Basin E tidal channel and Tecolotito Creek. The middle section of the Foxtrot Drainage/Basin E berm would be lowered and blended in to the Basin E topography to accommodate tidal flow. The 24-inch corrugated metal pipe (CMP) culvert in the southern berm of Basin E and the 36-inch high density polyethylene (HDPE) culvert and sluice gate in the southern berm of Basin F would be removed. Additionally, hydrological connectivity with Basin G would also be improved by clearing the 24-inch CMP culvert of sediment and debris and grading the northwestern corner to facilitate flow into the culvert and minimize ponding. More detail on these construction activities are described below. Preliminary construction drawings are presented in Appendix B.

Access to the site during construction will be accomplished along two 20-foot wide vehicle corridors from the Taxiway A Road. One access point would be along the west side of the Project site on the west berm (Adams Road) between Basin F and Basin G and along the berm dividing the existing tidal basin and control basin (Appendix C, Sheet 4). A second access point would enter the north portion of the Project site, through the existing Safety Area Grading Restoration Site. The exact location of this access point will be determined in the field by a biologist to minimize impacts to the native vegetation.

Native woody vegetation along the access corridor on northern edge and the west berm will be cleared to ground level, but roots will not be removed in order to allow post-construction regeneration of the native plants installed on this berm in 2000. During construction, vehicles will drive over the crushed layer of existing low growing herbaceous vegetation within the access corridors; the herbaceous vegetation is expected to recover naturally through rhizomes in the soil and the seed bank.

A construction staging area would be located near the V-54 gate off of Fairview Avenue.

Construction in areas that convey water (i.e., Tecolotito Creek, Foxtrot Drainage) will be conducted in such a fashion as to minimize the need and length of time water diversion devices are required. A plan for managing tidal water during construction is described in greater detail in Section 4.1.4 below.
2.2.1 Basin E

The majority of Basin E, the eastern basin, will be lowered, most of the Foxtrot/Basin E berm would be removed and/or re-contoured, and the Tecolotito Creek berm would be re-contoured in the southeast corner of Basin E. In addition, the existing 24-inch CMP culvert would be removed and the area refilled and contoured.

The majority of the bottom of Basin E will be between five and seven feet in elevation with a deeper channel along the eastern portion of the basin. The majority of Basin E would require approximately one foot of grading; more extensive excavation would be required for the channel, along Foxtrot berm and near the southeastern portion of Basin E. Some of the excavated material may be used to fill low portions of Basin F, particularly in the control basin and along the north end of the Basin E/F southern berm to create a more gradual slope from the berm to the tidal basin. The remaining excavated material would be removed from the Airport property.

The northeastern portion of the Foxtrot/Basin E berm would be lowered to approximately 4 feet and would be about 60 feet wide with side slopes no greater than 4:1. Fill would be used to create a berm that would force storm water from the outfall into the new Basin E channel. The middle portion of the Foxtrot Drainage would be blended into the main portion of Basin E by removing approximately 350 feet of the Foxtrot/Basin E berm. A new channel into Basin E would be created approximately 100 feet north-northwest of the confluence of Foxtrot Drainage and Tecolotito Creek and would be approximately 40 feet wide with about a 3-foot elevation to match the Foxtrot Drainage elevation. The southeastern corner of Basin E, where the Tecolotito Creek and Foxtrot Drainage berms intersect, would be modified to create a larger opening to Foxtrot Drainage and re-contoured to blend with the new channel in Basin E. The Tecolotito berm would be excavated to create an 8-foot wide opening to Foxtrot Drainage and regraded to create 4:1 side slopes.

During storm events, the storm water from the Foxtrot Drain outfall would enter Basin E in the northeast corner. From the northeastern corner of Basin E, the storm waters would flow into the channel, through three wide, shallow depressions and then back to the southeast corner of the basin. The channel would flow into the lower portion of Foxtrot Drainage where the drainage has been widened and then into Tecolotito Creek. During normal tidal events, the southern and eastern portions of Basin E would be inundated. The northern portion of Basin E would only be inundated during moderately high tides or during heavy storm events.

2.2.2 Basin F

The restoration plans for Basin F minimizes disturbance to the experimental tidal basin; however, some modifications are necessary. The northeastern and eastern portions of the berm created in 2005 will be removed connecting the experimental basin with the larger
Basin E/F area. The northern portion of Basin F (the control basin) will be filled with native material to create additional habitat suitable for breeding BSS and reduce ponding water. Additional native soils will be placed along the southern portion of Basin F to create a more gradual slope along Tecolotito berm and encourage the establishment of native high marsh vegetation. A forked channel capturing freshwater flows from Basin G and the culvert that drains the Airport infield flowing south to Tecolotito Creek will be excavated. This new channel will improve storm water conveyance and improve tidal circulation. Under moderately high tides, tidal waters may reach Basin G. The channel bottom elevation will range from approximately 4.0 feet in the north to 3.5 feet near the mouth of the channel with a wider channel area near the southern end. The channel will merge with the existing channel created as part of the experimental basin. This channel will connect with Tecolotito Creek by removing the tide gate and culvert and excavating a channel through the berm that is eight feet wide at the base with 4:1 sloped banks, providing a permanent tidal connection.

2.2.3 Basin G

Basin G would have some limited grading in the northeastern corner of the basin near the culvert to facilitate flow from the basin into the culvert while minimizing ponding. The existing 24-inch reinforced concrete pipe (RCP) culvert would be completely cleared of debris and sediment to improve flow.

2.2.4 Tidal Water Management during Construction

Due to the nature of the work, tidal water will need to be managed during work along Tecolotito Creek and Foxtrot Drainage. Work in these areas will be the last elements of the Project and are expected to require tidal water management for up to approximately two full weeks. Two bladder dams would be installed at low tide: one downstream of the confluence of Foxtrot Drainage and Tecolotito Creek and one upstream of the Basin F culvert. The area within the bladder dams would be cleared of fish prior to dewatering in order to minimize impacts to fish during project construction. Since tidewater goby is known to occur in Goleta Slough in recent years, personnel with experience handling these species will conduct the fish clearing effort under the Biological Opinion to be issued by USFWS.

After the final grading and restoration activities within the tidally influenced areas are complete, the bladder dams will be removed during low tide. Removing the dams at low tide will allow a slow return of water to the creek, drainage, and basins. After the dams are removed, the Project will be subject to tidal influence and work within the tidally influenced areas will be limited to pedestrian access only.

2.3 HABITAT RESTORATION OF BASIN E/F

In addition to the previous goals mentioned to provide habitat for special-status species, the landscape and irrigation plans were designed with the intent to provide as much native
coverage as possible in a short amount of time. During the experimental tidal basin project, there was a delay in vegetation coverage, likely due to lack of irrigation and the use of hydroseeding. The bare ground attracted killdeer (*Charadrius vociferus*) resulting in an increase in airfield overflights. The proposed plans are designed to minimize this nuisance by maximizing vegetative growth.

During the clearing and grubbing of Basin E/F, the contractor will salvage the upper three inches of pickleweed (*Salicornia virginica*) vegetation (stems and roots), topsoil, surface organic matter and seeds. This material would be placed in a temporary stock pile within the work area. Upon completion of grading, the pickleweed material will be lightly turned into the soils between elevations four and seven feet covering approximately 8.2 acres (Appendix C, Sheets 4 and 5). Pickleweed readily sprouts from stem and root cuttings and is expected to become quickly established as the winter progresses. No irrigation is planned for areas less than 6 foot elevation because these areas should receive enough tidal flows to sustain the vegetation. No pickleweed will be placed in the tidal channels below four foot elevation, which will be inundated most of the time.

In addition to the application of pickleweed, a mixture of plants and seeds of appropriate and available species listed in Table 1 will be applied between six and seven feet elevation. Plants shall be installed at approximately five foot spacing and seeds shall be broadcasted and raked into the soil at a rate of 20 lbs per acre in select areas as specified in the field by the restoration biologist (see Appendix C, Sheet 5). A similar mixture of plants and seeds will be installed above seven foot elevation; however, plant spacing shall be two feet to provide greater cover since pickleweed sprigs will not be installed above seven feet. Container plants installed above seven foot elevation will also have an application of bark mulch (debris and weed free) placed around each plant to suppress weed growth.

Depending on the Project budget, a minimum of 5,000 up to 12,100 container plants, 1 gallon size, will be installed over approximately 4.65 acres. The amount of seed collected will depend upon the available seed crop. A minimum of 40 lbs will be seeded over two acres at a seeding rate of 20 lbs per acre. The seeded areas will be dispersed in “seed patches” throughout the areas above 6 foot elevation and will be marked in the field by a biologist. Seeds will be broadcast seeded and then lightly raked into the soil to a depth of no more than 1/4 inch using a small tractor or rake. In the 6- to 7-foot elevation areas, the pickleweed sprigs and topsoil will be applied first and then the seeds will be raked into the soil. Above ground temporary sprinklers will be used to water plants and seeds above six foot elevation. Basin E/F will be weeded to prevent colonization by non-native plants, as described in Section 4.5.
**TABLE 1**

RESTORATION PLANT AND SEED LIST

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PLANT MIX</strong></td>
<td></td>
</tr>
<tr>
<td><em>Arthrocnemum (Salicornia) subterminalis</em></td>
<td>Parish’s pickleweed</td>
</tr>
<tr>
<td><em>Atriplex californica</em></td>
<td>California saltbush</td>
</tr>
<tr>
<td><em>Atriplex lentiformis</em></td>
<td>Brewer’s saltbush</td>
</tr>
<tr>
<td><em>Atriplex watsonii</em></td>
<td>Watson’s orach</td>
</tr>
<tr>
<td><em>Bolboschoenus (Scirpus) maritimus</em></td>
<td>Marsh bulrush</td>
</tr>
<tr>
<td><em>Cressa truxillensis</em> var. <em>truxillensis</em></td>
<td>Alkali weed</td>
</tr>
<tr>
<td><em>Distichlis spicata</em></td>
<td>Saltgrass</td>
</tr>
<tr>
<td><em>Euthamia occidentalis</em></td>
<td>Western flat-topped goldenrod</td>
</tr>
<tr>
<td><em>Frankenia salina</em></td>
<td>Alkali heath</td>
</tr>
<tr>
<td><em>Hordeum brachyantherum</em> ssp. <em>brachyantherum</em></td>
<td>Meadow barley</td>
</tr>
<tr>
<td><em>Hordeum brachyantherum</em> ssp. <em>californicum</em></td>
<td>California meadow barley</td>
</tr>
<tr>
<td><em>Hordeum depressum</em></td>
<td>Low barley</td>
</tr>
<tr>
<td><em>Isocoma menziesii</em></td>
<td>Coast goldenbush</td>
</tr>
<tr>
<td><em>Jaumea carnosa</em></td>
<td>Fleshy jaumea</td>
</tr>
<tr>
<td><strong>Juncus acutus</strong> ssp. <em>leopoldii</em></td>
<td>Leopold rush</td>
</tr>
<tr>
<td><em>Leymus triticoides</em></td>
<td>Alkali rye grass</td>
</tr>
<tr>
<td><em>Limonium californicum</em></td>
<td>Western marsh-rosemary</td>
</tr>
<tr>
<td><em>Malvella leprosa</em></td>
<td>Alkali-mallow</td>
</tr>
<tr>
<td><em>Monanthochloe littoralis</em></td>
<td>Shoregrass</td>
</tr>
<tr>
<td><strong>SEED MIX</strong></td>
<td></td>
</tr>
<tr>
<td><em>Centromadia (Hemizonia) parryi</em> ssp. <em>australis</em></td>
<td>Southern tarplant</td>
</tr>
<tr>
<td><em>Conyza coulteri</em></td>
<td>Coulter’s horseweed</td>
</tr>
<tr>
<td><em>Frankenia salina</em></td>
<td>Alkali heath</td>
</tr>
<tr>
<td><em>Heliotropium curassavicum</em></td>
<td>Salt heliotrope</td>
</tr>
<tr>
<td><strong>Lasthenia glabrata</strong> ssp. <em>coulteri</em></td>
<td>Coulter’s goldfields</td>
</tr>
<tr>
<td><em>Spergularia macrotheca</em></td>
<td>Sticky sandspurry</td>
</tr>
<tr>
<td><em>Spergularia marina</em></td>
<td>Salt marsh sandspurry</td>
</tr>
<tr>
<td><em>Suaeda calceoliformis</em></td>
<td>Horned sea-blite</td>
</tr>
<tr>
<td><strong>Symphyotrichum (Aster) subulatum</strong> var. <em>ligulatum</em></td>
<td>Annual saltmarsh aster</td>
</tr>
</tbody>
</table>

Note: bold text indicates sensitive species.
2.4 REVEGETATION MAINTENANCE AND HABITAT MONITORING

A seven-year maintenance and monitoring program will be implemented that is consistent with the other wetland mitigation projects that are part of the ASP and according to the Wetland Restoration Plan (URS 2003a). Routine maintenance will include the following tasks:

- Inspections of the channel mouths to detect any blockage, sediment build up, or erosion at the inlets or outlets
- Removal of obstructing vegetation, debris, and sediment from the inlets and outlets of the culverts
- Weeding of the basin, berm slopes, and access corridors on berms to reduce non-native weeds and facilitate revegetation by native plants of areas disturbed during construction
- Re-planting of the revegetated portions of the berms and basin to increase native plant cover in the event that the initial seeding is not adequate
- Maintenance of the temporary sprinkler irrigation system

Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least monthly, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand tools and hand-held weed whips. Herbicides will only be used in situations where manual methods are not effective.

Similar performance criteria set forth by the Airfield Safety Projects Wetland Restoration Project as established in both its Wetland Restoration Plan (URS 2003a) and its CDFG SAA 1600-2003-5060-R5 are proposed for the Basin E/F Tidal Restoration Project. The restoration performance criteria are as follows:

- All installed plants must achieve a 70 percent survival rate by the end of Year 1, and an 80 percent survival rate of the remaining plants by the end of Year 2 and Year 3.
- At the end of the Year 7, there must be a minimum of 75 percent total native plant cover.
- Non-native weeds must remain below 15 percent of total vegetative coverage at all times during the seven year period. By the end of Year 7 the restoration site shall not have more than ten percent non-native cover. Non-native grasses and common naturalized species that are not aggressive such as brass buttons (*Cotula coronopifolia*) are not included in this performance criteria.
- The Project site must be without supplemental irrigation for a minimum of three years.
- Except for pickleweed, no single species shall constitute more than 50 percent of the vegetative cover.
• No woody invasive species shall be present and herbaceous invasive species shall not exceed 5 percent cover.

In addition, the Project will be monitored, to the extent practicable, to assess performance (i.e., are the habitat and hydraulic objectives being met) and if the created tidal habitat is being used by target species (i.e., BSS, wandering skippers, pygmy blue butterflies, tidewater gobies, etc.).

Formal site inspections to monitor progress towards the performance criteria will be conducted. The Project site will be quantitatively monitored twice a year in May and September for seven years. This restoration monitoring methodology emulates that performed by URS for the Airport Safety Area Grading Restoration Project (URS 2006b), where quantitative monitoring was conducted twice annually to capture seasonal variations in growing periods for different plant species. The Safety Area Grading Restoration Project is a good model for restoration monitoring because it included some of the same native wetland and transitional wetland plant species, and successfully achieved the performance criteria after seven years of monitoring and maintenance. In addition, qualitative site assessments will be conducted by a URS biologist to document weed problems or other issues to be addressed by the maintenance crew. Site assessments will be conducted twice a month from February through April and once a month from May through December. Native plant and weed cover will be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 7.

The Airport will prepare annual restoration status reports on the condition of the Basin E/F Tidal Restoration Project that is consistent with the other wetland mitigation sites annual reporting. The annual revegetation monitoring period will span 12 months following completion of revegetation of the Project site. Annual reports shall be completed one month after the end of the monitoring period and submitted to appropriate permitting agencies. The annual reports will contain a quantitative analysis of attainment of performance standards. In the event that performance criteria are not being met, the Airport will re-seed and re-plant the affected areas and initiate a new maintenance and monitoring program.

2.5 CONSTRUCTION

Construction work will occur during the period August 1, 2010 to November 1, 2010 when the soils are driest at the basins, stormwater runoff in Tecolotito Creek is generally absent, and bird breeding is completed. The staging area for Basin E/F will be located near the V-54 gate.

Work hours will be 7:00 a.m. to 4:00 p.m. on weekdays only. Work can proceed at the basins without interfering with airfield operations. Typical equipment at the Project site will include an excavator or grade-all, backhoe, loader, and 10-cubic yard haul trucks. The typical daily work crew at a basin will be three to five workers. The average daily traffic to and from the
basins (one way) will be about 8 trips per day. The estimated peak daily truck trips during hauling events will be 20 trucks.

A projected construction phasing is presented below in Table 2. The exact construction phasing and duration of individual tasks will be determined by the construction contractor.

### TABLE 2
CONSTRUCTION PHASING

<table>
<thead>
<tr>
<th>Construction Activity</th>
<th>Duration (Weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilize</td>
<td>1</td>
</tr>
<tr>
<td>Establish vehicle access routes; remove vegetation and stockpile</td>
<td>1</td>
</tr>
<tr>
<td>Excavation, grading, and hauling</td>
<td>9</td>
</tr>
<tr>
<td>Dewatering system installation in Tecolotito Creek</td>
<td>1 (simultaneous with grading)</td>
</tr>
<tr>
<td>Remove culverts</td>
<td>2 (simultaneous with grading)</td>
</tr>
<tr>
<td>Install sprinkler irrigation system</td>
<td>2</td>
</tr>
<tr>
<td>Turn under pickleweed and topsoil in basin bottom; install plants and seeds</td>
<td>2</td>
</tr>
<tr>
<td>Clean up</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16 (3 months)</strong></td>
</tr>
</tbody>
</table>

Based on the 2005 excavation activities, a dewatering system is not expected to be required to conduct the grading operations in the basin. If the 2009/2010 winter is very wet, the Airport may need to pump any standing water from the locations of the basins to be excavated three to four weeks prior to grading. A portable sump pump would be placed in the standing water. Pumped water would be discharged to Tecolotito Creek. Once the pumping has ceased, several small sump pumps would be placed in auger holes (approximately three to five feet deep) established in the center of the future basins. Groundwater would be pumped from these point locations and discharged to the creeks. This operation will ensure that the subgrade will be suitable for grading operations in August.

Installation of the bladder dams on Tecolotito Creek would wait until excavation, grading, and application of topsoil with pickleweed has been completed for the majority of the basin. This will minimize the amount of time the bladder dams are installed to minimize impacts to Tecolotito Creek. Once the bladder dams are installed and the fish clearance has been conducted, the sluice gate and two culverts on the southern berm adjacent to Tecolotito Creek will be removed. All construction activities involving heavy equipment shall be completed prior to removal of the bladder dams.
2.5.1 Areas and Quantities

Estimated areas and quantities associated with the Project are listed below in Tables 3 and 4, respectively.

**TABLE 3**
**ESTIMATED AREAS**

<table>
<thead>
<tr>
<th>Area of Interest</th>
<th>Basin E/F Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total new tidal basin area (not including experimental basin or upland areas above 7 foot elevation)</td>
<td>9.3 acres</td>
</tr>
<tr>
<td>Total footprint (all basin and upland areas being graded, excluding access roads)</td>
<td>10.3 acres</td>
</tr>
<tr>
<td>Total upland areas to be graded (greater than 7 foot elevation)</td>
<td>1.0 acres</td>
</tr>
<tr>
<td>Temporary access roads to basin and dewatering area on Tecolotito Creek</td>
<td>0.9 acres</td>
</tr>
</tbody>
</table>

**TABLE 4**
**ESTIMATED QUANTITIES**

<table>
<thead>
<tr>
<th>Item</th>
<th>Basin E/F Quantity (Cubic Yards)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>24,885</td>
</tr>
<tr>
<td>Fill (including rock)</td>
<td>2,203</td>
</tr>
<tr>
<td>Net</td>
<td>12,682</td>
</tr>
</tbody>
</table>

2.5.2 Erosion Control and Stormwater Pollution Prevention Plan

In order to protect Goleta Slough for erosion and runoff, a proposed erosion control plan has been developed. The Best Management Practices (BMPs) shown on the preliminary drawings and the narrative provided in Appendix E comprise the draft Stormwater Pollution Prevention Plan. The SWPPP conforms with the required elements of the construction stormwater permit issued by the State of California, State Water Resources Control Board (Order 99-08-DWQ, NPDES General Permit for Storm Water Discharges Associated with Construction Activity [General Permit] to Include Small Construction Activity).

2.6 REQUIRED PERMITS

The proposed Project will require the following permits and approvals:

- Coastal Development Permit issued by the California Coastal Commission
- Grading and building permits from the City Building Department
• U.S. Army Corps of Engineers (Corps) permits under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act for work in wetlands and tidal channels

• California Department of Fish and Game (CDFG) Streambed Alteration Agreement (SAA) for work in Tecolotito Creek and Foxtrot Channel

• Endangered species clearance by the U.S. Fish and Wildlife Service and National Marine Fisheries Service (issued through the Corps permit process)

• Regional Water Quality Control Board (RWQCB) – 401 water quality certification for the Corps permit, and National Pollutant Discharge Elimination System (NPDES) Waste Discharge Requirements for dewatering operations
SECTION 3
ENVIRONMENTAL SETTINGS AND BIOLOGICAL RESOURCES

The following is a discussion of the environmental settings and biological resources currently present in the Project site and its vicinity. Also discussed is the methodology used to obtain data on the environmental setting and biological resources.

3.1 STUDY METHODS

Described below is the survey methodology used to obtain data on the environmental setting and biological resources analyzed within the Project site. Table 5 provides a summary of the surveys completed within Basin E/F for use in this report.

3.1.1 Existing Vegetation

A reconnaissance survey of the Project site was conducted by URS biologists Johanna Kisner and Julie Love on May 21, 2009. The following is the methodology used to create the existing vegetation map as presented in the Biological Assessment and Impact Analysis of the Santa Barbara Airport Aviation Facilities Plan, which was originally written by SAIC in 2001 (SAIC 2001) and updated by URS in 2006 (URS 2006a):

“(Within the Airport the) vegetation was characterized using aerial photographs in conjunction with reconnaissance surveys in the field. More recently, URS updated and mapped vegetation types and jurisdictional wetland habitats according to criteria of the U.S. Army Corps of Engineers and the California Coastal Commission (Woodward-Clyde Consultants 1996). The URS findings are broadly consistent with earlier vegetation mapping and survey efforts of Ferren and Rindlaub (1983) regarding the delineation of wetland and upland habitats and the occurrence of sensitive plant species. This baseline information has been augmented with field observations made during the preparation of (the Biological Assessment and Impact Analysis of the Santa Barbara Airport Aviation Facilities Plan [SAIC 2001]).”

3.1.2 Special-status Species

A biological literature and database review were performed to gather existing information on special-status plant and wildlife species that are known to occur at the Project site. The following databases were searched for pertinent information: the CDFG California Natural Diversity Database (CNDDB) within the Goleta, CA U.S. Geological Survey (USGS) 7.5-minute quadrangles Lake Cachuma, San Marcos Pass, Little Pine Mountain, Dos Pueblo Canyon, Goleta, and Santa Barbara, CA (CDFG 2009), the U.S. Fish and Wildlife Service (USFWS) Ventura Field Office listing of special-status species (USFWS 2009), and the California Native Plant Society’s (CNPS) Inventory of Rare Plants (CNPS 2009). A literature
<table>
<thead>
<tr>
<th>Common and Scientific Name</th>
<th>Date</th>
<th>Type of Survey Conducted</th>
<th>Associated Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant Species</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern tarplant (Centromadia [Hemizonial] parryi ssp. australis)</td>
<td>Mapped in July 2009</td>
<td>Visual observations and mapping</td>
<td>Seeded as part of the Safety Area Grading Project (URS 2007b) and the Tidal Restoration Demonstration Project (URS 2009). Mapped as part of the Basin E/F Tidal Restoration Project</td>
</tr>
<tr>
<td>Existing basin E/F vegetation</td>
<td>Mapped in 1999 by WWC and updated by WWC in 2001 and by URS in 2003</td>
<td>Characterized using aerial photographs in conjunction with reconnaissance surveys in the field</td>
<td>Biological Resources Report: Tidal Restoration Field Experiment (URS 2003b)</td>
</tr>
<tr>
<td><strong>Wildlife Species</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tidewater goby (Eucyclogobius newberryi)</td>
<td>Surveys conducted in May 2008 and October 2008</td>
<td>USFWS protocol presence/absence surveys (USFWS 2006b)</td>
<td>Tidal Restoration Demonstration Project (URS 2009)</td>
</tr>
<tr>
<td>California brown pelican (Pelecanus occidentalis californicus)</td>
<td>Surveys conducted from March 2004 through November 2008</td>
<td>Weekly and bi-weekly surveys</td>
<td>Tidal Restoration Demonstration Project (URS 2009)</td>
</tr>
<tr>
<td>Light-footed clapper rail (Rallus longirostris levipes)</td>
<td>Surveys conducted from March 2004 through November 2008</td>
<td>Weekly and bi-weekly surveys</td>
<td>Tidal Restoration Demonstration Project (URS 2009)</td>
</tr>
<tr>
<td>Belding’s savannah sparrow (Passerculus sandwichensis beldingi)</td>
<td>Surveys conducted from May 2001, June 2006</td>
<td>Annual surveys</td>
<td>Belding savannah sparrow surveys (CDFG 2001 and 2006)</td>
</tr>
<tr>
<td>Surveys conducted May 2003</td>
<td>Annual surveys</td>
<td>Biological Resources Report: Tidal Restoration Field Experiment (URS 2003b)</td>
<td></td>
</tr>
<tr>
<td>Surveys conducted from March 2004 through November 2008</td>
<td>Weekly and bi-weekly surveys</td>
<td>Tidal Restoration Demonstration Project (URS 2009)</td>
<td></td>
</tr>
<tr>
<td>Surveys conducted May 2009</td>
<td>Annual surveys</td>
<td>Basin E/F Tidal Restoration Project</td>
<td></td>
</tr>
</tbody>
</table>
review was conducted to identify habitat requirements and distribution of these species. This information was augmented by recent field observations of URS biologists. The methodology for species specific surveys is described below. Special-status species that were identified by the CNDDB search and known to occur in the region were assessed for potential presence at the Project site, and are presented in Table 6. A list of birds and benthic macroinvertebrates observed at the Project site is provided in Appendix D.

3.1.2.1  **Plant Species**

3.1.2.1.1 **Southern Tarplant** (*Centromadia [Hemizonia] parryi ssp. australis*). Visual observations were conducted of southern tarplant during regular visits to the Airport. In July 2009, southern tarplant was mapped for the Basin E/F Tidal Restoration Project based on previous observations in 2007/2008.

3.1.2.1.2 **Coulter’s goldfields** (*Lasthenia glabrata ssp. coulteri*). Visual observations of and mapping were conducted of Coulter’s goldfields in Spring of 2001, 2002, 2003, 2004, 2005, 2006, and 2007 as part of the Safety Area Grading Project (URS 2007b). Mapping of population locations was conducted with a Trimble GeoXT™ GPS unit capable of sub-meter accuracy or by hand on aerial maps.

3.1.2.2  **Wildlife Species**

3.1.2.2.1 **Tidewater Goby** (*Eucyclogobius newberryi*). In 2008, fish population-monitoring was added to the suite of monitoring surveys conducted by URS for the Tidal Restoration Demonstration Project to determine species community composition within the tidal basin. USFWS protocol presence/absence surveys (USFWS 2006) for tidewater goby consisted of a single (May 19, 2009 survey) and five (October 7, 2009 survey) seine haul(s) using a 1/8 inch mesh beach seine. Fish collected in the beach seine were identified to species, measured (for length), and immediately returned to the water. See the Tidal Restoration Demonstration Project Year 3 Annual Report (URS 2009) for further details on methodology.

3.1.2.2.2 **Belding’s Savannah Sparrow** (*Passerculus sandwichensis beldingi*) and Other Bird Species. In 2003, URS biologist, David Compton, surveyed for Belding’s savannah sparrow in Basins E/F, to confirm the results of previous surveys (Zembal and Hoffman 2002, Holmgren and Kisner 1994, CDFG 2001 and 2006) for those areas prior to initiation of the Tidal Restoration Demonstration Project (URS 2003b).

On May 21, 2009, Mr. Compton conducted a BSS surveys at Basin E/F to compare current conditions with those in 2003. The survey was conducted from 7:48 a.m. to 9:21 a.m. under overcast skies, with mild temperatures and light southeast winds.
### TABLE 6
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE PROJECT SITE

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>Habitat</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
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</tr>
<tr>
<td><em>Eumops perotis</em></td>
<td><em>Western mastiff bat</em></td>
<td>CSC</td>
<td>Many open, semi-arid to arid habitats, including conifer &amp; deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Nyctinomops</em></td>
<td><em>Big free-tailed bat</em></td>
<td>CSC</td>
<td>Low-lying arid areas in southern California. Need high cliffs or rocky outcrops for roosting sites.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Athene (Speotyto)</em></td>
<td><em>Burrowing owl</em></td>
<td>CSC (burrow sites and some wintering sites)</td>
<td>Rare winter visitor found in open grasslands and agricultural fields.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Buteo regalis</em></td>
<td><em>Ferruginous hawk</em></td>
<td>WL (nonbreeding/ wintering)</td>
<td>Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Charadrius</em></td>
<td><em>Western snowy plover</em></td>
<td>FT, CSC (nesting)</td>
<td>Occurs in sandy beach habitat. Needs sandy, gravelly or friable soils for nesting.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Circus cyaneus</em></td>
<td><em>Northern harrier</em></td>
<td>CSC (nesting)</td>
<td>Common forager in open grassland, scrub and marshes.</td>
<td>Expected to forage on the Project site.</td>
</tr>
<tr>
<td><em>Elanus leucurus</em></td>
<td><em>White-tailed kite</em></td>
<td>FP</td>
<td>Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.</td>
<td>Expected to forage at the Project site.</td>
</tr>
<tr>
<td><em>Empidonax traillii</em></td>
<td><em>Southwestern willow flycatcher</em></td>
<td>FE, SE</td>
<td>Rare breeder in willow-riparian habitat.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
</tbody>
</table>
### SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE PROJECT SITE

<table>
<thead>
<tr>
<th>Scientific Name</th>
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<th>Habitat</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gymnogyps california</td>
<td>California condor</td>
<td>FE, FP, SE</td>
<td>Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td>Haliaeetus leucocephalus</td>
<td>Southern bald eagle</td>
<td>FP, SE</td>
<td>Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine (<em>Pinus ponderosa</em>). Roosts communally in winter. Seen in southern Santa Barbara County very rarely in migration, and not in the breeding season.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td>Lanius ludovicianus</td>
<td>Loggerhead shrike</td>
<td>CSC (nesting)</td>
<td>Rare breeder and fairly common winter visitor along Santa Barbara County's south coast.</td>
<td>Expected to occur in the transitional wetland edges of the Project site.</td>
</tr>
<tr>
<td>Passerculus sandwichensis</td>
<td>Belding's savannah sparrow</td>
<td>SE</td>
<td>Year-round resident in salt marshes dominated by pickleweed.</td>
<td>Expected to occur at the Project site.</td>
</tr>
<tr>
<td>Pelecanus occidentalis</td>
<td>Brown pelican</td>
<td>FE, FP, SE</td>
<td>Common, year-round visitor to coastal regions Santa Barbara County. Found in estuarine, marine subtidal, and marine pelagic waters along the California coast. They usually rest on water or inaccessible rocks (either offshore or on mainland), but also uses mudflats, sandy beaches, wharfs, and jetties.</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td>Rallus longirostris levipes</td>
<td>Light-footed clapper rail</td>
<td>FE, FP, SE</td>
<td>Prefers tidal marshes and is associated with habitats dominated by very specific plants. According to Santa Barbara Museum of Natural History records, it has not been recorded in Santa Barbara County since 2004 and is thought to be extirpated as a breeder from the area. Clapper rails historically occurred in Goleta Slough, Lehman (1994) notes that this species has not occurred here or at any other site in the county outside Carpinteria Salt Marsh in “several decades.”</td>
<td>Not expected to occur in the Project site due to lack of suitable habitat.</td>
</tr>
</tbody>
</table>
### TABLE 6 (CONTINUED)

**SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE PROJECT SITE**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>Habitat</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Riparia riparia</em></td>
<td>Bank swallow</td>
<td>ST</td>
<td>Rare spring and fall transient along the Santa Barbara coast. Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes or the ocean to dig nesting hole. The Project site is out of range for nesting.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Vireo bellii pusillus</em></td>
<td>Least Bell’s vireo</td>
<td>FE, SE</td>
<td>Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, coyote bush (<em>Baccharis</em> spp.), mesquite (<em>Prosopis</em> spp.).</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Actinemys marmorata pallida</em></td>
<td>Southwestern pond turtle</td>
<td>CSC</td>
<td>Found in permanent and intermittent aquatic habitats primarily in freshwater.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Thamnophis hammondii</em></td>
<td>Two-striped garter snake</td>
<td>CSC</td>
<td>Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Anaxyrus californicus</em></td>
<td>Arroyo toad</td>
<td>FE, CSC</td>
<td>Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Rana draytonii</em></td>
<td>California red-legged frog</td>
<td>FT, CSC</td>
<td>Found in freshwater ponds or perennial streams providing deep pools with emergent vegetation; can occur along coastal lagoons. No records of occurrence within the Goleta Slough ecosystem.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
</tbody>
</table>
TABLE 6 (CONTINUED)
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE PROJECT SITE

<table>
<thead>
<tr>
<th>Scientific Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Fish</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncorhynchus mykiss</td>
<td>Southern California steelhead trout</td>
<td>FE, CSC</td>
<td>Typically migrate to marine waters after spending one to two years in freshwater, and then spend two or three years in the ocean before returning to streams to spawn.</td>
<td>Low potential to occur in Tecolotito Creek, due to upstream barriers to spawning habitat above Hollister Ave. and no records indicating it occurs there</td>
</tr>
<tr>
<td>Eucyclogobius newberryi</td>
<td>Tidewater goby</td>
<td>FE, CSC</td>
<td>Sandy-bottomed brackish coastal lagoons.</td>
<td>Low potential to occur at the Project site. Recent studies did not observe tidewater gobies in the experimental tidal basin and surveys indicate that the majority of tidewater gobies are present at the upstream end of Tecolotito and Carneros Creeks where there is more freshwater influence</td>
</tr>
<tr>
<td><strong>Insects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cicindela hirticollis gravida</td>
<td>Sandy beach tiger beetle</td>
<td>SAL</td>
<td>Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
</tbody>
</table>
### TABLE 6 (CONTINUED)
**SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE PROJECT SITE**

<table>
<thead>
<tr>
<th>Scientific Name</th>
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<th>Status</th>
<th>Habitat</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Coelus globosus</td>
<td>Globose dune beetle</td>
<td>SAL</td>
<td>Inhabitant of coastal sand dune habitat, from bodega head in Sonoma County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td>Danaus plexippus</td>
<td>Monarch butterfly</td>
<td>SAL</td>
<td>Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.</td>
<td>Not expected to occur at the Project site due to lack of suitable habitat; potential to occur in the Eucalyptus grove near UCSB at the edge of Goleta Slough approximately 2000 feet from the Project site</td>
</tr>
</tbody>
</table>

**Mollusks**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tryonia imitator (=California brackishwater snail)</td>
<td>Mimic tryonia</td>
<td>SAL</td>
<td>Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.</td>
</tr>
</tbody>
</table>

**Plants**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anomobryum julaceum</td>
<td>Slender silver moss</td>
<td>SPL, CNPS List 2.2</td>
<td>Broadleaved upland forest, lower montane coniferous forest, north coast coniferous forest. Moss which grows on damp rocks and soil; usually seen on road cuts. 100–1000m.</td>
</tr>
<tr>
<td>Arctostaphylos refugioensis</td>
<td>Refugio manzanita</td>
<td>SPL, CNPS List 1B.2 (fairly endangered)</td>
<td>Chaparral, sandstone. 300–820m.</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Status</td>
<td>Habitat</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Atriplex coulteri</td>
<td>Coulter's saltbush</td>
<td>SPL, CNPS List 1B.2</td>
<td>Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Ocean bluffs, ridge tops, as well as alkaline low places. 10–440m.</td>
</tr>
<tr>
<td>Atriplex serenana var. davidsonii</td>
<td>Davidson's saltscale</td>
<td>SPL, CNPS List 1B.2</td>
<td>Coastal bluff scrub, coastal scrub. Alkaline soil. 3–250m.</td>
</tr>
<tr>
<td>Calochortus weedii var. vestus</td>
<td>Late-flowered</td>
<td>SPL, CNPS List 1B.2</td>
<td>Chaparral, cismontane woodland. Dry, open coastal woodland, chaparral; on serpentine soils. 270–1,910m.</td>
</tr>
<tr>
<td>Calystegia sepium ssp. binghamiae</td>
<td>Santa Barbara</td>
<td>SPL, CNPS List 1A</td>
<td>Coastal marshes. 0–30m.</td>
</tr>
<tr>
<td>Centromadia parryi ssp. australis</td>
<td>Southern tarplant</td>
<td>SPL, CNPS List 1B.1</td>
<td>Marshes and swamps (margins), valley and foothill grassland. Often in disturbed sites near the coast at marsh edges; also in alkaline soils sometimes with saltgrass.</td>
</tr>
<tr>
<td>Delphinium umbraculorum</td>
<td>Umbrella larkspur</td>
<td>SPL, CNPS List 1B.3</td>
<td>Cismontane woodland, mesic sites. 400–1600m.</td>
</tr>
<tr>
<td>Fritillaria ojaiensis</td>
<td>Ojai fritillary</td>
<td>SPL, CNPS List 1B.2</td>
<td>Broadleaved upland forest (mesic), chaparral, lower montane coniferous forest. Rocky sites; one reported as “moist shale talus.” 300–670m.</td>
</tr>
<tr>
<td>Horkelia cuneata ssp. puberula</td>
<td>Mesa horkelia</td>
<td>SPL, CNPS List 1B.1</td>
<td>Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. 70–810m.</td>
</tr>
<tr>
<td>Juncus luciensis</td>
<td>Santa Lucia dwarf</td>
<td>SPL, CNPS List 1B.2</td>
<td>Vernal pools, meadows, lower montane coniferous forest, chaparral, great basin scrub. Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. 300–2,040m.</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Status</td>
<td>Habitat</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------</td>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><em>Lasthenia conjugens</em></td>
<td>Contra Costa goldfields</td>
<td>SPL, CNPS List 1B.1 (seriously endangered)</td>
<td>Valley and foothill grassland, vernal pools, cismontane woodland. Extirpated from most of its range; extremely endangered. Vernal pools, swales, low depressions, in open grassy areas. 1–445m.</td>
</tr>
<tr>
<td><em>Lasthenia glabrata</em></td>
<td>Coulter's goldfields</td>
<td>SPL, CNPS List 1B.1 (seriously endangered)</td>
<td>Coastal salt marshes, playas, valley and foothill grassland, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1–1,400m.</td>
</tr>
<tr>
<td><em>Layia heterotricha</em></td>
<td>Pale-yellow layia</td>
<td>SPL, CNPS List 1B.1 (seriously endangered)</td>
<td>Cismontane woodland, pinyon-juniper woodland, valley and foothill grassland. Alkaline or clay soils; open areas. 270–1,365 (2675)m.</td>
</tr>
<tr>
<td><em>Lonicera subspicata</em></td>
<td>Santa Barbara honeysuckle</td>
<td>SPL, CNPS List 1B.2 (fairly endangered)</td>
<td>Chaparral, cismontane woodland, coastal scrub. 35–1,000m.</td>
</tr>
<tr>
<td><em>Malacothrix saxatilis</em></td>
<td>Carmel Valley malacothrix</td>
<td>SPL, CNPS List 1B.2 (fairly endangered)</td>
<td>Chaparral. Rock outcrops or steep rocky road cuts. 25–1,215m.</td>
</tr>
<tr>
<td><em>Quercus dumosa</em></td>
<td>Nuttall's scrub oak</td>
<td>SPL, CNPS List 1B.1 (seriously endangered)</td>
<td>Closed-cone coniferous forest, chaparral, coastal scrub. Generally on sandy soils near the coast; sometimes on clay loam. 15–400m.</td>
</tr>
<tr>
<td><em>Scrophularia atrata</em></td>
<td>Black-flowered figwort</td>
<td>SPL, CNPS List 1B.2 (fairly endangered)</td>
<td>Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, riparian scrub. Sand, diatomaceous shales, and soils derived from other parent material; around swales and in sand dunes. 10–250m.</td>
</tr>
</tbody>
</table>
## TABLE 6 (CONTINUED)
**SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE PROJECT SITE**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>Habitat</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Suaeda esteroa</em></td>
<td>Estuary seablite</td>
<td>SPL, CNPS List 1B.2 (fairly endangered)</td>
<td>Marshes and swamps. Coastal salt marshes in clay, silt, and sand substrates. 0–5m.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Thelypteris puberula var. sonorensis</em></td>
<td>Sonoran maiden fern</td>
<td>SPL, CNPS List 2.2 (fairly endangered in California, but common elsewhere)</td>
<td>Meadows and seeps. Along streams, seepage areas. 50–550m.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
<tr>
<td><em>Thermopsis macrophylla</em></td>
<td>Santa Ynez false lupine</td>
<td>SPL, CNPS List 1B.3 (not very endangered)</td>
<td>Chaparral. In open areas such as fuel breaks, after burns; on sandstone. 420–2,050m.</td>
<td>Not expected to occur on the Project site due to lack of suitable habitat.</td>
</tr>
</tbody>
</table>

### Sensitive Habitats

- **Coastal Salt Marsh**
- **Southern California Steelhead Stream**
- **Southern Vernal Pool**

**Status:**
- Federal: Federally Listed Endangered (FE), Federally Listed Threatened (FT).
- State: State Listed Endangered (SE), State Listed Threatened (ST), California Fully-protected (FP), California Species of Special Concern (CSC), CDFG Watch List (WL), CDFG Special Animals List (SAL), CDFG Special Plants List (SPL).
- Other: California Native Plant Society (CNPS), Species of Local Concern (SLC).
Between March 2004 and November 2008, URS collected data on bird variety and use in Basin E/F as part of the Tidal Restoration Demonstration Project. Bird surveys were conducted weekly and biweekly by URS biologists, and documented bird use of the experimental tidal basin in comparison to other Airport basins. As part of these efforts abundance and use by California brown pelican (*Pelecanus occidentalis californicus*), Light-footed clapper rail (*Rallus longirostris levipes*), and BSS were recorded. See the Tidal Restoration Demonstration Project Year 3 Annual Report (URS 2009) for further details on methodology.

### 3.2 EXISTING PHYSICAL FEATURES

#### 3.2.1 Basin E/F

Basin E/F is a 13-acre basin located adjacent to Taxiway A. The berm on the west side of the basin is a remnant of Adams Road, and contains two sewer lines that extend across Tecolotito Creek to Goleta West Sanitary District (Figure 3). The top of the berm contained an asphalt road which was removed and restored to native habitat in 2000. The basin is accessed by a gravel service road between Taxiway A and the north side of the basin. Basin E/F previously had a low berm in the middle that was removed in 2000 as part of the Safety Area Grading wetland restoration project, allowing free movement between the two low-lying areas of the basin.

In 2005, the 2.5-acre experimental tidal basin was constructed in the southern portion of Basin F by excavating portions of Basin F and installing a pipe culvert under the berm between the experimentally tidal basin and the tidally influenced Tecolotito Creek. The 36-inch HDPE pipe culvert was installed through the southern berm at the southeast corner of the tidal basin, and was equipped with a sluice gate enabling the Airport to temporarily or permanently terminate tidal inflow, if necessary. A 20-foot-wide channel was created in the center of the basin, extending from the tidal gate. The channel was excavated to about 3.5 to 4 feet in elevation, matching the channel bottom elevation of Tecolotito Creek. This allowed for the fullest range of tidal elevations possible. The remainder of the basin bottom was excavated to an elevation between 4 and 6 feet. A recent topographic survey conducted in July 2009, shows that elevations of main portion of the basin outside of the channel range from 4 to 5.3 feet (see Appendix C, Sheet 3). These elevations are generally lower than the “as built” condition, which implies that some settling occurred over the past 4 years. Low earthen berms were constructed on the north and east sides of the experimental tidal basin at approximately 7.5 foot elevation. The existing berms on the south and west sides of the experimental tidal basin were not modified, except for some temporary vegetation removal and installation of the tide gate and culvert.

The northwest corner Basin F, the non-tidal control basin, is lower than the rest of the basin. It collects precipitation and runoff from a 24-inch RCP culvert that drains the airport infield.
and some runoff from Basin G through another 24-inch RCP culvert. The control basin contains the most freshwater of Basins G and E/F, which can persist for months during wet years while the remainder of the basin is dry. Due to the ponding water in the control basin, it attracts waterfowl during the winter and spring seasons.

Basin E is connected to Tecolotito Creek through a 24-inch diameter CMP culvert in the south berm. The invert elevation of the culvert is 4 feet, which would theoretically allow tidal inflow and outflow. (Note: all tide elevations are relative to Mean Lower Low Water [MLLW], which is roughly equivalent to the topographic map datum of North American Vertical Datum of 1988 [NAVD 88]). However, sediment deposits block the inlet to the culvert. As a result, this basin usually only receives freshwater derived from rainfall and stormwater runoff that discharges to the northwest side of basin from a 24-inch RCP culvert with a backflow prevention mechanism that captures runoff from the airfield (Figure 3). Also, during flood events Basin E, F, and G become hydrologically connected.

In the winter when the mouth of Goleta Slough is open, the low tide is at or below 0 feet elevation. Hence, Basin E/F will drain to Tecolotito Creek during low tide events unless the creek is full with runoff from the watershed. During the summer when the mouth of Goleta Slough is often closed until it is artificially reopened by Flood Control, the lowest tide elevation during the day is typically 3.5 to 4 feet. Theoretically, the basin will drain each day. However, due to the high attenuation of tides in the summer, it is likely that a small amount of water will remain in the bottom channel of the basin, up to 4.5 feet elevation.

### 3.2.2 Basin G

Basin G is a 6.2-acre basin located adjacent to Taxiway A. The berm on the east side of the basin is a remnant of Adams Road described above (Figure 3). The basin is accessed by a gravel service road between Taxiway A and the north side of the basin. Basin G is hydrologically isolated from tidal influence and only becomes filled with water following significant rain events. A 24-inch RCP culvert connects Basin G to the northwestern portion of Basin F, the control basin; however, this culvert is not very effective in draining Basin G, as it is known to become ponded for long periods of time. In wet years, freshwater amphibians (Baja California tree frogs [*Pseudacris hypochondriaca hypochondriaca*]) have been reported breeding in Basin G.

### 3.2.3 Foxtrot Drainage

The Foxtrot Drainage runs northeast to southwest along the eastern edge of Basin E. It is a deeply incised channel which is about four feet deep, with an approximately five foot wide low flow channel and is about 10 to 15 feet wide at top-of-bank. A 24-inch RCP culvert with a backflow prevention mechanism conveys storm water from the Airport infield to the northern portion of Foxtrot Drainage; the waters then flow southwest to Tecolotito Creek. The elevation at the culvert is 3.6 feet and the elevation where Foxtrot Drain meets
Tecolotito Creek is 2.63 feet. There is a dirt access road that is adjacent to the east side of the drainage, which is located within the Safety Area Grading Restoration Site.

3.3 EXISTING VEGETATION TYPES

The vegetation types and dominant plant species in Basin E/F are described below based on a review of the Airport-wide vegetation mapping prepared in 1999 by Woodward-Clyde Consultants and updated in January 2000; and field surveys of the basins by URS biologists in January 2003. The vegetation coding and classification follows the prior mapping efforts at the Airport. The vegetation types observed at the study basins are summarized below in Table 7 and shown on Figure 4. Table 8 is a list of plant species known to occur at the Project site.

A wide variety of vegetation types occur in Basin E/F. The low-lying portions of the basin exhibit three types based on the soil salinity and duration of flooding. Areas that contain water for extended periods of time, such as in the northwest corner of the basin, generally inhibit the development of vegetation due to the effects of standing water. In addition, these areas tend to build up salts over time due to evaporation during the summer and fall. As such, the lowest portions of Basin E/F contain mudflats, saltflats, and scattered pickleweed (*Salicornia virginica*). Intermediate elevations in the basin contain pickleweed marsh with scattered bulrush (*Bolboschoenus [Scirpus] maritimus*) and cattail (*Typha spp.*) plants, indicating freshwater conditions. The higher elevations in the basin bottom, which encompass most of the basin, are dominated by dense, continuous pickleweed marsh.

The berms along the north and west sides of Basin E/F were graded and planted with native wetland herbs and shrubs in 2000 by the Airport as part of the wetland restoration for the Safety Area Grading Project (URS 2007b). The dominant species include pickleweed, alkali heath (*Frankenia salina*), and quail bush (*Atriplex lentiformis*). The sides of the berms contain a mixture of pickleweed, alkali heath, quail bush, coyote bush, and non-native weeds. On December 20, 2006, the southern berm was seeded by the Airport under the provisions of the wetland restoration program for the Airfield Safety Projects (URS 2007a) and Tecolotito Berm Restoration Project (URS 2007c). Species that were seeded included California sagebrush (*Artemisia californica*), quailbush, alkali heath, wild heliotrope (*Heliotropium curassavicum*), verbena (*Verbena lasiostachys*), and coast goldenbush (*Isocoma menziesii*). Prior to the start of the tidal basin experiment, Basin F was hydrologically isolated from the Goleta Slough, and was dominated by pickleweed (*Salicornia virginica*) with patches of prairie bulrush (*Bolboschoenus [Scirpus] maritimus*). During the clearing and grubbing of the tidal basin, the contractor salvaged the top layer of existing pickleweed and three inches of topsoil to create a stockpile. After grading was completed this material was turned back into the soil of the new tidal basin from approximately 5 to 6.5 feet in elevation, excluding the channel in the basin bottom and the top of the berms. Following construction, the northern, eastern, and western berms were hydroseeded with low-growing native plants from
### TABLE 7
**SUMMARY OF VEGETATION TYPES AND DOMINANT SPECIES**

<table>
<thead>
<tr>
<th>Map Code</th>
<th>Type</th>
<th>Dominant Species</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pickleweed marsh</td>
<td>Pickleweed (<em>Salicornia virginica</em>), Spreading alkali-weed (<em>Cressa truxillensis var. truxillensis</em>), Alkali heath (<em>Frankenia salina</em>), Saltgrass (<em>Distichlis spicata</em>), Alkali-mallow (<em>Malvella leprosa</em>)</td>
<td>Low-lying non-tidal basin bottoms</td>
</tr>
<tr>
<td>6</td>
<td>Seasonal wetland depressions</td>
<td>Spreading alkali-weed (<em>Cressa truxillensis var. truxillensis</em>), Alkali heath (<em>Frankenia salina</em>), Saltgrass (<em>Distichlis spicata</em>), southern tarplant (<em>Centromadia parryi ssp. australis</em>)</td>
<td>Seasonal Wetland Depressions (On the northern, eastern, and western perimeter of Basin E/F, installed by the Airport in 2000)</td>
</tr>
<tr>
<td>7</td>
<td>Transitional wetlands</td>
<td>Spreading alkali-weed (<em>Cressa truxillensis var. truxillensis</em>), Alkali heath (<em>Frankenia salina</em>), Saltgrass (<em>Distichlis spicata</em>), Brewer saltbush (<em>Atriplex lentiformis var. breviri</em>)</td>
<td>Transitional Wetlands (On the northern, eastern, and western perimeter of Basin E/F, installed by the Airport in 2000)</td>
</tr>
<tr>
<td>8</td>
<td>Annual grassland series (wetland affinities)</td>
<td>Italian ryegrass (<em>Lolium multiflorum</em>), Mediterranean barley (<em>Hordernum marinum</em>), ripgut brome (<em>Bromus diandrus</em>)</td>
<td>Moist upland areas within the basin bottom</td>
</tr>
<tr>
<td>10</td>
<td>Cattail series</td>
<td>Cattail (<em>Typha spp.</em>)</td>
<td>Low-lying non-tidal basin bottoms where freshwater predominates</td>
</tr>
<tr>
<td>11</td>
<td>Bulrush marsh</td>
<td>Alkali bulrush (<em>Bolboschoenus [Scirpus] maritimus</em>)</td>
<td>Low-lying non-tidal basin bottoms where freshwater predominates</td>
</tr>
<tr>
<td>16</td>
<td>Mudflat or saltflat (non-tidal)</td>
<td>N/A</td>
<td>Low-lying non-tidal basin bottoms with high saline soils</td>
</tr>
<tr>
<td>17</td>
<td>Open water or mudflats (tidal)</td>
<td>N/A</td>
<td>Open Water or Mudflats (Tidal)</td>
</tr>
<tr>
<td>21</td>
<td>Ruderal vegetation</td>
<td>Black mustard (<em>Brassica nigra</em>), Horseweed (<em>Coryza canadensis</em>), White sweetclover (<em>Mellolus alba</em>), Cocklebur (<em>Xanthium strumarium</em>), Italian ryegrass (<em>Lolium multiflorum</em>), Bristly ox-tongue (<em>Picris echioides</em>)</td>
<td>Man-made berms around the basins</td>
</tr>
<tr>
<td>24</td>
<td>Quail bush scrub</td>
<td>Brewer saltbush (<em>Atriplex lentiformis var. breviri</em>)</td>
<td>Patches on the berms</td>
</tr>
<tr>
<td>26</td>
<td>Coyote bush scrub</td>
<td>Coyote brush (<em>Baccharis pilularis</em>)</td>
<td>Patches on the berms</td>
</tr>
</tbody>
</table>
TABLE 8
PROJECT SITE PLANT SPECIES LIST

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Native</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atriplex lentiformis¹</td>
<td>Quailbush</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Atriplex triangulares</td>
<td>Spearscale</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Baccharis pilularis</td>
<td>Coyote bush</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Conyza canadensis</td>
<td>Horseweed</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conyza coulteri</td>
<td>Coulter’s horseweed</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Distichlis spicata</td>
<td>Saltgrass</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Centromadia [Hemezonia] parryi ssp. australis</td>
<td>Southern tarplant</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Frankenia salina¹</td>
<td>Alkali heath</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Heliotropium curassavicium¹</td>
<td>Heliotrope</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Malvella lerosa</td>
<td>Alkali mallow</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Phacelia spp.</td>
<td>Phacelia spp.</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Salicornia virginica¹</td>
<td>Pickleweed</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Salix lasiolepis</td>
<td>Arroyo willow</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Scrophularia californica</td>
<td>Bee plant</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Solanum douglasii</td>
<td>Douglas nightshade</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Urtica dioica</td>
<td>Stinging nettle</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Verbena lasiostachys¹</td>
<td>Verbena</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Non-native</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anagallis arvensis</td>
<td>Scarlet pimpernel</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Cotula coronopfolia¹</td>
<td>African brass-buttons</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Foeniculum vulgare¹</td>
<td>Sweet fennel</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Picris echoides¹</td>
<td>Bristly ox-tongue</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Polypogon monspeliensis¹</td>
<td>Rabbitsfoot grass</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Sonchus spp.</td>
<td>Sow-thistle species</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Source: URS 2009.

¹ Species that were seeded or sprigged.
² Only non-native species for the most current year are shown.

Note: Southern tarplant (Centromadia [Hemezonia] parryi ssp. australis) and Coulter’s goldfields (Lasthenia glabrata ssp. coulteri) were observed in the Project Site vicinity.

Goleta Slough including pickleweed, California sagebrush (Artemisia californica), quailbush (Atriplex lentiformis), alkali heath (Frankenia salina), wild heliotrope (Heliotropium curassavicium), verbena (Verbena lasiostachys), coast goldenbush (Isocoma menziesii), and southern tarplant (Centromadia [Hemezonia] parryi ssp. australis, CNPS List 1B.1). Seeding occurred in the beginning of October 2005. Hydroseed mixed with paper mulch was
FIGURE 4
VEGETATION MAP
distributed on the top of the berms and the basin slopes between 6.5 and 7.5 feet in elevation. These seeded areas were slow to germinate, so a temporary overhead irrigation system was installed on the top of the berms to assist with germination. On December 20, 2006, the southern berm was seeded by hand broadcasting native seed and then manually raking over the seed. Species that were seeded included California sagebrush, quailbush, alkali heath, wild heliotrope, verbena, and coast goldenbush. Revegetation of the southern berm relied on natural rainfall without supplemental irrigation.

3.4 COASTAL ACT WETLANDS

The Project site occurs in the Coastal Zone, and within the original permitting authority of the CCC. As such, the proposed Project will require a CDP from the CCC. Wetlands are defined in Section 30121 of the Coastal Act as follows: “Wetlands means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens.” The operative criterion in the above definition is the presence of shallow water on land. The definition does not reference hydric soils or vegetation types, nor does it state or imply the required duration of inundation. Based on the above language, it appears that the wetland definition from the CCC regulations requires two parameters for vegetated wetlands (i.e., hydrology and wetland plants). However, the CCC typically identifies wetlands based on the presence of a single characteristic – typically, the presence of hydrophytic plants.

The bottom of Basin E/F contains hydric soils, wetland hydrology, and wetland vegetation (where pickleweed marsh occurs). Hence, the bottom of Basin E/F is considered a wetland based on the above guidance. The unvegetated bottom of Tecolotito Creek and Foxtrot Drain are considered Coastal Act wetlands, consisting of intertidal mud flats and open water. The experimental tidal basin is a wetland due to regular inundation by tides and dominance of pickleweed. The banks on the sides of Basin E/F, excluding the tidal basin, may not be considered Coastal Act wetlands because they are not regularly inundated, and they drain freely. However, the banks are dominated by hydrophytic plants (i.e., pickleweed and alkali heath), and are likely to be considered wetlands by CCC staff due to this condition alone.

3.5 ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Section 30107.5 of the Coastal Act defines a “Environmentally sensitive area” as “… any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.” In the Coastal Act, “environmentally sensitive area” is synonymous with “environmentally sensitive habitat area” (ESHA) and “environmentally sensitive habitat.” The City of Santa Barbara’s (City) Local Coastal Plan (LCP) (City 2004) and the LCP Element for the Airport and Goleta Slough (City 2002) do
not define an “environmentally sensitive habitat,” “environmentally sensitive area,” or “environmentally sensitive habitat area.”

The Coastal Act does not specifically state that wetlands are “environmentally sensitive areas” or “environmentally sensitive habitat areas.” Instead, a statement in the 1981 Statewide Interpretive Guidelines for Wetlands and Other Wet Environmentally Sensitive Areas (CCC 1981) provides guidance: “The Commission generally considers wetlands, estuaries, streams, riparian habitats ...to be environmentally sensitive habitat areas because of the especially valuable role of these habitats in maintaining the natural ecological functioning of many coastal habitat areas...” Based on this statement, it is generally the practice of the CCC to consider all wetlands, regardless of size and condition, as ESHAs. Based on these considerations, Basin E/F, Foxtrot Drain, and Tecolotito Creek may be considered ESHAs under the Coastal Act for several reasons. One, wetlands under the Coastal Act are present at all locations. Two, the basins support an endangered species – the Belding savannah sparrow, and the federally endangered, tide water goby, is known to occur in Tecolotito Creek. Three, the creek and ditch represent “streams” that support “riparian habitat,” as defined in the Coastal Act and the 1981 Statewide Interpretive Guidelines for Wetlands and Other Wet Environmentally Sensitive Areas.

3.6 SPECIAL-STATUS SPECIES

As a result of the field and background review, FAA determined that the Project site provides habitat suitable for one federally listed fish species under USFWS jurisdiction, one state listed bird species, and two CNPS listed plant species, which are listed below:

- Tidewater Goby (*Eucyclogobius newberryi*)
- Belding’s Savannah Sparrow (*Passerculus sandwichensis beldingi*)
- Southern Tarplant (*Centromadia [Hemizonia] parryi* ssp. *australis*)
- Coulter’s goldfields (*Lasthenia glabrata* ssp. *coulteri*)

Special-status wildlife species not known to occur in Goleta Slough, but evaluated for potential to occur in the Project site include southern steelhead (*Oncorhynchus mykiss*), California brown pelican (*Pelecanus occidentalis californicus*), and light-footed clapper rail (*Rallus longirostris levipes*).
SECTION 4.0
DESCRIPTION OF SPECIAL-STATUS SPECIES

A description of special-status species that could occur at and near Basins E/F and along Tecolotito Creek is provided below based on biological investigations as described in Section 3.1 Methodology. Special-status species include species designated as endangered or threatened by the state or federal government, Species of Special Concern as designated by the California Department of Fish and Game, or rare plants as designated by the California Native Plant Society. See Figures 5 and 6 for the mapped locations of special-status species.

4.1 TIDEWATER GOBY (EUCYCLOGOBIUS NEWBERRYI)

The tidewater goby is a federally endangered species and state species of special concern. It is a small fish that inhabits brackish water lagoons, estuaries, and lower reaches of coastal streams in California. Historically, the tidewater goby occurred in at least 110 California coastal lagoons from Tillas Slough near the Oregon border to Agua Hedionda Lagoon in northern San Diego County (USFWS 2003). Recently, the tidewater goby was known to occur in about 85 locations, although the number of sites fluctuates with climatic conditions. Today, the most stable populations are in lagoons and estuaries of intermediate sizes (two to 50 hectares) that have remained relatively unaffected by human activities (USFWS 2003).

Tidewater gobies are relatively small and rarely exceed 50 mm in length. They are generally found in shallow lagoons and lower stream reaches where the water is slow moving or fairly still with fairly high dissolved oxygen levels. Gobies prefer water that is brackish to fresh, but are capable of living in saline water ranging from 0 to over 50 parts per thousand (ppt) salinity and at temperatures of up to 23 degrees Celsius (°C). Reported water depth for goby habitat ranges from 25 to 100 cm. Suitable water conditions for nesting have been reported as 5 to 10 ppt salinity and 18 to 22°C, with a sand and/or mud substrate with abundant emergent and submerged vegetation.

The tidewater goby’s breeding season peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and rainfall. Males begin the breeding ritual by digging burrows in clean, course sand. The females then deposit the eggs into the burrows. The males remain in the burrows to guard the eggs. The vertical burrow is approximately 10 to 20 cm into a sandy substrate, usually in water 25 to 50 cm deep, in which the female deposits her eggs. Larvae emerge in 9 to 10 days when they are 5 to 7 mm standard length and live in the water column among vegetation until they are 15 to 18 mm standard length, at which time they become benthic. The males frequently forgo feeding during this period, possibly contributing to the mid-summer mortality noted in some populations. Tidewater gobies feed on small invertebrates, usually mysids, amphipods, ostracods, snails, and aquatic insect larvae, particularly dipterans. Young tidewater gobies probably feed on unicellular phytoplankton or zooplankton (USFWS 2003).
Until August 10, 2006, when tidewater gobies were observed during fish relocation efforts in Tecolotito Creek, they were not known or expected to occur “in either of the major structural basin estuaries (Goleta Slough, Carpinteria Marsh) which have high salinity and are dominated by tidal circulation in the lower reaches” (SAIC 2001). Previously, local populations of tidewater goby were known to occur “in brackish lagoons at the mouths of Tecolote Creek, Bell Canyon Creek, Devereux Creek, Arroyo Burro Creek, Mission Creek and Sycamore Creek (Ambrose et al. 1995). Tidewater goby has been reported from Goleta Slough (MacDonald and Ervin 1974 as cited in Quammen 1983; Fong et al. 1988), but no museum records exist to verify these reports. Sampling in 1987 (Fong et al. 1988) and in 1993 (Ambrose et al. 1995) failed to locate any tidewater gobies in Goleta Slough, and none were assumed to be present” (SAIC 2001).

Since the first tidewater goby was discovered in Tecolotito Creek in 2006, URS has conducted several USFWS presence/absence protocol surveys documenting tidewater goby populations within the Goleta Slough. See Appendix B for a complete account of tidewater goby results documents within the portion of Goleta Sough located within the Airport boundaries. In 2008, URS conducted two protocol surveys in the experimental tidal basin. No tidewater gobies were found. Table 9 is an account of the species and abundance of fishes that were found. Conditions in the experimental tidal basin remain the same, and it is expected that tidewater goby may still be absent from the experimental tidal basin.

**TABLE 9**

**EXPERIMENTAL TIDAL BASIN FISH SPECIES COMPOSITION (2008)**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>5/20/2008</th>
<th>10/7/2008</th>
<th>Species Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longjaw mudsucker</td>
<td>Gillichthys mirabilis</td>
<td>40</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Arrow goby</td>
<td>Clevelandia ios</td>
<td>2</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Topsmelt</td>
<td>Atherinops affinis</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mosquitofish</td>
<td>Gambusia affinis</td>
<td>12</td>
<td>83</td>
<td>95</td>
</tr>
<tr>
<td>California killifish</td>
<td>Fundulus parvipinnis</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Individuals</strong></td>
<td></td>
<td><strong>55</strong></td>
<td><strong>108</strong></td>
<td><strong>163</strong></td>
</tr>
</tbody>
</table>

Note: No tidewater gobies were found.

Tidewater goby do not and can not occur in the remaining areas of Basin E/F because these areas are freshwater habitat that is not suitable for tidewater goby and the basins are not hydrologically connected to the tidally influenced experimental tidal basin (except during extreme storm events where freshwater flows over the berm between the experimental tidal basin and the freshwater control basin). There is a low potential for tidewater goby to occur in Foxtrot Drain and the portion of Tecolotito Creek within the temporary disturbance area,
FIGURE 6
REGIONAL MAP OF BIOLOGICAL RESOURCES
since salinity levels in these areas are typically higher than preferred by tidewater goby, except during storm flows when salinity drops. The average salinity for water quality samples adjacent to and down stream of the Project site was 24.06 ppt after construction of the experimental tidal basin (2006–2008), substantially higher than ideal conditions for the tidewater goby.

4.2 SOUTHERN STEELHEAD (*Oncorhynchus mykiss*)

Steelhead may exhibit anadromy (meaning that they migrate as juveniles from freshwater to the ocean, and then return to the freshwater to spawn) or freshwater residency (meaning that they reside their entire life in freshwater). Resident forms are called rainbow trout, while anadromous forms are termed steelhead. Steelhead typically migrate to marine waters after spending one to two years in freshwater, and then spend two or three years in the ocean before returning to streams to spawn. Adult steelhead are stimulated to begin their upstream migration when there are high winter flows in the stream. The fish move upstream during receding flows when the turbidity levels are improving. Steelhead may migrate upstream when there are suitable flows during the period of December through March.

Spawning occurs from December through June. Depending upon water temperature, steelhead eggs may incubate in nesting gravels for one to three months before hatching and emerging as young juveniles. Juveniles rear in freshwater for one to four years before migrating to the ocean as smolts. Migration to the ocean generally occurs from February through May. Coastal lagoons sometimes provide summer rearing habitat for juveniles.

The minimum depth for migration is about eight inches; however, depth is rarely a limiting factor for migration because migration occurs during high flows. Spawning occurs in cool clear well-oxygenated water with suitable depth, substrate, and velocities. Optimal gravel size ranges from 0.5 to 4 inches in diameter. Spawning generally occurs in water with velocities of two feet per second and depths about 14 inches. Suitable water temperatures for spawning are 39 to 52 degrees Fahrenheit (°F).

Juveniles prefer shallow riffle areas for rearing, with a depth of about 8 to 10 inches. Pools provide over summer refuges for steelhead in ephemeral streams. The range of suitable temperatures for rearing is 45° to 60°F. Gravel beds are preferred rearing habitat.

The southern steelhead trout is designated as a federally-endangered species along the South Coast by the National Marine Fisheries Service (NMFS). There are recent incidental observations of steelhead in many South Coast streams such as Carpinteria, Montecito, and Mission creeks. There is documented evidence on Mission Creek of spawning. There have been anecdotal sightings of steelhead on upper San Jose Creek, and confirmed sightings on Atascadero and Marie Ygnacio creeks in the past several years. The latter sightings indicate that steelhead can move from the ocean into lower Goleta Slough. However, there have been
no sightings or historic records of steelhead along Carneros, San Pedro, and Tecolotito creeks.

It is possible for transitory, individual adult steelhead to attempt to migrate upstream in Tecolotito Creek. However, this occurrence would be considered very unlikely. There are numerous passage impediments upstream of Hollister Avenue. Suitable spawning habitat may be present in Glen Annie Creek; however, summer rearing habitat appears to be limited or absent. Based on this information, steelhead are not expected to occur along Tecolotito Creek in or above Goleta Slough, and therefore not in Basin E/F, as concluded in the Biological Assessment for the Runway Safety Area Extension Project (URS 2001) prepared for, and accepted by, NMFS.

Additionally, the adjacent Tecolotito Creek and its tributary Carneros Creek are designated as critical habitat for the southern California steelhead Evolutionarily Significant Unit (ESU) (NMFS 2005). The Project site occurs within the critical habitat defined as the UCSB (University of California at Santa Barbara) Slough Hydrologic Sub-area (331531) of the South Coast Hydrologic Unit (3315), which is synonymous with Calwater Hydrologic Unit boundaries (NMFS 2005). Although Basin E/F is not designated as critical habitat, it is adjacent to critical habitat and the tidally influenced portion of it (the experimental tidal basin) is hydrologically connected to Tecolotito Creek.

4.3 CALIFORNIA BROWN PELICAN (PELECANUS OCCIDENTALIS CALIFORNICUS)

The California brown pelican is a state and federally designated endangered species. California brown pelicans are found in estuarine, marine subtidal, and marine pelagic waters along the California coast. They usually rest on water or inaccessible rocks (either offshore or on mainland), but also uses mudflats, sandy beaches, wharfs, and jetties. This resident species is often observed foraging and resting along Lower Tecolotito Creek near Goleta Beach (i.e., the lagoon portion of the lower creek). It does not occur in the center of Goleta Slough where Basin E/F is located.

During the surveys conducted in association with the Tidal Restoration Demonstration Project, California brown pelican was not observed using or flying over Basin E/F (URS 2009). It is expected that this species will continue to be absent from Basin E/F due to the lack of suitable foraging habitat. It is possible that the California brown pelican might occasionally fly near the Project site, but use of Basin E/F is unlikely.

4.4 LIGHT-FOOTED CLAPPER RAIL (RALLUS LONGIROSTRIS LEVIPES)

The light-footed clapper rail is a federal endangered species which currently occurs in coastal salt marshes from Carpinteria to San Diego, CA. It occurs in pickleweed or cordgrass...
(Spartina foliosa) dominated saltmarsh habitats adjacent to tidal channels. This species historically occurred in Goleta Slough, but has not been observed in the slough since 1972.

During the surveys conducted in association with the Tidal Restoration Demonstration Project light-footed clapper rail was not observed using or flying over Basin E/F (URS 2009). Since suitable habitat is not present in Basin E/F and this species hasn’t been observed using Basin E/F recently, it is assumed that the species will continue to be absent from the Project site.

4.5 BELDING’S SAVANNAH SPARROW (PASSERCUlus SANDWICHENsiS BELDINGI)

Belding’s savannah sparrow is a subspecies of the savannah sparrow, and breeds in coastal salt marshes of northwestern Mexico and of southern California as far north as Goleta. This subspecies was listed as endangered by the CDFG in 1974. It favors pickleweed marsh, such as occurs at Goleta Slough, and nests in the upper littoral of these marshes, where its nests are safe from the highest tides that occur during the nesting season. In portions of Goleta Slough where basins are non-tidal, birds establish territories above the water line created by freshwater impoundments from precipitation. The species utilizes pickleweed for nesting, perching, and foraging. The number or territories at Goleta Slough varies each year. Surveys since 1973 have recorded as few as 28, in 1977, and as many as 140, in 1994 (Zembal and Hoffman 2002, Holmgren and Kisner 1994). Surveys were conducted over the entire slough on May 21, 2001, and June 21, 2006, as part of an ongoing effort by the California Department of Fish and Game to monitor the Belding’s savannah sparrow population in the state (CDFG 2001 and 2006). These surveys produced estimates of 68 territories in 2001 and 52 in 2006. The 2001 survey recorded four Belding’s savannah sparrow territories in Basin E/F, while the 2006 survey recorded no territories in the same area (Compton 2006). On the latter date, habitat in the non-tidal portion of Basin E/F that may otherwise have been occupied by Belding’s savannah sparrow was flooded, making it unsuitable for nesting. The experimental tidal basin (part of Basin F) was still in the process of being revegetated with pickleweed, in which Belding’s savannah sparrow at Goleta Slough prefer to nest.

In 2003, four pairs were found in Basin E/F (URS 2003b). Three of the four territories were indicated by singing males, while a fourth was indicated by the presence of two adults perched together that were assumed to be a pair. None of these territories were in Basin F. During this survey, the western portion of the basin was flooded, and shallow water covered much of the remainder of the basin (Basin E).

On May 21, 2009, small areas of standing water were present in Basin F, while no standing water was detected in Basin E. No Belding’s savannah sparcrows were detected in the control basin (part of Basin F). Three singing and therefore territorial males were detected during the survey, one in the experimental tidal basin (part of Basin F) and two in Basin E. An adult
female was observed with each of the latter two individuals. A fourth territory was confirmed in Basin E by the presence of a different adult, with a juvenile under its care. Several other sightings of adults, including one with a juvenile under its care in the experimental tidal basin, indicate one to two additional territories may exist in Basin E/F or overlap the basin from adjacent areas (see Figure 5). Belding’s savannah sparrow 2009 territories in Basin E/F broke down as follows:

- Basin E: 3 to 4 territories (including one possibly overlapping the tidal basin)
- Basin F:
  - Tidal Basin: 1 to 2 territories
  - Control Basin: 0 territories (no savannah sparrows observed here)
- Total: 4 to 5 territories

Overall, the number of Belding’s savannah sparrow territories was the same or slightly higher in Basin E/F in 2009 than it was in all previous years. While no Belding’s savannah sparrow were observed in the area of the experimental tidal basin in May 2003, at least two adult and one juvenile Belding’s savannah sparrow were observed in the experimental tidal basin (part of Basin F) in May 2009, indicating 1 to 2 territories within or overlapping the basin. No difference was detected in the presence of Belding’s savannah sparrow in the Control Basin (part of Basin F), where none of this species were detected during either May 2003 or May 2009. Numbers in Basin E (the eastern portion of Basin E/F) were approximately the same as in 2001 and 2003 and more than in 2006.

During the surveys conducted in association with the Tidal Restoration Demonstration Project Belding’s savannah sparrow was documented as breeding commonly in Basins A and B/C/D, as less common in Basin E, and occurring sporadically in Basin F. Belding’s savannah sparrow were observed using Basin E/F prior to the construction of the experimental tidal basin in 2004 through 2005 and after construction from 2005 through 2008. (URS 2009)

4.6 SOUTHERN TARPLANT (CENTROMADIA [HEMIZONIA] PARRYI SSP. AUSTRALIS)

Southern tarplant (CNPS List 1B.1, or “seriously endangered”) is a rare native annual species that blooms from May to November and is found in moist areas including marshes, swamps, and vernal pools. It did not historically exist in Basin E/F (URS 2003b); however, in 2000 southern tarplant was seeded along the northern and western berm of Basin E/F as part of the Safety Area Grading Project (URS 2007b) and again along the northern and eastern berm of the experimental tidal basin in 2005 as part of the Tidal Restoration Demonstration Project
(URS 2009). As a result southern tarplant populations are located along the entrance of Adams Berm (See Figure 5).

4.7 COULTER’S GOLDFIELDS (*LASTHENIA GLABRATA* SSP. *COULTERI*)

Coulter’s goldfields (CNPS List 1B.1, or “seriously endangered”) is a rare native annual species that blooms from February to June and is found in saline areas and vernal pools. In 2000 Coulter’s goldfields was seeded along the northern and western berm of Basin E/F as part of the Safety Area Grading Project (URS 2007b). There are several small patches of this species that have been observed along the margins of the Project site from spring 2001 through 2007 (See Figure 5). The location of Coulter’s goldfields patches changes each year. Some patches are new, while patches from the previous years are not present, and some patches remain in the same location but change in size and density.
SECTION 5
DETERMINATION OF EFFECTS AND AVOIDANCE
AND MINIMIZATION MEASURES

This section evaluates the potential effects of the proposed Project on biological resources and proposes measures to avoid and minimize potential adverse effects. Biological resources potentially impacted include vegetated habitat and mudflats (coastal act wetlands and ESHAs), special-status species, and aquatic species and water quality. Special-status species identified as having the potential to occur at the Project site because they are known to occur in Goleta Slough include the federally listed tidewater goby, state listed BSS, and two CNPS listed species (southern tarplant and Coutler’s goldfields). Federally listed southern steelhead, California brown pelican, and light-footed clapper rail were evaluated for potential to occur in the Project site; however, they are not expected to occur at the Project site and no impacts to these species from the proposed Project are anticipated.

5.1 VEGETATED HABITAT AND MUDFLATS

This section evaluations the permanent conversion of and temporary impacts to habitats including coastal act wetlands and ESHAs.

5.1.1 Direct Effects

The proposed Project would result in the conversion of the following habitats:

- Non-tidal pickleweed marsh on the basin bottoms will be converted to a mosaic of tidal mudflat and tidal pickleweed marsh
- Non-tidal mudflats/saltflats on the basin bottoms will be converted to a mosaic of tidal mudflat and tidal pickleweed marsh

The types of habitats to be affected are shown on Figure 4, and summarized in Table 10.

The proposed Project will involve the following temporary habitat impacts:

- Temporary disturbance to Safety Area Grading Restoration Project Areas including pickleweed marsh, quail bush scrub, coyote bush scrub, transitional wetlands, and non-native weeds for temporary construction access areas
- Temporary disturbance to Tecolotito Creek channel and banks, and Foxtrot Drain during dewatering to construct Basin E/F channel connections to Tecolotito Creek and Foxtrot Drain

The potential long-term conversion of habitats in Basin E/F and G are not likely to adversely affect the habitat value of Basin E/F, Basin G, or Goleta Slough because the proposed new
BASIN E/F TIDAL RESTORATION PROJECT
DRAFT BIOLOGICAL ASSESSMENT

TABLE 10
HABITAT IMPACTS

<table>
<thead>
<tr>
<th>Area of Interest</th>
<th>Habitat Conversion</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Basin E/F and G</td>
<td>Non-tidal pickleweed marsh, mudflats/saltflats, and transitional wetland edges converted to tidal mudflats, pickleweed marsh, and transitional wetlands</td>
<td>10.3</td>
</tr>
<tr>
<td>Temporary construction access roads to basins</td>
<td>Temporary disturbance to a mixture of pickleweed marsh, quail bush scrub, coyote bush scrub, transitional wetlands, and non-native weeds. Restored to native transitional wetland and pickleweed marsh habitat after construction has ended</td>
<td>0.23</td>
</tr>
<tr>
<td>Temporary disturbance to Tecolotito Creek</td>
<td>Temporary disturbance to creek bottom and banks. Creek banks to be stabilized with erosion control matting and restored with native transitional wetland after construction has ended</td>
<td>0.66</td>
</tr>
<tr>
<td>Filling a portion of Foxtrot Drain to divert flows into new channel in Basin E/F</td>
<td>Permanent conversion of tidal mudflat channel to tidal transitional wetlands</td>
<td>0.02</td>
</tr>
</tbody>
</table>

tidal habitats are desirable as described in the Tide Restoration Feasibility Study (URS 2003c). The new habitats are under-represented in Goleta Slough, and the tidal habitats in the slough are in poor conditions. In general, tidal saltmarsh provides higher productivity and species abundance and richness than non-tidal habitats with similar vegetation types. Hence, the habitat conversions associated with the Project would provide an overall long-term ecological benefit to Goleta Slough and are considered enhancements to the existing Safety Area Grading and experimental tidal basin mitigation sites within Basin E/F.

The temporary habitat impacts associated with construction of the basin is not considered significant because: 1) these habitats will be readily restored (based on the Airport’s prior experience with similar disturbances) immediately following construction; and 2) the interim habitat conditions while new vegetation is being developed provides value to invertebrates and wildlife because such early successional habitats are scarce in Goleta Slough.

The Wetland Restoration Plan (URS 2003a) currently being implemented along the edges of Tecolotito Creek has increased the habitat value of Goleta Slough in general and has provided improved water quality and reduced sedimentation in Tecolotito Creek. Restoration of Basin E/F will be similar in habitat and vegetation species to this Project, thereby
providing similar benefits. The proposed Project will also provide more area for transitional wetland species due to the gentler slopes and salinity gradient.

Similar mitigation measures set forth in the Mitigation Monitoring and Reporting Program (MMRP) for the Tidal Restoration Demonstration Project (Airport 2003) are proposed for the Project site to prevent and minimize effects to vegetated habitat and mudflats. The following mitigation measures will be applied:

- Areas of temporary disturbance along the access routes shall be reseeded with native plants from local genetic stock.
- A project completion report shall be prepared following the conclusion of construction activities.
- Weeding will be performed to ensure that restoration performance criteria are met (restoration performance criteria will be as specified in Section 2). Weeding shall occur at least six times per year, or more frequently if necessary. Maintenance will be performed by hand, including techniques such as weed whacking and hand removal which has proven affective in other Airport restoration projects. Herbicides shall only be used if hand removal is not effective. Herbicides must be approved for use near water. Only targeted application will be permitted; no blanket spraying will be allowed. Application will be supervised by a qualified biologist. Prior to application of herbicide, the maintenance crew must alert the Airport with an Integrated Pest Management form.
- Maintenance monitoring will be conducted by a qualified biologist consistent with the other wetland mitigation projects that are part of the Airfield Safety Projects and according to the Wetland Restoration Plan (URS 2003a) to determine if the performance criteria are being met.
- An annual monitoring report shall be prepared detailing the condition of the revegetation area in respect to the performance criteria. The annual report shall contain quantitative analysis of achievement of performance criteria. The annual revegetation monitoring period shall span 12 months following completion of revegetation of the Project site. Annual reports shall be completed one month after the end of the monitoring period and submitted to appropriate permitting agencies.

5.1.2 Indirect Effects

Indirect effects to habitats including coastal act wetlands and ESHAs include increased emissions, erosion, and dust from construction vehicles.

The increased emissions from the construction activities are not expected to significantly impact Goleta slough, the wetlands, or ESHAs. The emissions from the construction vehicles will be relatively short-term (approximately three months in duration) and the air quality of the area is generally quite good.
Erosion will be controlled by implementing the SWPPP (see Appendix E) and implementing erosion protection as specified in the preliminary plans (Appendix C, Sheet 8).

Dust associated with construction will be controlled by wetting dry, friable soils. Periodic wetting of the access routes may also prove necessary depending on the wind and weather patterns.

5.2 TIDEWATER GOBY

Potential direct and indirect effects to tidewater goby are evaluation in this section.

5.2.1 Direct Effects

Construction to connect the proposed channels in Basin E/F with Tecolotito Creek and Foxtrot Drain would require the temporarily dewatering of about 500 feet of Tecolotito Creek between the proposed aquadams, 800 feet of Foxtrot Drain, and 2.5 acres of tidal habitat in Basin E/F during late October 2010. According to sampling conducted in 2008, the tidewater goby is currently not present within the tidally influenced portion of the Project site (the experimental tidal basin). In order to ensure that there is no direct mortality of tidewater gobies, appropriate fish relocation procedures and mitigation measures will be implemented to reduce impacts to the tidewater goby to the maximum extent practicable. The relocation and mitigation proposed to prevent direct take of tidewater goby, include capture and relocation per the fish relocation procedures described in the USFWS Tidewater Goby Survey Protocol (USFWS 2006b). However, there is a potential for some tidewater gobies to be missed or harmed during these standard capture and relocation procedures, possibly resulting in incidental take. Although tidewater gobies are not expected to occur within the experimental tidal basin they have been documented in the adjacent Tecolotito Creek; therefore, a Biological Opinion (BO) will be required from USFWS.

These avoidance and minimization measures have been implemented on the Airport and for other City of Santa Barbara projects (e.g., Tecolotito Creek realignment and Arroyo Burro Creek restoration) and have been successful in minimizing impacts to tidewater goby. In addition, due to the design of the proposed Project, the tidewater gobies would likely benefit from an increase in availability of suitable habitat. Therefore, implementation of the proposed Project would not likely adversely affect tidewater gobies.

5.2.2 Indirect Effects

Two potential indirect effects to tidewater gobies have been identified: impacts to water quality caused by erosion either during construction or following the return of tidal flows to the Project site, or through a change in the tidal prism that decreases or impacts goby habitat.
During construction, Basin E/F will be tidally isolated by closing the tide gate. The majority of construction would occur behind the existing berms such that no sediment would be able to reach Tecolotito Creek, even if there were an unseasonable early rain event. As described in Section 2.5.2 and in Appendix E, standard storm water pollution and erosion control measures will be implemented during Project construction to prevent erosion and sedimentation of the creek from disturbed areas. There also will be extensive water quality protection measures in the section 401 Water Quality Certification issued by the RWQCB. After construction is completed, long-term erosion control measures, including revegetation with native species, will prevent sedimentation into Tecolotito Creek and Foxtrot Drain. Therefore, erosion and sedimentation are not expected to adversely affect tidewater goby habitat or individuals.

Tidewater goby habitat may also be impacted by the change in the tidal prism of the larger slough area due to the increased retention of tidal waters within the proposed Basin E/F restoration site. Tidal waters that may potentially reach into Basin G are anticipated to occur infrequently during high tides, so this was excluded from the model calculations. URS examined the quantity of water that would be contained in Basin E/F during a six-foot tide (a moderately high tide) and during a seven-foot tide (a very high tide). The volume of water that would be contained in the basin was then compared to the water volume of Tecolotito Creek.

A basic model was used to evaluate the Project’s greatest potential impact on the tidal prism on Tecolotito Creek upstream of Basin E/F. This model is based on the following assumptions:

1. The volume of water entering Goleta Slough on a rising tide is limited in volume.
2. The rising tide must enter Basin E/F until the basin is full prior to continuing up Tecolotito Creek.
3. For volume measurements, Tecolotito Creek was assumed to be a uniform 50 feet wide with vertical banks.
4. Tidal and brackish waters do not intermix and create a vertical interface equal to the depth of the water column.

Under this most conservative model, the result is that the tidal waters would not reach as high up Tecolotito Creek as they had prior to the proposed Project. During a six-foot tide, the tidal waters would be approximately 2,000 feet coastward of their current highest extent. This was determined by comparing the amount of water required to fill Basin E/F at a six-foot tide (approximately 2.3 acre feet) to the volume of water in Tecolotito Creek during a six-foot tide. Under a seven-foot tide, the tidal waters would be approximately 3,000 feet coastward of their current highest extent. This was determined by comparing the amount of water
required to fill Basin E/F at a seven-foot tide (approximately 7.1 acre feet) to the volume of water in Tecolotito Creek during a seven-foot tide.

Realistically, this shift in the tidal interface coastward would be much smaller than the estimated 2,000 or 3,000 feet because tidal waters would continue to fill Basin E/F and Tecolotito Creek simultaneously. If waters fill Basin E/F and Tecolotito Creek at the same rate, the values would be halved to 1,000 and 1,500 feet accordingly. Additionally, the tidal waters may become temporarily limited and/or nonexistent when sands accumulate at the mouth of Goleta Slough during the summer months. Freshwater inputs to the Slough also can change dramatically depending on the time of year and annual rainfall.

Though the proposed Project would alter the tidal prism slightly, it would not pose a significant impact to the endangered tidewater goby because the change is relatively small compared to the length of Tecolotito Creek and the distance Basin E/F is away from the Flood Control sediment basins where the gobies are most numerous. Additionally, the proposed Project would present a marginal benefit to tidewater goby populations by increasing potential habitat area in the Goleta Slough and/or creating potential refuge under storm conditions.

Mr. Manna Warburton and Mr. Tom Keegan, tidewater goby experts of ECORP Consulting (ECORP), were asked to review the project description, draft biological assessment, revised landscape plan, grading plan, and Project site map, and evaluate the Project’s impacts to the tidewater goby. The ECORP letter dated August 28, 2009, is included as Appendix F.

ECORP indicated that the “Basin E/F Tidal Restoration Project will likely not have permanent negative impacts to tidewater gobies …, because there will be no measurable change in tidal influence at the freshwater/marine interface … where tidewater gobies are likely to occur.” Additionally, ECORP notes that,

“Increased tidal influence in previously excluded portions of the estuary should result in a net benefit (quantity unknown) to populations of tidewater gobies in the slough through an increase in habitat complexity. This would be associated with increased opportunities for refugia during storm events and increased surface area for beneficial wetland processes. … The restoration project should result in a net benefit to the larger slough complex and its attendant aquatic community through an increase in habitat complexity and increased tidally influenced area for beneficial wetland processes.” (ECORP 2009)

Lastly, ECORP, discussed the assumptions of the model presented above and indicates that most of the assumptions are not representative of a natural system. Specifically, ECORP states that “inputs are likely not volume limited” as presented in assumption 1; “Tecolotito and Carneros … will fill at the same time” as Basin E/F since they have similar elevations, which is in contradiction to assumption 2; and that assumption 4 “is useful in estimating the
mean high salt/fresh interface, but does not describe the behavior of freshwater/saltwater interfaces in nature.” In effect, the model described above is overly conservative and the impacts described there in are likely larger than what will occur in the natural system.

5.3 SOUTHERN STEELHEAD

Potential direct and indirect effects to southern steelhead trout are evaluation in this section.

5.3.1 Direct Effects

Construction of the Basin E/F Restoration Project would involve significant earthwork. It is anticipated that the new Basin E/F would be mostly constructed while maintaining a separation from Tecolotito Creek and Foxtrot Drain. The majority of earth work for Basin E/F would be completed without breaching the berm until the last two weeks of the proposed Project “construction window” in order to minimize the amount of time Tecolotito Creek would be dammed. Once most of the new Basin E/F has been constructed and the banks stabilized, it would be connected to the current channels in a rapid earthmoving operation.

Connecting Basin E/F to Tecolotito Creek and Foxtrot Drain will involve temporary bladder dams. The work would be accomplished in the summer when flows are minimal to absent, and during low tides. Under these conditions, steelhead would not be migrating upstream or downstream. Furthermore, it is not likely that any steelhead would be present in Tecolotito Creek that could be affected by physical activities at the construction site, nor by downstream sedimentation. Therefore, implementation of the proposed Project would not likely adversely affect southern steelhead.

5.3.2 Indirect Effects

Erosion control measures will be in place to prevent sedimentation into Tecolotito Creek and Foxtrot Drain during construction. After construction is completed, long-term erosion control measures, including revegetation with native salt marsh species, will prevent sedimentation into Tecolotito Creek. Therefore, erosion and sedimentation are not expected to adversely affect southern steelhead habitat or individuals.

The proposed Project will not introduce any new passage impediments or barriers, nor will it exacerbate any existing impediments. It is anticipated that there will be no significant change in water surface elevations, flow velocities, and sediment transport from Basin E/F to Tecolotito Creek (see discussion for tidewater goby under Section 5.2.2). Hence, the Project would not affect the hydraulic conditions and opportunities for passage through Goleta Slough.

Construction activities associated with Basin E/F would be subject to a NPDES General Construction Permit from the State Water Resources Control Board. Under this permit, the
Airport would be required to minimize construction-related discharges such as sediment and petroleum products from construction equipment by the use of approved BMPs (such as silt fencing and straw wattles). As such, the discharge of sediment and pollutants to Tecolotito Creek, and to Goleta Slough in general, would be minimal and temporary.

5.4 CALIFORNIA BROWN PELICAN

Potential direct and indirect effects to California brown pelican are evaluation in this section.

5.4.1 Direct Effects

The California brown pelican is known to roost and forage, often in large numbers, near the mouth of Goleta Slough and within Goleta Bay. However, this species is not expected to occur within the Project site based on hundreds of hours of observation which indicate that the California brown pelican rarely ventures into the main portions of Goleta Slough and has never been observed in the Project site. Additionally, there is no suitable foraging habitat in Basin E/F and foraging habitat is marginal in Tecolotito Creek due to the shallow nature of the channel. Therefore, the proposed Project will not likely adversely affect this species and no mitigation is proposed.

5.4.2 Indirect Effects

Indirect effects such as construction related noise and activity; a change in the habitat in Basin E/F, and/or alterations to the tidal prism is not expected to adversely impact the brown pelican.

As mentioned above, the pelican frequents the Slough mouth and the coastal reaches which is far removed from the Basin E/F. Construction related noise is also expected to be far quieter then the sound of the jets landing and taking off at the Airport. Habitat changes will not impact the brown pelican because the Project site is not suitable habitat and the proposed Project will not create any suitable habitat.

5.5 LIGHT-FOOTED CLAPPER RAIL

Potential direct and indirect effects to light-footed clapper rail are evaluation in this section.

5.5.1 Direct Effects

The light-footed clapper rail is not expected to occur within the Project site. Since it has not been observed in the Project site for decades and habitat in Basin E/F is not suitable, the proposed Project will not likely adversely affect this species. Therefore no mitigation is proposed.
5.5.2 Indirect Effects

No indirect effects are expected because this species is not known to have occurred in Goleta Slough for decades. The habitat being proposed in Basin E/F would be of higher quality for clapper rails than what currently exists; however, there is too little suitable habitat in the whole of Goleta Slough to support a sustainable population.

5.6 BELDING’S SAVANNAH SPARROW

Potential direct and indirect effects to Belding’s savannah sparrow are evaluated in this section.

5.6.1 Direct Effects

Belding’s savannah sparrows are known to utilize Basin E/F and the surrounding habitat for foraging and breeding (CDFG 2001 and 2006, Compton 2006, URS 2003b). Construction-related mortality of adult birds is very unlikely because the birds are agile and wary of people and machines, and the vehicle traffic will not be travelling rapidly. However, there is potential for destroying a nest with eggs or a recently fledged young. To ensure that no eggs or young are injured or killed, mitigation measures similar to those set forth in the MMRP for the Tidal Restoration Demonstration Project (Airport 2003) are proposed for this project. The following mitigation measures will be applied:

- Prior to site preparation and construction activities, a qualified biologist shall survey all breeding/nesting habitat within the Project site every seven days for eight consecutive weeks. Documentation of findings, including negative findings, shall be submitted to the CDFG.

- Site preparation and construction activities will only begin if no breeding/nesting birds are observed and concurrence has been received from CDFG. If breeding activities or an active nest is located within the Project site, site preparation and construction activities shall not begin in that area until the nest is inactive, the young have fledged, the young are no longer being fed by the parents, or the young have left the area and the young will no longer be impacted by the Project.

- Once site preparation and construction activities have begun, the Project site shall be monitored for Belding’s savannah sparrow on a weekly basis. Documentation of findings, including negative findings, shall be submitted to the CDFG.

- Site preparation and construction activities shall be suspended immediately if the qualified biologist determines that breeding or nesting activities are occurring in the Project site. Site preparation and construction activities shall not resume until the qualified biologist determines if the breeding or nesting activities have stopped.
• After construction is complete, documentation of findings, including negative findings, shall be submitted to the CDFG.

• Use of the Project site by Belding’s savannah sparrows will be recorded during routine restoration monitoring, particularly evidence of breeding.

• Construction activities will be prohibited between November 1 and July 15 to avoid disruption of any nesting activity during the breeding season of Belding’s savannah sparrow.

5.6.2 Indirect Effects

Belding’s savannah sparrows would be temporarily disturbed by indirect effects such as noise from construction equipment, human activity, and temporary disturbance of habitat during project construction. The noise from construction equipment and human activities at the Project site would be minimal and temporary. The noise and human presence from construction of the proposed project could temporarily displace them; however, this would not adversely affect them. Once the construction activities are complete, savannah sparrows could return to the Project site. The temporary reduction in habitat would be compensated by the higher quality habitat as a result of tidal restoration at the Project site. In addition, noise monitoring for savannah sparrows conducted during the construction of the experimental tidal basin in 2005 determined that the noise from construction and resulting behavior of savannah sparrows was not noticeably different than that of the existing conditions from airplanes. However, as a precautionary measure to ensure noise impacts are minimized, the following measure is recommended:

• Noise levels will be monitored by the qualified biologist to determine if construction activities are disruptive to Belding’s savannah sparrows in or adjacent to the Project site. If significant disruption to foraging behavior is observed, construction activities in the area of disturbance will be stopped immediately until the qualified biologist develops recommendations to reduce or eliminate the disturbances and receives concurrence from CDFG.

5.7 SOUTHERN TARPLANT

Potential direct and indirect effects to southern tarplant are evaluated in this section.

5.7.1 Direct Effects

A population of southern tarplant is located on Adams Road berm along the construction access route. It is anticipated that southern tarplant would be blooming during the time of construction in August and a portion of the population would be impacted by vehicles traveling along the Adams Road berm access route. There is also potential for this species to
occur along the eastern access route in the Safety Area Grading Restoration Site and along the berm that borders the south side of Basin E/F.

Therefore, in order to avoid and minimize impacts to southern tarplant, the following measures shall be implemented:

- A pre-construction survey would be conducted during the blooming period for southern tarplant in July or August immediately prior to construction in all areas of the Project site containing habitat suitable to support southern tarplant. Populations within or adjacent to the Project site that can be avoided will be clearly marked with identifying flagging to ensure protection of the species.

- If individuals or populations of southern tarplant cannot be avoided, all seeds available from the plant to be removed would be salvaged and used in the restoration seed mix.

5.7.2 Indirect Effects

No negative indirect effects to southern tarplant are anticipated; however, the proposed Project would have overall beneficial effects to southern tarplant because the amount of suitable habitat would be increased and seeds would be broadcasted in the restoration area.

5.8 COULTER’S GOLDFIELDS

Potential direct and indirect effects to Coulter’s goldfields are evaluated in this section.

5.8.1 Direct Effects

A population of Coulter’s goldfields was observed within the Project site in 2002 and 2004; however, it has not been observed in recent years. It also occurs in transitional wetland areas near the Project site. Therefore, there is potential for impacts to this species during project construction.

In order to avoid and minimize impacts to Coulter’s goldfields, the following measures shall be implemented:

- A pre-construction survey would be conducted during the blooming period (February to June) prior to construction in all areas of the Project site containing habitat suitable to support Coulter’s goldfields. Populations within or adjacent to the Project site that can be avoided will be clearly marked with identifying flagging to ensure protection of the species.

- If individuals or populations of Coulter’s goldfields cannot be avoided, all seeds available from the plant to be removed would be salvaged and used in the restoration seed mix.
5.8.2 Indirect Effects

No negative indirect effects to Coulter’s goldfields are anticipated; however, the proposed Project would have overall beneficial effects to this species because the amount of suitable habitat would be increased and seeds would be broadcasted in the restoration area.

5.9 AQUATIC SPECIES AND WATER QUALITY

5.9.1 Direct Effects

Creation of the new channels connecting tidal flows to Basins E/F will require work in Tecolotito Creek and Foxtrot Drain. Temporary bladder dams will be installed to isolate the channel connection points from tidal flows and allow the earthwork to proceed without contact with water. Temporary direct effects to aquatic species would occur during installation of bladder dams and dewatering.

In order to avoid and minimize direct impacts to aquatic species during dewatering, the following measures shall be implemented:

- Foot traffic in the channel bottom shall be minimized.
- All native fish species shall be relocated to nearby suitable habitat in Tecolotito Creek outside of the work area.
- The area of Tecolotito Creek and Foxtrot Drain to be dewatered shall be minimized, not completely dewatered if practical, and kept moist in order to minimize mortality of aquatic species.

5.9.2 Indirect Effects

Construction of the proposed basin will involve substantial earthwork as the basins are created. Hence, there is a potential for disturbed soils to be discharged to Tecolotito Creek due to direct dumping, accidental spills, and/or post-grading erosion. Increased sedimentation in the tidal channels of Goleta Slough could adversely affect aquatic invertebrates, insects, and fish. However, it should be noted that the water in the tidal channels of Goleta Slough are naturally high in turbidity and suspended sediments. The proposed Project is not expected to cause a significant increase in sediments to the Slough, that would cause biological impacts, for the following reasons: 1) earthwork would be conducted in the late summer and fall when soils are dry and there is no rain or runoff that could convey sediments to the tidal channels; 2) the Best Management Practices (BMPs) to be employed during and after construction, would reduce offsite sedimentation to minimal levels; and 3) the basin will be stabilized with pickleweed sprigs, salt marsh container plants, straw wattle, and erosion control mats in areas with higher erosion potential such as steep banks and near culvert outlets after grading and prior to introducing tidal flow.
Once the channels connections are constructed, the creek banks will be stabilized with an erosion control mat and salt marsh plants to prevent erosion. No significant bank erosion and resultant sedimentation is anticipated upon removal of the bladder dams.

Similar mitigation measures set forth in the MMRP for the Tidal Restoration Demonstration Project (Airport 2003) are proposed for the Project site to prevent and minimize effects to aquatic species and water quality. The following mitigation measures will be applied:

- Construction activities will be prohibited between November 1 and July 15 to avoid the rainy season.
- Temporary bladder dams will be installed to isolate the channel connections to Basin E/F and allow the earthwork to proceed without contact with water.
SECTION 6.0
CONCLUSIONS

The proposed Basin E/F Tidal Restoration Project would not result in any cumulative effects to potentially occurring special-status species including tidewater goby, Belding’s savannah sparrow, southern tarplant, and Coulter’s goldfields. Southern steelhead, California brown pelican, and light-footed clapper rail are not expected to occur at the Project site so no impacts are anticipated. The proposed Project is expected to provide an overall benefit to these species by restoring tidal salt marsh habitat and providing opportunities for population expansion.

The proposed Project poses potential temporary direct and indirect effects to tidewater goby, aquatic species, and water quality, and temporary direct effects to vegetated habitats and mudflats including coastal salt marsh, ESHAs and coastal act wetlands. Belding’s savannah sparrow could potentially be temporarily and indirectly disturbed by noise and human activities and temporary habitat disturbance associated with construction. Direct temporary impacts are likely for southern tarplant and possible for Coulter’s goldfields. Since the proposed Project “may affect—is likely to adversely affect” tidewater goby, Section 7 consultation with USFWS is required and a BO will need to be issued for “incidental take” prior to Project construction. Avoidance, minimization, and mitigation measures addressed in this document would result in less than significant impacts to tidewater goby, Belding’s savannah sparrow, southern tarplant, vegetated habitats and mudflats (including coastal salt marsh, ESHAs, and coastal act wetlands), aquatic species, and water quality at the Project site. Additionally the project would only have temporary adverse impacts and would have long-term beneficial impacts to these species and habitats. Therefore, the proposed Project is not expected to have a significant cumulative impact on these sensitive biological resources.
SECTION 7
REFERENCES


City of Santa Barbara (City). 2004. Local Coastal Plan.


City of Santa Barbara, Airport Division (Airport). 2008. Aerial Photograph.

2003. Initial Study/Negative Declaration – Santa Barbara Airport Tidal Circulation Experiment Mitigation Monitoring and Reporting Program.

Compton, D. 2006. Personal field notes for Belding’s savannah sparrow.


2007d. Year 1 Post-Construction Surveys for Tidewater Goby (Eucyclogobius newberryi) and Benthic Macroinvertebrates Second Annual Report – Santa Barbara Airport Tecolotito and Carneros Creek Realignment Project. Prepared for the Federal Aviation Administration Western Pacific Region – Airport Division and the City of Santa Barbara, Airport Department. Prepared December 2007.


SECTION 8
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APPENDIX A

SITE PHOTOGRAPHS
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APPENDIX F
ECORP CONSULTING LETTER, DATED AUGUST 28, 2009
In consideration of the recommendation of approval of the project granted by the Planning Commission and for the benefit of the City of Santa Barbara, the Airports and occupants of adjacent real property and the public generally, the following terms and conditions are recommended to be imposed by the California Coastal Commission in approving a Goleta Slough Coastal Development Permit:

A. **California Department of Fish and Game Fees Required.** Pursuant to Section 21089(b) of the California Public Resources Code and Section 711.4 et. seq. of the California Fish and Game Code, the approval of this permit/project shall not be considered final unless the specified Department of Fish and Game fees are paid and filed with the California Department of Fish and Game within five days of the project approval. The fee required is $2010.25 for projects with Negative Declarations. Without the appropriate fee, the Notice of Determination cannot be filed and the project approval is not operative, vested, or final. The fee shall be delivered to the Planning Division immediately upon project approval in the form of a check payable to the California Department of Fish and Game.

B. **Approved Development.** The development recommended for approval by the Planning Commission on TBD is limited to 10.3 acres of wetland habitat mitigation and the improvements shown on the plans signed by the Chairman of the Planning Commission on said date and on file at the City of Santa Barbara.

C. **Storm Water Pollution Control and Drainage Systems Maintenance.** The Santa Barbara Airport Department (Airport) shall maintain the drainage system and storm water pollution control devices intended to intercept siltation and other potential pollutants (including, but not limited to, hydrocarbons, fecal bacteria, herbicides, fertilizers, etc.) in a functioning state (and in accordance with the Operations and Maintenance Procedure Plan prepared in accordance with the Storm Water Management Plan BMP Guidance Manual). Should any of the project’s surface or subsurface drainage structures or storm water pollution control methods fail to capture, infiltrate, and/or treat water, or result in increased erosion, the Airport shall be responsible for any necessary repairs to the system and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the Airport shall submit a repair and restoration plan to the Community Development Director to determine if an amendment or a new Building Permit and Coastal Development Permit are required to authorize such work. The Airport is responsible for the adequacy of any project-related drainage facilities and for the continued maintenance thereof in a manner that will preclude any hazard to life, health, or damage to the Real Property or any adjoining property.

The Airport shall provide an Operations and Maintenance Procedure Plan (describing replacement schedules for pollution absorbing pillows, etc.) for the operation and use of the storm drain surface pollutant interceptors. The Plan shall be reviewed and approved by the Water Resources Specialist.

D. **Pesticide or Fertilizer Usage Prohibited.** The use of pesticides or fertilizer shall be prohibited within the project site in Goleta Slough.
E. Public Works Requirements Prior to Building Permit Issuance. The Airport shall submit the following, or evidence of completion of the following to the Public Works Department for review and approval, prior to the issuance of a Building Permit for the project.

1. Drainage Calculations. The Airport shall submit drainage calculations prepared by a registered civil engineer or licensed architect demonstrating that the new development will not increase runoff amounts above existing conditions for a 25-year storm event. Any increase in runoff shall be retained on-site.

2. Drainage and Water Quality. Project drainage shall be designed, installed, and maintained such that stormwater runoff from the first inch of rain from any storm event shall be retained and treated onsite in accordance with the City’s NPDES Storm Water Management Permit. Runoff should be directed into a passive water treatment method such as a bioswale, landscape feature (planter beds and/or lawns), infiltration trench, etc. Project plans for grading, drainage, stormwater treatment methods, and project development, shall be subject to review and approval by City Building Division and Public Works Department. Sufficient engineered design and adequate measures shall be employed to ensure that no significant construction-related or long-term effects from increased runoff, erosion and sedimentation, or groundwater pollutants would result from the project. The Airport shall maintain the drainage system and storm water pollution control methods in a functioning state.

F. Community Development Requirements with Building Permit Application. The following shall be submitted with the application for any Building or Public Works permit and finalized prior to Building or Public Works Permit issuance:

1. Project Environmental Coordinator Required. Submit to the Planning Division a contract with a qualified representative for the Airport, subject to approval of the contract and the representative by the Planning Division, to act as the Project Environmental Coordinator (PEC). The PEC shall be responsible for assuring full compliance with the provisions of the Mitigation Monitoring and Reporting Program (MMRP) and Conditions of Approval to the City. The contract shall include the following, at a minimum:

   a. The frequency and/or schedule of the monitoring of the mitigation measures.

   b. A method for monitoring the mitigation measures.

   c. A list of reporting procedures, including the responsible party, and frequency.

   d. A list of other monitors to be hired, if applicable, and their qualifications.

   e. Submittal of monthly reports during demolition, excavation, grading and footing installation and monthly reports on all other construction activity.
regarding MMRP and condition compliance by the PEC to the Community Development Department/case planner.

f. The PEC shall have authority over all other monitors/specialists, the contractor, and all construction personnel for those actions that relate to the items listed in the MMRP and conditions of approval, including the authority to stop work, if necessary, to achieve compliance with mitigation measures.

g. The PEC shall monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when construction work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District (Required Mitigation Measure AQ-7).

2. **Neighborhood Notification Prior to Construction.** At least twenty (20) days prior to commencement of construction, the contractor shall provide written notice to Airport, all businesses, and residents within 300 feet of the project area. The notice shall contain a description of the project, the construction schedule, including days and hours of construction, the name and phone number of the Project Environmental Coordinator (PEC) and Contractor(s), site rules and Conditions of Approval pertaining to construction activities and any additional information that will assist the Building Inspectors, Police Officers and the public in addressing problems that may arise during construction. The language of the notice and the mailing list shall be reviewed and approved by the Planning Division prior to being distributed. An affidavit signed by the person(s) who compiled the mailing list shall be submitted to the Planning Division.

3. **Contractor and Subcontractor Notification.** The Airport shall notify in writing all contractors and subcontractors of the site rules, restrictions, and Conditions of Approval. Submit a copy of the notice to the Planning Division.

4. **Tidewater Goby Surveys.** Prior to construction and during all dewatering activities surveys shall be conducted by a biologist approved to handle tidewater gobies under a Section 10a(1a) Recovery Permit to determine the general abundance of tidewater gobies in tidal basin. Relocation of any tidewater gobies shall follow the procedures described in the USFWS Tidewater Goby Survey Protocol (2006). All native fish species shall be relocated from the Tidal Demonstration Basin and Foxtrot Drainage prior to any earthwork. The area of Tecolotito Creek and Foxtrot Drainage to be dewatered shall be minimized, not completely dewatered if practical, and kept moist in order to minimize mortality of aquatic species. Foot traffic in any channel bottom shall be limited to fish relocation and dewatering activities.

Post construction surveys for tidewater goby shall be implemented for 2 years following completion of the project. The surveys shall be conducted by a Section
10a(1a) Recovery Permit approved biologist to determine the general abundance of tidewater gobies in tidal basin. Survey methods shall follow those previously conducted by Ecorp Consulting to measure population densities in Tecolotito and Carneros Creeks. A total of four surveys shall be conducted including one pre-spawn survey in May/June and one post-spawn survey in August of each year.

All tidewater goby survey reports shall be submitted to the USFWS for acceptance (Required Mitigation Measure BIO-1).

5. **Bird Monitoring.** The project site shall be monitored by a qualified biologist for Belding’s savannah sparrow and loggerhead shrike. Prior to site preparation and construction activities, the Airport shall have a qualified biologist survey all breeding/nesting habitat within the project site every seven days for eight consecutive weeks. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). Site preparation and construction activities will only begin if no breeding/nesting birds are observed and concurrence has been received from the CDFG. If breeding activities or an active nest is located in a work area, site preparation and construction activities shall not begin in that area until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area and the young will no longer be impacted by the project.

Once site preparation and construction activities have commenced, the project site shall be monitored for Belding’s savannah sparrow and loggerhead shrike on a weekly basis. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG) until construction is complete.

Site preparation or construction activities shall be suspended immediately in a given basin if the qualified biologist determines that breeding or nesting activity is occurring in that basin. Site preparation and construction activities shall not resume until the monitor determines that the breeding and nesting activities described above have stopped.

Noise levels will be monitored by a qualified biologist to determine if construction activities are disruptive to Belding’s savannah sparrow or loggerhead shrike in or adjacent to the project site. If a significant disruption to foraging behavior is observed, construction activities in the area of disturbance will be stopped immediately until the qualified biologist develops recommendations to reduce or eliminate the disturbances and receives concurrence from CDFG.

Use of the project site by Belding’s savannah sparrows or loggerhead shrike will be recorded during routine restoration monitoring, including evidence of breeding (Required Mitigation Measure BIO-2).

6. **Construction Season Limitation.** Construction shall be prohibited between November 1 and July 15 to avoid the rainy season, Belding’s savannah sparrow and
loggerhead shrike breeding season and potential Steelhead migration *(Required Mitigation Measure BIO-3).*

7. **Biological Monitoring and Performance.** Areas of temporary disturbance along the access routes shall be reseeded with native plants from local genetic stock. Weeding will be performed to ensure that restoration performance criteria are met. Weeding shall occur at least six times per year, or more frequently if necessary. Maintenance will be performed by hand, including techniques such as weed whacking and hand removal which has proven effective in other Airport restoration projects. Herbicides shall only be used if hand removal is not effective. Herbicides must be approved for use near water. Only targeted application will be permitted; no blanket spraying will be allowed. Application will be supervised by a qualified biologist. Prior to application of herbicide, the maintenance crew must alert the Airport in compliance with the City of Santa Barbara’s Integrated Pest Management Program. A project completion report shall be prepared following the conclusion of construction activities.

Monitoring and reporting shall occur for a period of at least seven if the performance criteria are not met. If performance criteria are not met by the end of year 7, then the choice of plants, site conditions, performance criteria, and other factors would be reevaluated by a qualified biologist. A new restoration effort would be implemented with a new monitoring period.

Performance criteria for the initial seeding effort would be as follows:

- All installed plants must achieve a 70% survival rate after one year following the construction completion, and an 80% survival rate of the remaining plants after two and three years.
- At the end of seven years, there must be a minimum of 75% total native plant cover.
- Non-native weeds must remain below 15% of total vegetative coverage at all times during the seven year period. By the end of the seventh year, the restoration site shall not have more than 10% non-native cover. Non-native grasses and common naturalized species that are not aggressive such as brass buttons (*Cotula coronopifolia*) are not included in this performance criteria.
- The project site must be without supplemental irrigation for a minimum of three years.
- Except for pickleweed, no species shall constitute more than 50% of the vegetative cover.
- No woody invasive species shall be present, and herbaceous invasive species shall not exceed 5% cover.

Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the monitoring period. The Airport shall
prepare annual revegetation status report on the condition of the seeded areas during the monitoring period. An annual monitoring report shall be prepared detailing the condition of the revegetation area in respect to the performance criteria. The annual report shall contain quantitative analysis of achievement of performance criteria. The annual revegetation monitoring period shall span 12 months following completion of revegetation of the project site. Annual reports shall be completed one month after the end of the monitoring period and submitted to the permitting agencies (*Required Mitigation Measure BIO-4*).

8. **Pre-Construction Plant Survey.** A pre-construction survey shall be conducted during the blooming period for southern tarplant (July-August) and Coulter’s goldfields (February-June) immediately prior to construction in all areas of the project site containing habitat suitable to support southern tarplant and/or Coulter’s goldfields. Populations within or adjacent to the project site that can be avoided will be clearly marked with identifying flagging to ensure projection of the species.

If individuals or populations of southern tarplant and Coulter’s goldfields cannot be avoided, all seed available from the plant to be removed would be salvaged and used in the restoration seed mix (*Required Mitigation Measure BIO-5*).

9. **Traffic Route Approval.** The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods, subject to approval by the Transportation Manager (*Recommended Mitigation Measure TC-2*)

10. **Haul Route Approval.** The haul route(s) for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Manager (*Recommended Mitigation Measure TC-3*)

11. **Parking/Storage Approval.** The location of construction parking and storage shall be provided in locations subject to the approval of the Transportation Manager. During construction, free parking spaces for construction workers shall be provided (*Recommended Mitigation Measure TC-4*)

12. **Letter of Commitment for Pre-Construction Conference.** The Airport shall submit to the Planning Division a letter of commitment that states that, prior to disturbing any part of the project site for any reason and after the Building permit has been issued, the General Contractor shall schedule a conference to review site conditions, construction schedule, construction conditions, and environmental monitoring requirements. The conference shall include representatives from the Public Works Department Engineering and Transportation Divisions, the assigned Building Inspector, the Planning Division, the Property Airport, the Landscape Architect, the Biologist, the Project Engineer, the Project Environmental Coordinator, the Contractor and each subcontractor.

G. **Building Permit Plan Requirements.** The following requirements/notes shall be incorporated into the construction plans submitted to the Building and Safety Division for Building permits.
Mitigation Monitoring and Reporting Requirement. Airport shall implement the Mitigation Monitoring and Reporting Program (MMRP) for the project's mitigation measures, as stated in the Mitigated Negative Declaration for the project.

Unanticipated Archaeological Resources Contractor Notification. Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts associated with past human occupation of the parcel. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and an archaeologist from the most current City Qualified Archaeologists List shall be retained by the Airport. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. A Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization (Required Mitigation Measure CR-1).

Conditions on Plans/Signatures. The final California Coastal Commission Resolution shall be provided on a full size drawing sheet as part of the drawing sets. Each condition shall have a sheet and/or note reference to verify condition compliance. If the condition relates to a document submittal, indicate the status of the submittal (e.g., Archaeologist contract submitted to Community Development Department for review). A statement shall also be placed on the above sheet as follows: The undersigned have read and understand the above conditions, and agree to abide by any and all conditions which is their usual and customary responsibility to perform, and which are within their authority to perform.
H. Construction Implementation Requirements. All of these construction requirements shall be carried out in the field by the Airport and/or Contractor for the duration of the project construction.

1. Pre-Construction Conference. Not less than 10 days or more than 20 days prior to commencement of construction, a conference to review site conditions, construction schedule, construction conditions, and environmental monitoring requirements, shall be held by the General Contractor. The conference shall include representatives from the Public Works Department Engineering and Transportation Divisions, Building Division, Planning Division, the Airport Department, Landscape Architect, Biologist, Project Engineer, Project Environmental Coordinator, Mitigation Monitors, Contractor and each Subcontractor.

2. Construction Dust Control – Minimize Disturbed Area/Speed. Amount of disturbed area shall be minimized and on site vehicle speeds shall be limited to 15 miles per hour or less (Required Mitigation Measure AQ-1).

3. Construction Dust Control - Watering. During site grading and transportation of fill materials, regular water sprinkling shall use reclaimed water whenever the Public Works Director determines that it is reasonably available. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust.

Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph (Required Mitigation Measure AQ-2).
4. **Construction Dust Control – Tarping.** Trucks transporting fill material to and from the site shall be covered from the point of origin *(Required Mitigation Measure AQ-3)*.

5. **Construction Dust Control – Gravel Pads.** Gravel pads shall be installed at all access points to prevent tracking of mud on to public roads *(Required Mitigation Measure AQ-4)*.

6. **Construction Dust Control – Stockpiling.** If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation *(Required Mitigation Measure AQ-5)*.

7. **Construction Dust Control – Disturbed Area Treatment.** After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:
   - A. Seeding and watering until grass cover is grown;
   - B. Spreading soil binders;
   - C. Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind;
   - D. Other methods approved in advance by the Air Pollution Control District *(Required Mitigation Measure AQ-6)*.

8. **Portable Construction Equipment.** All portable diesel-powered construction equipment shall be registered with the state’s portable equipment registration program OR shall obtain an APCD permit *(Required Mitigation Measure AQ-8)*.

9. **Fleet Owners.** Fleet owners are subject to sections 2449, 2449.2, and 2449.3 in Title 13, Article 4.8, Chapter 9, of the California Code of regulations (CCR) to reduce diesel particulate matter (and criteria pollutant emissions from in-use off-road diesel-fueled vehicles. See [http://www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf](http://www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf)) *(Required Mitigation Measure AQ-9)*.

10. **Engine Size.** The engine size of construction equipment shall be the minimum practical size *(Required Mitigation Measure AQ-10)*.

11. **Equipment Numbers.** The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time *(Required Mitigation Measure AQ-11)*.

12. **Equipment maintenance.** All construction equipment shall be maintained in tune per the manufacturer’s specifications *(Required Mitigation Measure AQ-12)*.
13. **Catalytic Converters.** Catalytic converters shall be installed on gasoline-powered equipment, if feasible *(Required Mitigation Measure AQ-13)*.

14. **Diesel Construction Equipment.** Only heavy-duty diesel construction equipment manufactured after 1996 (with federally mandated “clean” diesel engines) shall be used *(Required Mitigation Measure AQ-14)*.

15. **Engine Timing and Diesel Catalytic Converters.** Construction equipment operating on site shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines. Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed *(Required Mitigation Measure AQ-15)*.

16. **Diesel Replacements.** Diesel powered equipment shall be replaced by electric equipment whenever feasible *(Required Mitigation Measure AQ-16)*.

17. **Idling Limitation.** Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units shall be used whenever possible *(Required Mitigation Measure AQ-17)*.

18. **Hazardous Materials Discovery.** All construction work shall cease in the event of visual discovery of hazardous or unknown material or upon discovery of chemical odors. The Santa Barbara County Hazardous Materials Unit (HMU) shall be contacted and given access to the site. Resumption of work shall not take place until such work has been approved by the HMU *(Recommended Mitigation Measure HAZ-1)*.

19. **Construction Noise Reduction.** All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers’ muffler and silencing devices *(Recommended Mitigation Measure NOI-1)*

20. **Recycling/Green Waste Reuse.** Recycling and/or reuse of construction and green waste materials shall be implemented and containers shall be provided on site for that purpose during the construction period *(Recommended Mitigation Measure PF-1)*.

21. **Construction-Related Truck Trips.** Construction-related truck trips shall not be scheduled during peak hours (7:30 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) to help reduce truck traffic on adjacent streets and roadways *(Recommended Mitigation Measure TC-1)*.

22. **Construction Hours.** Construction (including preparation for construction work) is prohibited Monday through Friday before 7:00 a.m. and after 5:00 p.m., and all day on Saturdays, Sundays and holidays observed by the City of Santa Barbara, as shown below:
New Year’s Day January 1st*
Martin Luther King’s Birthday 3rd Monday in January
Presidents’ Day 3rd Monday in February
César Chávez Day March 31*
Memorial Day Last Monday in May
Independence Day July 4th*
Labor Day 1st Monday in September
Thanksgiving Day 4th Thursday in November
Following Thanksgiving Day Friday following Thanksgiving Day
Christmas Day December 25th*

*When a holiday falls on a Saturday or Sunday, the preceding Friday or following Monday, respectively, shall be observed as a legal holiday.

When, based on required construction type or other appropriate reasons, it is necessary to do work outside the allowed construction hours, contractor shall contact the Chief of Building and Safety to request a waiver from the above construction hours, using the procedure outlined in Santa Barbara Municipal Code §9.16.015 Construction Work at Night. Contractor shall notify all residents within 300 feet of the parcel of intent to carry out night construction a minimum of 48 hours prior to said construction. Said notification shall include what the work includes, the reason for the work, the duration of the proposed work and a contact number that is answered by a person, not a machine.

23. **Construction Parking/Storage/Staging.** Construction parking and storage shall be provided as follows:

a. During construction, free parking spaces for construction workers and construction shall be provided on-site or off-site in a location subject to the approval of the Public Works Director. Construction workers are prohibited from parking within the public right-of-way, except as outlined in subparagraph b. below.

b. Parking in the public right of way is permitted as posted by Municipal Code, as reasonably allowed for in the 2006 Greenbook (or latest reference), and with a Public Works permit in restricted parking zones. No more than three (3) individual parking permits without extensions may be issued for the life of the project.

c. Storage or staging of construction materials and equipment within the public right-of-way shall not be permitted, unless approved by the Transportation Manager.
24. **Water Sprinkling During Grading.** The following dust control measures shall be required, and shall be accomplished using recycled water whenever the Public Works Director determines that it is reasonably available:

a. Site grading and transportation of fill materials.

b. Regular water sprinkling; during clearing, grading, earth moving or excavation.

c. Sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied on-site to prevent dust from leaving the site.

d. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust.

e. Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement on-site damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.

25. **Gravel Pads.** Gravel pads shall be installed at all access points to the project site to prevent tracking of mud on to public roads.

26. **Construction Best Management Practices (BMPs).** Construction activities shall address water quality through the use of BMPs, as approved by the Building and Safety Division.

27. **Mitigation Monitoring Compliance Reports.** The PEC shall submit monthly reports during demolition, excavation, grading and footing installation and monthly reports on all other construction activity regarding MMRP compliance to the Community Development Department.

28. **Construction Contact Sign.** Immediately after Building permit issuance, signage shall be posted at the points of entry to the site that list the contractor(s) (and Project Environmental Coordinator’s (PEC)) name, contractor(s) (and PEC’s) telephone number(s), work hours, site rules, and construction-related conditions, to assist Building Inspectors and Police Officers in the enforcement of the conditions of approval. The construction contact phone number shall include an option to contact a person instead of a machine in case of emergency. The font size shall be a minimum of 0.5 inches in height. Said sign shall not exceed six feet in height from the ground if it is free-standing or placed on a fence. It shall not exceed 24 square feet if in a multi-family or commercial zone or six square feet if in a single family zone.

29. **Construction Equipment Maintenance.** All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers’ muffler and silencing devices.
30. **Unanticipated Archaeological Resources Contractor Notification.** Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts associated with past human occupation of the parcel. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and the Airport shall retain an archaeologist from the most current City Qualified Archaeologists List. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. A Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

1. **Prior to Project Completion.** Prior to project completion, the Airport shall complete the following:

   1. **New Construction Photographs.** Photographs of the new construction, taken from the same locations as those taken of the story poles prior to project approval, shall be taken, attached to 8 ½ x 11” board and submitted to the Planning Division.

   2. **Mitigation Monitoring Report.** Submit a final construction report for mitigation monitoring.

   3. **Biological Monitoring Contract.** Submit a contract with a qualified biologist acceptable to the City for on-going monitoring.

**NOTICE OF COASTAL DEVELOPMENT PERMIT TIME LIMITS:**

Pursuant to Section 28.44.230 of the Santa Barbara Municipal Code, work on the approved development shall commence within two years of the final action on the application, unless a different time is specified in the Coastal Development Permit. Up to three (3) one-year extensions may be granted by the Community Development Director in accordance with the procedures specified in Subsection 28.44.230.B of the Santa Barbara Municipal Code.
The loggerhead shrike (*Lanius ludovicianus*) is a California Species of Concern (CSC) for nesting only (Shuford and Gardali 2008). It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches, and requires impaling sites, such as thorns, sharp twigs, or barbed wire, for skewering and manipulating its prey. The species nests in densely foliated trees or shrubs and feeds on “arthropods, amphibians, small to medium-sized reptiles, small mammals and birds” (Yosef 1996).

The species is a year-round resident in California in the southern deserts, parts of the south and central coasts, and the Central Valley, where numbers are augmented by migrants from November to February (Yosef 1996). Southern coastal populations have been declining since the early 1980s, although the causes of this decline are poorly understood (Humble 2008). Lehman (1994) refers to the species as a permanent resident on the north coast of Santa Barbara County and in the Cuyama Valley, and as a rare breeder in other interior valleys of the county and on the south coast between Gaviota and Pt. Conception. Since the publication of this book, nesting evidence from east of Gaviota has been recorded just once, from Carpinteria on July 3rd through the 27th, 2004 (SBMNH rare bird reports). The lack of other nesting records suggests the species is essentially absent east of Gaviota from April to late June or early July, when migrants or post-breeding dispersants may begin arriving. URS Corporation conducted weekly bird surveys of Basin E/F from November 2005 to November 2008, and conducted biweekly surveys of Basins A, B–D, and G during that time. During this period, loggerhead shrikes were encountered regularly between early July and late January each year. The latest in winter this species was detected was February 1, 2007, and the earliest it was seen after the nesting season was July 3, 2008. Therefore, the period in which the species was detected corresponds with the migratory and wintering periods only. Thus, while Goleta Slough appears to meet many of the breeding habitat requirements of this species, the area is outside the current known breeding range of the species. Also, extensive data pertaining to bird use of Basin E/F suggests that this species does not nest in the immediate area. Therefore, the project is not expected to affect nesting by the loggerhead shrike.

Santa Barbara Museum of Natural History (SBMNH). Quarterly rare bird reports.
INTRODUCTION:

An Initial Study was prepared for the 500 James Fowler Road Basin E/F Tidal Restoration Project because the California Environmental Quality Act (CEQA) requires that an environmental assessment of the proposed project be provided. The environmental analysis determined that the proposed project could potentially have significant adverse impacts related to air quality, biological resources, and the water environment; however, mitigation measures described in the Initial Study and agreed to by the applicant would reduce potential impacts to less than significant levels. In addition, recommended mitigation measures were identified to further reduce less than significant impacts associated with cultural resources, geophysical resources, hazardous materials, noise environment, and transportation.

A Draft Mitigated Negative Declaration was prepared for the proposed project, and a public review period was held from December 7, 2009 to January 19, 2010. Comment letters were received from the following members of the public during the comment period:

1. Harold Kroeger
2. Marina R. Brand, California State Lands Commission
3. Eric Gage, Santa Barbara County Air Pollution Control District
4. Michael F. Brown, Santa Barbara County Executive Office
5. Richard Todd, Santa Barbara County Fire Department

Responses to the comments received regarding the Draft Mitigated Negative Declaration are provided below, and the comment letters received are attached.

The purpose of this document is to respond to specific comments received pertaining to environmental issues in the Draft MND. While letters of general support or opposition to the project are acknowledged and included in this document for the record, no formal response is provided. In addition, comments received not related to the environmental issues outlined in the Draft MND, such as land use issues and social or fiscal impacts of the project, are outside the scope and not addressed in this document. However, all comments will be forwarded to the Planning Commission for consideration.
1-1. Comment: Voiced support of the proposed project.
Response: Comment noted.
2-1. **Comment:** The loggerhead shrike, a California species of concern is reported to exist in the Goleta Slough. Why is the potential impact to the loggerhead shrike not discussed in the IS/MND?

**Response:** A complete response was prepared by URS Corporation and attached to the Revised Initial Study as Exhibit G. Analysis of impacts to the loggerhead shrike and mitigation to address said impacts have been included in the Revised Initial Study.

Pages 14 and 16 of the Revised Initial Study reflect this change.

2-2. **Comment:** Any cultural resource artifacts found during construction on lands under the jurisdiction of the California State Lands Commission are considered property of the State of California.

**Response:** The City of Santa Barbara’s position is that the portion of the Goleta Slough within Santa Barbara City Limits is under the jurisdiction of the City of Santa Barbara pursuant to the Tidelands Trust. As discussed in the Draft IS/MND, the proposed project site is not within an archaeological resource sensitivity zone and no cultural resources are anticipated to be encountered during construction. Mitigation Measure CR-1 would require a qualified archaeologist to be on site and to employ procedures stipulated in the Airport Master Archaeological Resources Assessment and the City’s Master Environmental Assessment.
Letter No. 3
Eric Gage, Santa Barbara County Air Pollution Control District
December 15, 2009

3-1. **Comment:** Page 8, “2.a – Clean Air Plan” is mislabeled as “2.b.” Should specify that the project would not result in any new long-term emissions.
   **Response:** See corrections on page 8.

3-2. **Comment:** Standard dust mitigations are recommended for all construction and/or grading activities. The name and telephone number of an on-site contact person must be provided to the APCD prior to issuance of land use clearance.
   **Response:** Please see Mitigation Measures AQ-1-7 on page 10 and Preliminary Recommended Condition of Approval D-1 in Exhibit F, page 3.

3-3. **Comment:** Fine particulate emissions from diesel equipment exhaust are classified as carcinogenic by the State of California. Therefore, during project grading and hauling, contracts must specify that contractors shall adhere to specified requirements to reduce emissions of ozone precursors and fine particulate emissions from diesel exhaust.
   **Response:** Thank you for your comment. Please see responses below.

3-4. **Comment:** Only heavy-duty diesel powered construction equipment manufactured after 1996 (with federally mandated “clean” diesel engines) shall be used.
   **Response:** See changes to Mitigation Measure AQ-14 on page 11 of the Revised Initial Study.

3-5. **Comment:** The engine size of construction equipment shall be the minimum practical size.
   **Response:** See Mitigation Measure AQ-10.

3-6. **Comment:** The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
   **Response:** See Mitigation Measure AQ-11.

3-7. **Comment:** Construction equipment shall be maintained in tune per the manufacturer’s specifications.
   **Response:** See changes to Mitigation Measure AQ-15.

3-8. **Comment:** Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines.
   **Response:** See changes to Mitigation Measure AQ-15.

3-9. **Comment:** Catalytic converters shall be installed on gasoline-powered equipment, if available.
   **Response:** See Mitigation Measure AQ-13.

3-10. **Comment:** Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by the EPA or California shall be installed on equipment operating on site.
    **Response:** See changes to Mitigation Measure AQ-15.

3-11. **Comment:** Diesel powered equipment should be replaced by electric equipment whenever feasible.
    **Response:** See Mitigation Measure AQ-16.
3-12. **Comment:** Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible. State law requires that drivers of diesel-fueled commercial vehicles weighing more than 10,000 pounds shall not idle the vehicle’s primary diesel engine for greater than 5 minutes at any location and shall not idle a diesel-fueled auxiliary power system (APS) for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if you have a sleeper berth and you’re within 100 feet of a restricted area (homes and schools).

**Response:** See changes to Mitigation Measure AQ-17. There are no homes or schools within 100 feet of the proposed project site, so discussion of APS limitations was not included in the Revised Initial Study.

3-13. **Comment:** Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible. State law requires that drivers of diesel-fueled commercial vehicles weighing more than 10,000 pounds shall not idle the vehicle’s primary diesel engine for greater than 5 minutes at any location and shall not idle a diesel-fueled auxiliary power system (APS) for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if you have a sleeper berth and you’re within 100 feet of a restricted area (homes and schools).

**Response:** See changes to Mitigation Measure AQ-17. There are no homes or schools within 100 feet of the proposed project site, so discussion of APS limitations was not included in the Revised Initial Study.

3-14: **Comment:** Construction worker trips should be minimized by requiring carpooling and by providing for lunch on site.

**Response:** The proposed project site is within the Airport Operations Area (AOA) and is only accessible via a controlled gate. Only persons authorized to operate a vehicle on the airfield by the Santa Barbara Airport would be able to drive to the site. This would necessitate carpooling to the site. A catering vehicle would not have access inside the AOA, therefore establishing an on-site lunch requirement is infeasible.
4-1. **Comment:** The proposed project should consider the County’s various options for long-term protection of Goleta Beach Park.

**Response:** Comment noted.
5-1. **Comment:** Stop work immediately and contact the County Fire Department, Hazardous Materials Unit (HMU) if visual contamination or chemical odors are detected while implementing the approved work at this site. Resumption of work requires approval of the HMU.

**Response:** See change on page 21 to include mitigation measure HAZ-1.

5-2. **Comment:** Santa Barbara County High Fire Hazard Area Requirements must be met, see California State Law Public Resources/Section 4291.

**Response:** Public Resources Code Section 4291 addresses requirements for new structures being constructed in potential high fire hazard areas. As the proposed project does not involve the construction of any new structure, this section does not apply to the proposed project.
CONCLUSION

The environmental analysis demonstrates that, with the identified mitigation measures agreed to by the applicant, the project as proposed would not result in significant environmental impacts. The project therefore qualifies for a Mitigated Negative Declaration and no further analysis of alternatives is required as part of the environmental document. However, comments regarding the merits of the project, design alternatives, and cultural resource preservation are forwarded to decision-makers in the context of their consideration of project permits and planning policy consistency.

Attachments:  1. Notice of Intent to Adopt
               2. Public comments letters (1 through 5)
PUBLIC COMMENT PERIOD: The City of Santa Barbara encourages the public to provide written comment on this and other projects. The public review period begins on Monday, December 7, 2009. Comments on the DMND must be submitted by Tuesday January 19, 2010 at 4:30 p.m. Please send your comments to: City of Santa Barbara, Planning Division, Attn: Andrew Bermond, Associate Planner, P.O. Box 1990, Santa Barbara, CA 93102-1990, or send them electronically to ABermond@SantaBarbaraCA.gov.

ENVIRONMENTAL HEARING: Any interested person may request a hearing before the Planning Commission to comment on this document by completing and filing a hearing request with the Planning Division on or before Friday, December 18, 2009. A hearing will then be scheduled and will appear on the agenda for the next available Planning Commission meeting. If you have any questions, wish to know more about this application, or wish to review the plans, please contact Andrew Bermond, Associate Planner, at (805) 692-6032 between 8:30 a.m. and 4:30 p.m. (Monday through Friday).

AMERICANS WITH DISABILITIES ACT: In compliance with the Americans with Disabilities Act, if you need special assistance to gain access to comments or to participate in this meeting, please contact the City of Santa Barbara at the earliest possible, notification at least 48 hours notice so arrangements in most cases.

Before the end of the DMND public review period, a Draft Environmental Impact Report (EIR) will be prepared, and circulated for review by the Planning Commission and City Council to consider the proposed project.

If you have any questions or comments, please contact the City of Santa Barbara Planning Division at the above contact information.

CONCERNING YOUR NEIGHBORHOOD
City of Santa Barbara  
Attn: Andrew Bermond, Associate Planner  
Planning Division  
P.O. Box 1990  
Santa Barbara, CA 93102-1990

Subject: Draft Mitigated Negative Declaration (MND) for the Basin E/F Tidal Restoration Project at Santa Barbara Airport (MST2009-00424, CDP2009-00014)

Dear Mr. Bermond:

Staff of the California State Lands Commission (Commission) has reviewed the subject document. Under the California Environmental Quality Act (CEQA), the City is the Lead Agency and the Commission is a Responsible and/or Trustee Agency for any and all projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters.

By way of general background, upon admission to the Union in 1850, California acquired nearly 4 million acres of sovereign land underlying the State's navigable waterways. Such lands include, but are not limited to, the beds of more than 120 navigable rivers and sloughs, nearly 40 navigable lakes, and the 3-mile wide band of tide and submerged land adjacent to the coast and offshore islands of the State. These lands are managed by the Commission.

The Commission holds its sovereign interest in these lands subject to the Public Trust for commerce, navigation, fisheries, open space, and preservation of natural environments, among others. The Commission is particularly concerned with the natural resources and public recreational opportunities of lands under its jurisdiction.
If you have any questions concerning the environmental review, please contact Crystal Spurr, Staff Environmental Scientist, at (916) 574-0748 or by email at spurrc@slc.ca.gov.

Sincerely,

[Signature]

Marina R. Brand, Acting Chief
Division of Environmental Planning
and Management

Enclosures

cc:  Karen Ramsdell, Airport Director
     Melissa Hetrick, CCC/Ventura
     Jessica Rader, Staff Counsel
     Susan Young, Land Management Division
February 3, 2005

Mr. Stephen Wiley
City Attorney
City of Santa Barbara
P.O. Box 1990
Santa Barbara, CA 93102-1990

Dear Mr. Wiley:

SUBJECT: Negative Declaration (ND) for the Airfield Drainage Improvements at Santa Barbara Airport, SCH 2004121153

Staff of the California State Lands Commission (CSLC) has reviewed the subject document. Under the California Environmental Quality Act (CEQA), the City is the Lead Agency and the CSLC is a Responsible and/or Trustee Agency for any and all projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters.

By way of general background, upon admission to the Union in 1850, California acquired nearly 4 million acres of sovereign land underlying the State’s navigable waterways. Such lands include, but are not limited to, the beds of more than 120 navigable rivers and sloughs, nearly 40 navigable lakes, and the 3-mile wide band of tide and submerged land adjacent to the coast and offshore islands of the State. These lands are managed by the CSLC.

The CSLC holds its sovereign interest in these lands subject to the Public Trust for commerce, navigation, fisheries, open space, and preservation of natural environments, among others. The CSLC is particularly concerned with the natural resources and public recreational opportunities of lands under its jurisdiction.

The subject project involves various improvements to the existing storm drain system that serves Santa Barbara Airport. A portion of the Santa Barbara Municipal Airport is located on filled public trust lands. Historical evidence indicates that portions of Goleta Slough, which was surveyed and sold as tidelands in 1863, contained submerged lands not subject to sale. These submerged lands remain under state
August 6, 2001

Barbara Shelton
City of Santa Barbara
630 Garden Street
Santa Barbara, California 93102

Subject: Draft Environmental Impact Statement/Report – Aviation Facilities Plan, Santa Barbara Airport

Dear Ms. Shelton:

Staff of the State Lands Commission (CSLC) has reviewed the subject document. Under the California Environmental Quality Act (CEQA), the city of Santa Barbara is the Lead Agency and the CSLC is a Responsible and/or Trustee Agency for any and all projects which could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters.

The State acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all the people of the State for the statewide Public Trust purposes that includes, waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. The landward boundaries of the State’s sovereign interests are often based upon the ordinary high water marks of these waterways as they last naturally existed. Thus, such boundaries may not be readily apparent from present day site inspections. The State's sovereign interests are under the jurisdiction of the CSLC. Additionally, the CSLC is a Trustee Agency for any and all projects that could directly or indirectly affect sovereign lands and their accompanying Public Trust resources.

Portions of the Santa Barbara Municipal Airport are located on filled public trust lands. Goleta Slough Estero is excluded from the surrounding Mexican land grants of La Goleta and Los Dos Pueblos. Goleta Slough was surveyed and sold as tidelands in 1863 under Tideland Surveys 5 and 8 (Santa Barbara County). Tidelands, both filled
Allison Cook, Airport Planner
City of Santa Barbara
601 Firestone Road
Goleta, California 93117

Dear Ms. Cook:

Subject: Preparation of Environmental Assessment for Safety Grading Project,
Santa Barbara Municipal Airport

We have received your letter and accompanying exhibits regarding the proposed grading
project at the Santa Barbara Municipal Airport.

The Commission has previously sent correspondence (enclosed) to both the City and the
County of Santa Barbara regarding the Commission’s jurisdiction and the need to resolve title
and boundary issues regarding Goleta Slough. As of the date of this letter, representatives of the
City or County have not initiated contact with the Commission.

Please have a representative of the City contact Curtis Fossum, Senior Staff Counsel,
Southern California Region, at (916) 547-1828 at the earliest possible time to begin resolution of
these issues.

Sincerely,

Mary Griggs
Environmental Services Section
Division of Environmental Planning
and Management

Enclosures

cc: Curtis Fossum
October 21, 1993

Karen Ramsdell
City of Santa Barbara
601 Firestone Road
Goleta CA 93117

Dear Ms. Ramsdell:

SUBJECT: Notice of Preparation (NOP) of a Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Santa Barbara Municipal Airport Master Plan Update & Specific Plan, SCH 93081127

Staff of the State Lands Commission (SLC) has reviewed the subject NOP. We apologize for the lateness of our comments and would appreciate their consideration by the City. Under the California Environmental Quality Act (CEQA), the City is the Lead Agency and the SLC is a Responsible and/or Trustee Agency for any and all projects which could directly or indirectly affect sovereign lands and their accompanying Public Trust resources or uses.

Enclosed are copies of previous correspondence sent to both the City and the County outlining our jurisdiction and the need to resolve title and boundary issues relating to Goleta Slough. We encourage the City to contact SLC staff at the earliest possible time regarding a resolution of these issues.

If you have any questions, please contact Curtis L. Fossum, Senior Staff Counsel, Southern California Region, at (916) 445-7738.

Sincerely,

MARY GRIGGS
Environmental Services Section
Division of Environmental Planning and Management

Enclosures

cc: OPR
Curtis L. Fossum
May 14, 1992

Ms. Joy Hufschmidt
Resource Management Department
Division of Environmental Review
123 E. Anapamu Street
Santa Barbara CA 93101

Dear Ms. Hufschmidt:

SUBJECT: Draft Supplement to Goleta Community Plan Draft Environmental Impact Report (EIR) (91-EIR-13; Supplement #1)

Staff of the State Lands Commission (SLC) has reviewed the above referenced document. Under the California Environmental Quality Act (CEQA), the County is the Lead Agency and the SLC is a Responsible and/or Trustee Agency for any and all projects which could directly or indirectly affect sovereign lands and their accompanying Public Trust resources or uses.

Attached please find a copy of our December 23, 1991 comments to the original Draft EIR for the Goleta Community Plan. The issues and concerns raised in our original comments apply to the draft Supplement as well, and should be addressed as part of the Final EIR.

Thank you for the opportunity to comment. If you have any questions, please contact Curtis Fossum at (916) 445-7738.

Sincerely,

MARY GRIGGS
Environmental Review Section
Division of Environmental Planning and Management

Attachment

cc: Dwight E. Sanders
    Curtis Fossum
    OPR
December 23, 1991

Ms. Carol Whiteside  
State Projects Coordinator  
The Resources Agency  
1416 Ninth Street, Room 449  
Sacramento CA 95814

Ms. Joy Hufschmid  
Resource Management Division  
Division of Environmental Review  
County of Santa Barbara  
105 E. Anapamu St., Room 103  
Santa Barbara CA 93101

Dear Ms. Whiteside and Ms. Hufschmid:

Subject: Draft Environmental Impact Report  
Goleta Community Plan (SCH 90010559)

Staff of the State Lands Commission (SLC) has reviewed the Draft Environmental Impact Report for the Goleta Community Plan (SCH 90010559). Under the California Environmental Quality Act (CEQA), the County of Santa Barbara is the Lead Agency, and the SLC is a Responsible and Trustee Agency.

The State acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all the people of the State for statewide Public Trust purposes which include, waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. The landward boundaries of the State's sovereign interests are generally based upon the ordinary high water marks of these waterways as they last naturally existed. Thus, such boundaries may not be readily apparent from present day site inspections. The State's sovereign interests are under the jurisdiction of the SLC (Public Resources Code Sections 6301, et seq.)

At the same time, the SLC is a Trustee Agency for any and all projects which could directly or indirectly affect sovereign lands and their accompanying Public Trust resources or uses.
Ms. Carol Whiteside  
Ms. Joy Hufschmid  
December 23, 1991  
Page Three  

We appreciate this opportunity to comment and look forward to receiving a copy of the Final EIR and reviewing specific development proposals.

Sincerely,

[Signature]

Elizabeth Patterson  
Resource Planning and Analysis  
Division of Environmental Management and Planning

Attachment
April 25, 1991

Mr. Dave Davis  
Community Development Director  
City of Santa Barbara  
P.O. Box 1990  
Santa Barbara CA 93102-1990

Dear Mr. Davis:

Staff of the State Lands Commission (SLC) has received and reviewed the City of Santa Barbara’s (City) proposed Airport/Goleta Slough Phase III LCP Implementation Program and Draft Master Plan Update for the Santa Barbara Municipal Airport and offers the following comments.

First, staff of the SLC supports the proposed establishment of the Goleta Slough Reserve Zone, as outlined in the Phase III LCP Implementation Program, for the protection and management of the wetland habitat within Goleta Slough (Slough).

Second, by way of general background, upon admission to the Union in 1850, California acquired nearly 4 million acres of sovereign land underlying the State’s navigable waterways. Such lands include, but are not limited to, the beds of more than 120 navigable rivers and sloughs, nearly 40 navigable lakes, and the tide and submerged lands, including the 3 mile wide band of lands adjacent to the coast and offshore islands of the State. These lands are managed by the State Lands Commission (SLC). The SLC holds its sovereign interest in these lands subject to the Public Trust for commerce, navigation, fisheries, open space, and preservation of natural environments, among others. The SLC is particularly concerned with the natural resources and public recreational opportunities of lands under its jurisdiction.

A portion of the Santa Barbara Municipal Airport is located on filled public trust lands. The Goleta Slough Estero was excluded from the surrounding Mexican land grants of La Goleta and Los Dos Pueblos. Goleta Slough was surveyed and sold as tidelands in 1863. However, historical evidence indicates that portions of the tideland patents included submerged lands not subject to sale. These historic submerged lands, therefore, remain under state ownership and under the jurisdiction of the SLC (Public Resources Code Sections 6301 and 6216). The tidelands, filled and unfilled, remain subject to the Public Trust easement. The Coastal Commission jurisdictional (red line) maps indicate the area to be delineated as “potential” public trust lands within the Goleta Slough area.
December 15, 2009

Andrew Bermond, Associate Planner
City of Santa Barbara
P.O. Box 1990
Santa Barbara, CA 93102-1990

Re: NOA of a Draft MND for Goleta Slough Restoration, MST2009-00424, CDP2009-00014

Dear Mr. Bermond:

The Santa Barbara County Air Pollution Control District (APCD) appreciates the opportunity to provide comments on the Notice of Intent to Adopt a Draft Mitigated Negative Declaration (DMND) for the Goleta Slough Restoration. The City of Santa Barbara proposes to grade portions of a 10.3-acre section of the Goleta Slough to reconfigure tidal flows, dam sections of creeks and drainages, remove culverts and drainage barriers to restore and improve wetland habitat.

We offer the following comments regarding the Draft MND:

Air Quality – Existing Conditions and Project Impacts, 2.a - Clean Air Plan, Page 8. This section is mislabeled as “2.b”. In the third sentence of this section, please clarify that the project would not result in any new long-term emissions.

APCD staff also suggests that the following be listed as conditions of approval for the subject project:

1. Standard dust mitigations (Attachment A) are recommended for all construction and/or grading activities. The name and telephone number of an on-site contact person must be provided to the APCD prior to issuance of land use clearance.

2. Fine particulate emissions from diesel equipment exhaust are classified as carcinogenic by the State of California. Therefore, during project grading and hauling, contracts must specify that contractors shall adhere to the requirements listed in Attachment B to reduce emissions of ozone precursors and fine particulate emissions from diesel exhaust.

3. If contaminated soils are found at the project site, the APCD must be contacted to determine if Authority to Construct and/or Permit to Operate permits will be required.

We hope you find our comments useful. Please contact me at 961-8893 or by e-mail at edg@sbcapcd.org if you have questions.
Sincerely,

Eric Gage
Air Quality Specialist
Technology and Environmental Assessment Division

Attachments: Fugitive Dust Control Measures
             Diesel Particulate and NOx Emission Mitigations

cc: TEA Chron File
ATTACHMENT A
FUGITIVE DUST CONTROL

These measures are required for all projects involving earthmoving activities regardless of the project size or duration. Proper implementation of these measures is assumed to fully mitigate fugitive dust emissions.

During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.

- Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.
- If importation, exportation and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.
- Gravel pads shall be installed at all access points to prevent tracking of mud onto public roads.
- After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.
- The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading of the structure.
- Prior to land use clearance, the applicant shall include, as a note on a separate information sheet to be recorded with map, these dust control requirements. All requirements shall be shown on grading and building plans.

**Plan Requirements:** All requirements shall be shown on grading and building plans. **Timing:** Requirements shall be shown on plans prior to approval of Land Use Permit. Condition shall be adhered to throughout all grading and construction periods.

**MONITORING:** Lead Agency shall ensure measures are on project plans and maps to be recorded. Lead Agency staff shall ensure compliance onsite. APCD inspectors will respond to nuisance complaints.
ATTACHMENT B
DIESEL PARTICULATE AND NOx EMISSION MITIGATIONS

Particulate emissions from diesel exhaust are classified as carcinogenic by the state of California. Therefore, following is an updated list of control strategies that should be implemented to the maximum extent feasible.

- Only heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) shall be used.
- The engine size of construction equipment shall be the minimum practical size.
- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
- Construction equipment shall be maintained in tune per the manufacturer’s specifications.
- Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines.
- Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
- Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California shall be installed on equipment operating on-site.
- Diesel powered equipment should be replaced by electric equipment whenever feasible.
- Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible.
  State law requires that drivers of diesel-fueled commercial vehicles weighing more than 10,000 pounds:
  - shall not idle the vehicle’s primary diesel engine for greater than 5 minutes at any location
  - shall not idle a diesel-fueled auxiliary power system (APS) for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if you have a sleeper berth and you’re within 100 feet of a restricted area (homes and schools).
- Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

Plan Requirements: Measures shall be shown on grading and building plans. Timing: Measures shall be adhered to throughout grading, hauling and construction activities.

MONITORING: Lead Agency staff shall perform periodic site inspections to ensure compliance with approved plans. APCD inspectors shall respond to nuisance complaints.
January 13, 2010

Andrew Bermond, Associate Planner
City of Santa Barbara, Planning Division
P.O. Box 1990
Santa Barbara, CA 93102-1990

FAX: (805) 897-1904
Email: ABermond@SantaBarbaraCA.gov.

RE: Notice of Intent to Adopt a Draft Mitigated Negative Declaration for 500 James Fowler Road (Goleta Slough)

Dear Mr. Bermond:

Thank you for the opportunity to comment on the Notice of Intent to Adopt a Draft Mitigated Negative Declaration for 500 James Fowler Road (Goleta Slough). At this time, the County is submitting the attached letter from the County Fire Department. Please note that the County is currently considering options for long-term protection of Goleta Beach County Park and its resources. The 500 James Fowler Road (Goleta Slough) project should consider the County’s efforts through all phases of this project.

The County has no further comments on this project at this time and looks forward to continued dialogue on future projects. If you should have further questions, please do not hesitate to contact my office directly, or Derek Johnson, Director in the Office of Long Range Planning at (805) 568-2072.

Sincerely,

Michael F. Brown
County Executive Officer

cc: Glenn Russell, Director, Planning and Development Department
    Derek Johnson, Director, Office of Long Range Planning
    Richard Todd, Fire Marshall, County Fire Department

Attachment: County Fire Department-Letter dated January 7, 2010
January 7, 2010

Ms. Susan Curtis  
Senior Planner  
County of Santa Barbara  
Office of Long Range Planning  
30 East Figueroa Street  
Santa Barbara, CA 93101

Dear Ms. Curtis:

SUBJECT: City of Santa Barbara MND-Goleta Slough

The above project is located within the jurisdiction of the Santa Barbara County Fire Department. To comply with the established standards, we submit the following with the understanding that the Fire Protection Certificate application may involve modifications, which may determine additional conditions.

GENERAL NOTICE

1. Stop work immediately and contact the County Fire Department, Hazardous Materials Unit (HMU) if visual contamination or chemical odors are detected while implementing the approved work at this site. Resumption of work requires approval of the HMU.

2. Santa Barbara County High Fire Hazard Area Requirements must be met, see California State Law Public Resources/Section 4291.

The Fire Prevention Division must be notified of any changes to the project proposal. Further intensification of use or change in the project description may cause additional conditions to be imposed.

As always, if you have any questions or require further information, please call 805-681-5523 or 805-681-5500.

In the interest of life and fire safety,

[Signature]

Richard Todd  
Division Chief/Fire Marshal

RJ: mkb
June 18, 2009

Mr. Andrew Bermond  
Project Planner  
City of Santa Barbara Airport  
601 Firestone Road  
Santa Barbara, CA 93117

Re: Santa Barbara Airport Wetland Mitigation Acreage Report  
Restoration Sites: Tidal Basin and Airfield Safety Projects Area I, Creek Realignment, and Tecolotito Creek Berms

Dear Mr. Bermond:

The Airfield Safety Projects (ASP) were constructed in 2005 through 2007 at the Santa Barbara Airport (Airport). The ASP consisted of several projects including New Runway Safety Areas (including the relocation of Tecolotito and Carneros creeks approximately 1,000 feet to the west), West Service Road Extension, Eastern Taxiway Improvements, New Taxiway M, East Service Road Extension, and Grading and Drainage Improvements. The Airport Wetland Restoration Plan (Restoration Plan; URS July 2003) was created to provide guidance on mitigation for impacts to wetlands associated with the ASP. The wetland mitigation sites constructed in 2005-2007 include Area I, Tecolotito Creek Berms, R-2 Wetlands, and Creek Relocation (see Figure 1). The Tidal Restoration Demonstration Project (Tidal Basin) constructed in 2005, was not part of the mitigation identified in the Restoration Plan but would potentially serve as mitigation if determined successful after a minimum of two years of monitoring (see Figure 1).

The Restoration Plan called for a 3:1 mitigation ratio for impacts to seasonal wetlands and a 2:1 mitigation ratio for impacts to tidal wetlands. URS Corporation (URS) Project Manager Dr. John Gray prepared a memo on June 13, 2005 that summarized the proposed wetland mitigation acreages would meet the 3:1 ratio, and explained that the California Coastal Commission (CCC) was requiring a 4:1 mitigation ratio for the Coastal Development Permit (CDP) adding an additional 9 acres of seasonal wetland mitigation. This additional mitigation would be implemented after the results of the Tidal Restoration Demonstration Project were completed so that if the Tidal Restoration Demonstration Project was successful it would count toward the seasonal wetland mitigation and additional tidal restoration could be implemented immediately thereafter to obtain the full mitigation requirement. He estimated that an additional 6.5 acres of restoration would be required if the 2.5 acre Tidal Restoration Demonstration Project was successful.
The Tidal Restoration Demonstration Project was accepted as mitigation. In January 2009, the third annual monitoring report determined the Tidal Restoration Demonstration Project to be a success based on the successful establishment of vegetation, benthic macroinvertebrates, and water quality consistent with tidal wetlands, and monitoring data that suggests introduction of tidal flow has suppressed bird-strike hazards. Therefore, the Airport is adopting the 2.5 acre tidal basin as part of their additional 9 acres of seasonal wetland mitigation required by the CCC to meet the 4:1 ratio. Area I, Creek Relocation, R-2 Wetlands, and Tecolotito Creek Berm restoration sites are currently in their third year of maintenance and monitoring and are on their way to successfully meeting the performance criteria by the end of the 7 year maintenance and monitoring period. Once these restoration sites meet their performance criteria and the 7 year maintenance and monitoring program is complete, they will fulfill the original 3:1 seasonal and 2:1 tidal wetland mitigation requirements. Please note that tidal restoration of Tecolotito Creek Berms counts towards the seasonal wetland mitigation, and seasonal wetlands along the berms in the Creek Relocation project area count toward tidal wetland mitigation as specified in the Restoration Plan. Likewise, the Tidal Restoration Demonstration Project and future tidal restoration would count towards the seasonal wetland mitigation requirement.

Now that all the restoration sites have been installed, the current acreages were mapped in the field with a GPS unit and the results are summarized in this letter. These acreages are being evaluated to obtain an estimate of the amount of wetland mitigation that has been completed to date and to determine the remaining mitigation that is to be implemented in order to meet the requirements set forth in the Restoration Plan. These calculations will be used by the Airport during the process of planning additional tidal restoration in Basins E/F (where the current Tidal Basin fills 2.5 acres of the approximately 13 acre area) to fulfill the remaining mitigation requirements.

**Methodology**

URS biologists mapped wetlands at the Tidal Restoration Demonstration Project and the four ASP restoration sites Area I, Creek Relocation R-2 Wetlands, and Tecolotito Creek Berms (see Figure 1). Field mapping was conducted by URS biologists Johanna Kisner, Julie Love, Jessica Birnbaum, and Whitney Wilkinson on June 5, 2008, July 15, 2008, September 12, 2008, and August 21, 2008 using a Trimble GeoXT™ GPS unit capable of sub-meter accuracy and a high quality aerial photograph of the Airport (Airport June 2008).

Wetlands were mapped by using the CCC’s one parameter wetland definition. If either hydrophytic vegetation or wetland hydrology were present in any of the creation/restoration areas they were mapped as a wetland. Although hydric soil is one of the qualifying parameters, the presence of hydrophytic vegetation or wetland hydrology is sufficient for wetland mapping.

C:\Documents and Settings\johanna_kisner\Desktop\Tidal Design\wetland mapping\Wetland Acreages Summary 6-18-09 FINAL.doc
parameters it was not necessary to dig soil pits to determine presence/absence of hydric soils as all of the restoration sites met the one parameter definition by vegetation or hydrology. In enhancement areas, only areas that were planted or seeded with wetland vegetation were mapped as wetlands if they had hydrophytic vegetation. Also, the enhancement areas for Tecolotito Creek Berms that received weed removal treatment along a 25 foot buffer beyond the toe of the berms for two years prior to restoration were included in the mitigation calculations. These areas were calculated by subtracting the areas mapped in the field (seeded areas, future seed areas, and tidal area) from the original estimate of 15.7 in the Restoration Plan, so they are not shown on the attached wetland maps. The wetland status of plant species within the study area was designated using the National List of Species That Occur in Wetlands: California (Region 0) (Reed 1988). This list divides plants into five categories that reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in a wetland versus a non-wetland.

These categories are as follows:

- **Obligate Wetland (OBL)** – Occur almost always (estimated probability >99 percent) under natural conditions in wetlands.

- **Facultative Wetland (FACW)** – Usually occur in wetlands (estimated probability 67 percent to 99 percent), but occasionally found in non-wetlands.

- **Facultative (FAC)** – Equally likely to occur in wetlands or non-wetlands (estimated probability 34 percent to 66 percent).

- **Facultative Upland (FACU)** – Usually occur in non-wetlands (estimated probability 67 percent to 99 percent), but occasionally found in wetlands.

- **Obligate Upland (UPL)** – May occur in wetlands in another region, but occur almost always (estimated probability >99 percent) under natural conditions in non-wetlands in the region specified (California, Region 0).

A positive sign (+) or negative sign (-) is used with the Facultative Wetland, Facultative, and Facultative Upland categories to more specifically define the likelihood of occurrence toward the higher or lower end of the category.

When more than 50 percent of the dominant plant species consisted of OBL, FACW, or FAC (excluding FAC-), the vegetation was classified as “hydrophytic vegetation” in accordance with the Arid West Regional Supplement (USACE 2006). Patches of hydrophytic vegetation encompassing more than 100 square feet were mapped as wetlands. Patches of hydrophytic vegetation less than 100 square feet and individual hydrophytic plants were not mapped as
wetlands. Additionally, bare areas and areas dominated (greater than 50 percent cover) by non-hydrophytic vegetation that were more than 100 square feet were not mapped as wetlands except where wetland hydrology was present.

To reflect classifications in the Restoration Plan, mapped wetlands were classified into two types: created/restored wetlands and enhanced wetlands. Created/restored wetlands are those that have been created by restoring or modifying upland areas that for the most part did not meet wetland criteria prior to the restoration (Area I, Creek Relocation, R-2 Wetlands, and Tecolotito Creek Berms sites). Some of these areas were historical wetlands that have been significantly disturbed or modified. Created/restored wetlands include restoration sites where plants were installed on an irrigation system and routine weeding was conducted. Enhanced wetlands are those that met wetland criteria prior to restoration, but have been enhanced or improved by restoration activities (portions of Area I and Creek Relocation sites). Enhanced wetlands include restoration sites where plants were installed without an irrigation system and routine weeding was conducted.

After the field mapping was completed, GIS analysis was conducted by Senior GIS and CADD Technician David Denniston and GIS Technician Sofia Hamrin. GIS was used to calculate acreages in depressional wetlands with relatively simple topography. Unlike GIS, CADD can account for slope and was used to calculate acreages in areas with more complex topography. Because of the sloped banks and multiple sides of the berms, CADD was used to calculate acreage along the banks of the Creek Relocation restoration site. When accounting for slope, the acreage was increased by 0.56 acres.

**Results**

A total of 44.15 acres of wetlands were created or enhanced within the Tidal Basin and ASP restoration sites, encompassing 34.96 acres of created/restored wetlands and 9.19 acres of enhanced wetlands. Of the total acreage, 30.03 acres count toward the seasonal wetland mitigation ration of 4:1 and 14.12 acres count toward the tidal wetlands mitigation ration of 2:1. See Table 1 for a summary of wetland acreages. Figures 2 through 6 show the location and acreage of each wetland mitigation site.
A total of 37.08 acres of seasonal wetlands are required to meet the 4:1 mitigation ratio required by the CCC CDP. Currently, the on-site seasonal wetlands are 7.05 acres short of meeting this mitigation requirement as long as these sites continue to progress and meet all performance criteria by the end of the maintenance and monitoring period in 2013. This is 0.55 acres more than the 6.5 acres that Dr. Gray predicted would remain to be mitigated. The reason for this small shortage in the mitigation is likely due to a few small areas in the southern R2 wetlands that remained upland because of having to leave in the telephone poles, and a reduced amount of enhanced areas within Area I due to strong competition from weeds in those areas since they were not mulched like the other portions of the site that were graded.

We recommend that the remaining 7.05 acres of seasonal wetland mitigation be implemented with additional tidal restoration in Basin E/F. The current plan is for this remaining
mitigation to be implemented in summer/fall 2010 with a 7 year maintenance and monitoring period. Therefore, it is anticipated that all mitigation would be fulfilled after successful completion of the additional tidal restoration maintenance and monitoring by the end of 2017.

Please contact Johanna Kisner at (805) 361-1121 if you have any questions regarding this report.

Sincerely,

URS Corporation

Johanna Kisner  Julie Love
Project Manager/Biologist    Assistant Project Manager/Biologist

cc: Laurie Owens, Santa Barbara Airport Project Planner

Attachments
Figure 1. ASP Restoration Sites
Figure 2. Carneros Creek - Wetland Mitigation Areas
Figure 3. Carneros and Tecolotito Creeks - Wetland Mitigation Areas
Figure 4. Tecolotito Creek and R-2 Wetland - Wetland Mitigation Areas
Figure 5. Tecolotito Creek and Tidal Basin - Wetland Mitigation Areas
Figure 6. Tecolotito Creek and Area I - Wetland Mitigation Areas
RELEVANT POLICIES

Environmental Review

California Environmental Quality Act of 1970

15074. CONSIDERATION AND ADOPTION OF A NEGATIVE DECLARATION OR MITIGATED NEGATIVE DECLARATION

(a) Any advisory body of a public agency making a recommendation to the decision-making body shall consider the proposed negative declaration or mitigated negative declaration before making its recommendation.

(b) Prior to approving a project, the decision-making body of the lead agency shall consider the proposed negative declaration or mitigated negative declaration together with any comments received during the public review process. The decision-making body shall adopt the proposed negative declaration or mitigated negative declaration only if it finds on the basis of the whole record before it (including the initial study and any comments received), that there is no substantial evidence that the project will have a significant effect on the environment and that the negative declaration or mitigated negative declaration reflects the lead agency’s independent judgment and analysis.

(c) When adopting a negative declaration or mitigated negative declaration, the lead agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based.

(d) When adopting a mitigated negative declaration, the lead agency shall also adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to mitigate or avoid significant environmental effects.

(e) A lead agency shall not adopt a negative declaration or mitigated negative declaration for a project within the boundaries of a comprehensive airport land use plan or, if a comprehensive airport land use plan has not been adopted, for a project within two nautical miles of a public airport or public use airport, without first considering whether the project will result in a safety hazard or noise problem for persons using the airport or for persons residing or working in the project area.

(f) When a non-elected official or decision making body of a local lead agency adopts a negative declaration or mitigated negative declaration, that adoption may be appealed to the agency’s elected decision making body, if one exists. For example, adoption of a negative declaration for a project by a city’s planning commission may be appealed to the city council. A local lead agency may establish procedures governing such appeals.

Access

Local Coastal Program

Policy A-1: Access within the Slough will be restricted to those persons and organizations conducting compatible research and educational projects.

Cultural Resources

Local Coastal Program

Policy F-3: New development shall protect and preserve archaeological or other culturally sensitive resources from destruction, and shall minimize and, where feasible, avoid impacts to such resources. “Archaeological or
other culturally sensitive resources” include human remains, and archaeological, paleontological, or historic resources.

- Coastal Development Permits for new development within or adjacent to archaeologically or other culturally sensitive resources shall be conditioned upon the implementation of appropriate mitigation measures to minimize and, where feasible, avoid impacts to such resources.
- New development on or adjacent to sites with archaeologically or other culturally sensitive resources shall include on-site monitoring by a qualified archaeologist/s and appropriate Native American consultant/s of all grading, excavation, and site preparation that involve earth-moving operations.

**Biological Resources**

*California Coastal Act of 1976*

**30240.** (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

**30230.** Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

**30231.** The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

**30233.** (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

1. New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
2. Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
3. In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
4. Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.
5. Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
7. Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.
(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that not less than 80 percent of all boating facilities proposed to be developed or improved, where such improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.

(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients that would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for these purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

(Amended by: Ch. 673, Stats. 1978; Ch. 43, Stats. 1982; Ch. 1167, Stats. 1982; Ch. 454, Stats. 1983; Ch. 294, Stats. 2006.)

30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

Public Resources Code

30607.1. Where any dike and fill development is permitted in wetlands in conformity with Section 30233 or other applicable policies set forth in this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or the replacement site shall be purchased before the dike or fill development may proceed. The mitigation measures shall not be required for temporary or short-term fill or diking if a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.

Local Coastal Program

Policy C-4: A buffer strip a minimum of 100 feet in width shall be maintained in a natural condition along the periphery of all wetland communities, based upon wetlands delineated in the map entitled “Airport and Goleta Slough Coastal Plan Wetland Habitats, dated January 1998,” and/or the most recent available wetland survey of the site prepared in accordance with the definitions of Section 13577(b) of Title 14 of the California Code of Regulations, and shall include open water, coastal saltwater marsh, freshwater marsh, swamps, salt flats, mudflats, fens, seasonal wetland meadow, riparian woodland, shrub-scrub thicket and wetland transition habitats. Incidental Airport uses and facilities necessary for existing Airport operations and found to be consistent with PRC Section 30233 may be provided and maintained. Where development of the Airfield Safety Projects renders maintenance of a 100 foot buffer area between new development and delineated wetlands infeasible, the City shall provide the maximum amount of buffer area feasible and all impacts to wetland habitat shall be mitigated to the maximum extent feasible such that not net loss of wetland habitat occurs.

Policy C-5: Reduce the flow of sediment into the Slough to the minimum compatible with maintenance of the marshland.
Policy C-9: Any development approved within or adjacent to the wetland areas identified on the habitat map shall have been found to be consistent with PRC’s 30233, 30230, 30231 and 30607.1. Within the sensitive habitat areas, the approval of any restoration project which contains project elements which are not specifically permitted under PRC 30233 shall occur only after the State Department of Fish and Game makes the finding, under section 30411, that the wetland is so severely degraded that major restoration which might include other uses not specifically permitted under 30233 is necessary and will have the primary effect of restoring the degraded area.

Policy C-11: The Airfield Safety Projects, specifically development of the Runway Safety Area Project for Runway 7-25 and construction of Taxiway M, shall not result in the permanent net loss of wetland or upland habitat. Wetland areas temporarily affected by construction activities shall be restored to pre-construction conditions. The required mitigation ratios for the estimated 13.30 acres of permanent wetland and 10-87 acres of permanent upland impacts associated with the Airfield Safety Projects shall be as follows:

- Seasonal Wetlands 4:1
- Creeks and open channels 2:1
- Uplands 1:1

Approximately 36 acres of wetland mitigation shall be accomplished in accordance with the Airport’s October 2001 wetland mitigation plan for the Airfield Safety Projects, in addition to the supplementary mitigation required below. The upland mitigation shall be accomplished in accordance with the Airport’s upland mitigation plan dated April 2002.

Prior to issuance of a Coastal Development Permit for the Airfield Safety Projects, final wetland and upland habitat mitigation, restoration, management, maintenance and monitoring plans shall be developed by a qualified biologist and/or resource specialist and shall be reviewed and approved by the California Department of Fish and Game. An implementation schedule shall be developed as part of the final mitigation plans that includes detailed descriptions of the mitigation sites and surrounding ecology, mitigation goals, objectives and performance standards; restoration and management actions including procedures and technical specifications for wetland and upland planting; methodology and specifications for removal of exotic species; soil engineering and soil amendment criteria; identification of plant species and density; maintenance requirements; monitoring methods, documentation requirements and submittal schedules for reviewing agencies; and performance criteria consistent with achieving the identified goals and objectives of mitigation; measures to be implemented if success criteria are not met; and long-term adaptive management of the restored areas for a period of not less than seven years. Compliance with the plans referenced above shall be a condition of approval of a Coastal Development Permit for the Airfield Safety Projects.

- The City shall implement all habitat mitigation and restoration requirements prior to or in concurrence with development of the Airfield Safety Projects to comply with the above identified mitigation ratios. With respect to wetland mitigation and tidal restoration of the Goleta Slough, the City shall implement all measures necessary to fulfill a 3:1 mitigation requirement for impacts to wetland habitat prior to or concurrently with development of the Airfield Safety Projects and shall continue to examine the feasibility of implementing tidal restoration as a means of meeting the full 4:1 wetland mitigation ratio requirement.

- Once there is authorization from the FAA to proceed with tidal restoration, and concurrence with the California Department of Fish and Game and the Goleta Slough Management Committee on the nature, scope and schedule of the tidal restoration projects following completion of the tidal restoration experiment, the City shall act as lead agency to develop and implement a Tidal Restoration Plan for at least 13.30 acres with participation from U.C. Santa Barbara, the California Department of Fish and Game, the Goleta Slough Management Committee and adjacent property owners. Should any participating agencies or property owners choose not to participate, or an agreement is not reached with all interested parties, the City shall continue to implement tidal restoration options to the maximum extent feasible unless the Commission or the FAA prohibit or deny tidal restoration.
Within five years of issuance of the Coastal Development Permit for the Airfield Safety Projects, the City shall present all documentation, findings and conclusions relative to the tidal restoration studies for review by the Commission. If the evidence demonstrates that tidal restoration is an infeasible means of satisfying the wetland mitigation requirements of the Airfield Safety Projects due to safety concerns, and/or the tidal restoration experiment or project is terminated at any point subsequent to implementation of an approved tidal restoration plan, the City shall immediately implement additional wetland mitigation measures to supplement mitigation efforts in full compliance with the 4:1 wetland mitigation requirements.

If the results of the Goleta Slough Tidal Restoration/Bird Strike Experiment indicate that tidal restoration will not significantly and adversely increase the potential for aircraft bird strikes as determined by the FAA, the City shall provide 13.30 acres of the required wetland mitigation as part of a future, long-term project to restore tidal circulation to portions of the Goleta Slough. In the event that tidal restoration mitigation is determined to be infeasible, the City of Santa Barbara shall provide 13.30 acres of in-kind mitigation for impacts to seasonal wetlands to complete the mitigation requirement. The additional 13.30 acres of wetland mitigation will fulfill the Airport’s requirements for wetland mitigation for the Airfield Safety Projects. Priority shall be given to on-site mitigation for the additional 13.30 acres of wetland mitigation. Off-site mitigation measures shall only be approved should it not be feasible to fully mitigate impacts on-site. The City shall coordinate with the California Department of Fish and Game and the Goleta Slough Management Committee to identify potential off-site mitigation sites. Off-site mitigation measures shall be implemented in an area in close proximity to the project as feasible, and shall not be located outside of the Santa Barbara County area.

Full compliance with all the above provisions of Policy C-11 shall be required by the terms and/or conditions of the Coastal Development Permit authorizing the Airfield Safety Projects.

Policy C-12:  New development shall be sited and designed to protect water quality and minimize impacts to coastal waters by incorporating measures designed to ensure the following:

- Protect areas that provide important water quality benefits, that are necessary to maintain riparian and aquatic biota and/or that are particularly susceptible to erosion and sediment loss.
- Limit increases of impervious surfaces.
- Limit disturbance of natural drainage features and vegetation.
- Minimize, to the maximum extent feasible, the introduction of pollutants that may result in significant impacts from site runoff from impervious areas. New development shall incorporate Best Management Practices (BMPs) or a combination of BMPs best suited to reduce pollutant loading to the maximum extent feasible.

Policy C-14: Construction Phase Erosion Control and Polluted Runoff Control Plans shall be developed for new development or redevelopment projects that require a Coastal Development Permit and a grading or building permit. These plans shall be implemented during the construction phase/phases of the project and shall include:

- Best Management Practices (BMPs) designed to minimize erosion and sedimentation, provide adequate sanitary and waste disposal facilities and prevent contamination of runoff by construction chemicals and materials;
- Revegetation of disturbed areas shall occur the completion of grading activities. Revegetation plans shall consist of native, non-invasive plant species and shall minimize the need for fertilizer, pesticides, herbicides, and excessive irrigation. Where irrigation is necessary to establish new plantings, efficient irrigation practices shall be required.
- Outdoor material storage areas shall be designed using BMPs to prevent stormwater contamination from stored materials.
- Trash and debris storage areas shall be designed using BMPs to prevent stormwater contamination by loose trash and debris.
• Grading and other ground disturbance activities shall be conducted outside of the rainy season. Grading during the rainy season shall be permitted only when there is no other feasible alternative for scheduling and/or for completing ongoing construction activities prior to the rainy season, only where the City determines that completion of grading is more protective of resources, and only when adequate interim erosion control methods are implemented to ensure that such activities will not result in excess erosion and sedimentation.

• A Construction Contingency Plan shall be developed to address methods to control potential migration of subsurface contaminants to the surrounding environment.

Policy C-15: Special status plan and wildlife protection measures shall be implemented for all development projects that will potentially impact sensitive plant and wildlife species and/or that will result in disturbance or degradation of habitat areas that contribute to the viability of plant or wildlife species designated as rare, threatened or endangered under State or Federal law, including plant species designated as rare by the California Native Plant Society.

Policy C-16: With respect to the Airfield Safety Projects, all construction, habitat mitigation and restoration plans, and special status plant or wildlife mitigation and protection measures, shall be reviewed and approved by the regulatory agency/agencies having jurisdiction over the identified resource, including the California Department of Fish and Game, U.S. Fish and Wildlife Service, and the National Marine Fisheries Services, and shall at a minimum include:

• Project timing and implementation schedules that describe timing, duration, methods, and staging areas for all construction operations and restoration plans. The project timing and implementation schedules shall include a submittal schedule for implementation of proposed restoration plans and for all resource monitoring reports.

• Prior to commencement of construction activities, surveys of the project area shall be conducted for special status wildlife species. Should the site survey identify special status wildlife species on or near the project site, a qualified biologist or resource specialist shall develop a plan to avoid or mitigate potential impacts to the sensitive species. Resource avoidance or mitigation plans shall be reviewed and approved by the regulatory agency/agencies having jurisdiction over the identified resource and commencement of construction shall not proceed until such review and approval is granted.

• Construction shall not occur during the nesting and breeding season from mid-March to the end of June, unless a qualified biologist and/or resource specialist and the California Department of Fish and Game, determine with certainty that construction activities will not adversely impact sensitive bird species. Special resource avoidance and management plans shall be implemented for Belding’s savannah sparrow…

• Construction activities related to the Tecolotito Creek realignment shall minimize extensive stream diversions during construction and shall minimize potential impacts to steelhead. Construction of the new creek channel shall be completed prior to connecting with the existing channel and final diversion of stream flow into the new creek channel shall be conducted only between July 15 and October 1 of any given year to avoid the migration period of steelhead.

• Prior to commencement of construction activities, surveys of the project area shall be conducted for special status plant species. Potential impacts to sensitive plant species shall be fully mitigated and a qualified botanist or other resource specialist shall develop a plan to avoid or mitigate potential impacts to the sensitive species. Resource avoidance or mitigation plans shall include, but not be limited to, species-specific salvage or seed collection, salvage of topsoil, restoration of disturbed areas and establishment of new populations in suitable habitat areas. Mitigation, restoration, management, maintenance and monitoring plans shall be developed by a qualified botanist and/or resource specialist and shall be reviewed and approved by the Department of Fish and Game.
**Policy P-5:** Flood-deposited sediment that has accumulated in former tidal wetlands should be periodically removed as part of a long-term program.

**Policy R-2:** Where compatible with existing land uses, restore historic estuarine habitats, functions and conditions. Where existing sensitive resources may be adversely affected by tidal restoration, action should not be taken unless adequate provision for these resources already exists or is made elsewhere in the Ecosystem.

**Policy R-4:** Improve ecological linkages and avoid habitat fragmentation both within the Ecosystem and between the Slough and adjacent ecosystems.

**Development**

*Santa Barbara County Airport Land Use Plan*

**Within Safety Area 3 (General Airport Traffic Pattern Area), the ALUC recommends the following as incompatible land uses:**
Any use which would result in large concentrations of people, such as schools, hospitals, apartment blocks, or shopping centers beneath “downwind and base legs or departure paths” of frequently used traffic patterns. The Airport Planning Advisory Committee will provide assistance to the ALUC and its staff in this determination. Large concentrations is a purposely vague term as the issue will vary with the land use and location. For general purposes, the threshold for review is roughly 25 persons per acre for non-residential uses or more than four units per acre on residential land.

**Zoning Ordinance:**

**GOLETA SLOUGH COASTAL DEVELOPMENT PERMIT**

**29.25.030 Uses Permitted with a Goleta Slough Coastal Development Permit.**

The following uses are permitted in the Goleta Slough Reserve Zone upon the issuance of a Goleta Slough Coastal Development Permit unless specifically exempted.

A. Restoration projects in which restoration and enhancement are the sole purposes of the project.

B. Incidental public service purposes, including but not limited to, installation, burying cables and pipes or inspection of piers, and maintenance of existing intake and outfall lines, where the project is necessary to maintain an existing public service and where it has been demonstrated that there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects.

C. Nature study, bird watching, aquaculture, or other similar resource dependent activities.

D. Alteration of rivers or streams only for the following purposes:
   1. Necessary water supply projects; or
   2. Flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development; or
   3. Developments where the primary function is the improvement of fish and wildlife habitat.

E. Repair or maintenance activities of existing areas or facilities which do not result in an addition to or enlargement or expansion of the object of such repair or maintenance, unless exempted under Municipal Code Subsection 29.25.040.A.

F. Other uses deemed consistent with the intent and purposes of this Chapter and allowed under Public Resources Code Section 30233. (Ord. 5267, 2003; Ord.4674, 1991; Ord. 4375, 1986.)

**29.25.050 Findings.**

Prior to the approval of a Goleta Slough Coastal Development Permit by the Planning Commission, or City Council upon appeal, all of the following must be found:

A. The project is consistent with the City's Coastal Land Use Plan and all applicable provisions of the Code.

B. The project is consistent with the policies of the California Coastal Act.

C. The proposed use is dependent upon the resources of the environmentally sensitive area or the proposed use
is found to be consistent with Section 30233 of the Coastal Act.

D. Development in areas adjacent to an environmentally sensitive area shall be designed to prevent impacts which would significantly degrade such area and shall be compatible with the continuance of such habitat.

E. A natural buffer area of 100 feet will be maintained in an undeveloped condition along the periphery of all wetland areas. Where development of the Airfield Safety Projects renders maintenance of a 100 foot buffer area between new development and delineated wetlands infeasible, the maximum amount of buffer area is provided and all impacts to wetland habitat will be mitigated to the maximum extent feasible such that no net loss of wetland habitat occurs.

F. The proposed use shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific and educational purposes.

G. The proposed project includes adequate impact avoidance and mitigation measures to ensure protection of rare, threatened, or endangered species, that are designated or candidates for listing under State or Federal law, “fully protected” species and/or “species of special concern,” and plants designated as rare by the California Native Plant Society.

H. There is no less environmentally damaging alternative to the proposed development, all feasible mitigation measures have been provided to minimize adverse environmental effects and, if applicable:
   1. All dredged spoils shall be removed from the wetland area to avoid significant disruption to wildlife habitat and water circulation.
   2. Diking, filling or dredging in the Goleta Slough shall maintain or enhance the functional capacity of the wetland or estuary.
   I. Channelizations or other substantial alteration of rivers and streams shall incorporate the best mitigation measures feasible.
   J. Archaeological or other culturally sensitive resources within the Goleta Slough are protected from impacts of the proposed development.
   K. The proposed use shall minimize any adverse effects of wastewater discharges, run-off and interference with surface water flow.
   L. Sedimentation from the proposed development has been reduced to a minimum and is compatible with the maintenance of the wetland area.
   M. The proposed project enhances public educational or recreational opportunities at the Goleta Slough including, but not limited to:
      1. Providing area(s) and facilities on the periphery of the wetland for recreational and educational use of the Slough; or,
      2. Developing educational tour routes and procedures for such tours in dry land areas of the Slough.
      Educational/explanatory signs shall be included as part of any walking tour or viewing facilities project. (Ord. 5267, 2003; Ord. 4674, 1991; 4375, 1986.)

GOLETA SLOUGH RESERVE ZONE (G-S-R)

29.25.010 In General.

The Goleta Slough Reserve Zone is established in order to protect, preserve and maintain the environmentally sensitive habitat areas of the Goleta Slough for the benefit and enjoyment of future generations. The intent of this Chapter is to ensure that any development in or adjacent to any wetland area is designed to preserve the wetland as it exists or improve the habitat values of the Goleta Slough Reserve Zone.

Land classified in the G-S-R Zone may also be classified in another zone. Where a conflict occurs between the provisions in this chapter and other laws or other regulations effective within the City, the more restrictive of such laws or regulations shall apply. (Ord. 4674, 1991; Ord. 4375, 1986.)

29.25.020 Requirements and Procedures.

A. COASTAL DEVELOPMENT PERMIT REQUIRED. In addition to any other permits or approvals required by the City hereafter, a Goleta Slough Coastal Development Permit shall be required prior to commencement of any development within the Goleta Slough Reserve Zone, unless specifically excluded. A Coastal Development Permit under the provisions of Chapter 28.44, shall not be required if the proposed project is only in the G-S-R and S-D-3 Zones; however, a Goleta Slough Reserve Coastal Development Permit shall be required, unless specifically excluded. If a development is in another zone in addition to the G-S-R and S-D-3 zones, both a Coastal Development Permit under this Chapter and under Chapter 28.44 shall be required, unless specifically excluded. If a development is excluded from a Goleta Slough Coastal Development Permit, as stated in Section 29.25.040 of this Chapter, it shall
also be excluded from a Coastal Development Permit under Chapter 28.44 of the Municipal Code.

B. PERMIT PROCESS. The regulations set forth in Chapter 28.44 of the Municipal Code, except as they pertain to the application for a separate Coastal Development Permit, shall apply to the processing of a Goleta Slough Coastal Development Permit application.

C. SUBMITTAL REQUIREMENTS. In addition to the information required to be submitted with an application for a Coastal Development Permit, or any other application requirements of the Community Development Department, the following information must be submitted with an application for a Goleta Slough Coastal Development Permit:

1. Development Plan: A development plan, clearly and legibly drawn, the scale of which shall be large enough to show clearly all details thereof and shall contain the following information:
   a. Contour lines of existing grade with a minimum of two (2) foot intervals;
   b. Dimensions of proposed development and location of proposed use with scale, date and north arrow;
   c. Finished grade contours after completion of development or use clearly showing the location of all proposed grading, cut and fill;
   d. The location of proposed access to the development site during construction and after the project is completed;
   e. The location for the stockpiling of any dredged materials or storage of supplies and equipment during or after construction;
   f. Habitat mapping and impact assessment by a qualified wetland biologist identifying all upland and wetland habitat locations within at least 100 feet from any development, access way, storage site or disturbed area and discussion of any impacts to the wetland or the 100 foot buffer along the periphery of the wetland. Wetland delineations shall be prepared in accordance with the definitions of Section 13577(b) of Title 14 of the California Code of Regulations;
   g. An identification of habitat area that supports rare, threatened, or endangered species that are designated or candidates for listing under State or Federal law, “fully protected” species and/or “species of special concern,” and plants designated as rare by the California Native Plant Society;
   h. Water Quality Mitigation Plan (WQMP) and Stormwater Pollution Prevention Plan (SWPP) details consistent with the criteria of LUP Policies C-12 and C-13.

2. Written description of the project including the purpose of the project and an anticipated schedule for construction and completion.

3. Elevations of the proposed structure from all sides.

4. Written comment on the proposed use or development from the State of California Department of Fish and Game. Review by the Department of Fish and Game shall be coordinated through the City of Santa Barbara Community Development Department Staff.

5. An identification and description of rare, threatened, or endangered species, that are designated or candidates for listing under State or Federal law, and identification of “fully protected” species and/or “species of special concern,” and plants designated as rare by the California Native Plants Society, and avoidance, mitigation, restoration and monitoring measures/plan details consistent with the criteria of LUP Policies C-14 and C-15; and

6. Written description and impact assessment of sensitive archaeological or other culturally sensitive resources and details of avoidance, mitigation and monitoring measures necessary to avoid potential impacts.

7. Other information reasonably required by the Community Development Department.

D. NOTICING. Refer to Chapter 28.44 for noticing requirements. (Ord. 5417, 2007; Ord. 5267, 2003; Ord. 5025, 1997; Ord. 4674, 1991; Ord. 4375, 1986.)