

SRI International

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**DRAFT FINAL ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT REPORT FOR REPLACEMENT OF
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
NATIONAL MARINE FISHERIES SERVICE SOUTHWEST FISHERIES
SCIENCE CENTER, LA JOLLA, CALIFORNIA**

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EXECUTIVE SUMMARY

Introduction

National Marine Fisheries Service (NMFS) is a line office of the National Oceanic and Atmospheric Administration (NOAA). NOAA is part of the United States (U.S.) Department of Commerce. NMFS operates the Southwest Fisheries Science Center (SWFSC), located on the campus of the Scripps Institution of Oceanography (SIO) in La Jolla, California. SIO is part of the University of California at San Diego (UCSD).

NMFS proposes to replace the existing SWFSC Headquarters facility with a modern and safe facility. The preferred site for construction of the replacement facility is an undeveloped 3.3-acre site located on the UCSD/SIO campus, which NOAA would obtain from UCSD via a long-term lease.

To fulfill requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), NOAA and UCSD cooperated in the preparation of this Environmental Impact Statement/Environmental Impact Report (EIS/EIR), which analyzes the potential environmental effects of replacing the existing SWFSC Headquarters facility. NOAA is the NEPA lead agency and University of California (UC) is the CEQA lead agency for purposes of this EIS/EIR.

As required by CEQA, this EIS/EIR: (1) assesses the potentially significant direct, indirect, and cumulative environmental effects of the proposed Relocation of NOAA SWFSC; (2) identifies potential feasible means of avoiding or substantially lessening significant adverse impacts; and (3) evaluates a range of reasonable alternatives to the proposed project, including the required No Project Alternative.

Pursuant to CEQA Guidelines, this EIS/EIR evaluates the effects of the proposed project as part of all development previously analyzed under the 2004 Long Range Development Plan (LRDP) EIR. This EIR will be used by The Board of Regents of the University of California (the Regents) to evaluate the environmental implications of developing the proposed project in relation to those already considered under the 2004 LRDP EIR.

Document Organization

The Final EIS/EIR is comprised of three volumes. Volume I is a reproduction of Volume I of the Draft EIS/EIR, which was issued in November 2008. The Draft EIS/EIR has been revised to reflect the responses to comments received during the official comment period and those changes are tracked in this volume. Additions are underlined and deletions are denoted by strike-through marking. Volume II contains studies that provide background environmental data and technical analyses supporting the EIS/EIR. Volume III contains letters and email messages received commenting on the Draft EIS/EIR, a transcript of the Draft EIS/EIR public meeting and official responses to comments on the Draft EIS/EIR.

EIS/EIR Scoping

NOAA and UCSD conducted formal scoping for this EIS/EIR from February 8 to March 20, 2008. A number of scoping inputs were received from government agencies and the public. The

Final EIS/EIR addresses all substantive issues raised during the scoping period. These issues are summarized below:

- **Visual Aesthetics.** Many members of the local public expressed concern about visual aesthetics. Issues raised were the mass and bulk of new construction and the potential for the relocated SWFSC to block views of the coast and ocean from La Jolla Shores Drive. The Local Community Planning document states that La Jolla Shores Drive is an established scenic route. A berm was constructed along La Jolla Shores Drive adjacent to the preferred site about 30 years ago and obstructs the views to the west and southwest from La Jolla Shores Drive. Some of the local residents would like this berm removed to open views.
- **Parking and Traffic.** Parking is an important issue that a number of scoping participants want addressed in the EIS/EIR. On-campus and off-campus parking in the vicinity of the existing SWFSC and preferred relocation site is limited and causes overflow of parked vehicles onto local public streets during peak demand periods. Concerns were also expressed about increased traffic congestion on La Jolla Shores Drive and traffic and pedestrian safety issues. Nearby residents also inquired about the possible future use of the existing SWFSC buildings by SIO after NOAA vacates them and whether this would cause additional parking in front of their homes.
- **Historic and Cultural Resources.** The Native American Heritage Commission requested that NOAA and UCSD/SIO consult listed Native American contacts and the South Coast Information Center, and complete a Sacred Lands File Search. The San Diego Archaeological Society requested inclusion on the EIS/EIR distribution list.
- **Hazardous Materials.** The Department of Toxic Substances Control (DTSC) requested that NOAA and UCSD/SIO identify potentially contaminated sites within the proposed project area and mitigate these areas. DTSC asked that information on potential contamination be summarized in the EIS/EIR. DTSC also commented on the need for a National Pollutant Discharge Elimination System (NPDES) permit for stormwater.
- **Land Use/Coastal Zone Management.** The California Coastal Commission (CCC) stated that the proposed action will require a Federal Consistency Determination to comply with CCC regulations implementing the Coastal Zone Management Act.
- **Air Quality.** The Environmental Protection Agency (EPA) recommends that the alternatives discussion in the EIS/EIR include the following discussion areas: baseline or current ambient air conditions, National Ambient Air Quality Standards, criteria pollutant non-attainment areas, and potential air quality impacts. The EPA recommends including construction-related impacts analysis in the EIS/EIR and developing a Construction Emissions Mitigation Plan to mitigate any adverse effects to air quality. According to the EPA's comments, the EIS/EIR should address compliance with the Global Warming Solutions Act of 2006 and Executive Order (E.O.) S-03-05 in regard to reducing adverse air quality effects.

- **Biological Resources.** The EPA requested that the EIS/EIR address how the proposed project will meet the requirements of E.O. 13112. E.O. 13112 calls for the restoration of native plant and tree species.
- **Water Resources.** The EPA recommends NOAA include green infrastructure in its design plans for stormwater management, including but not limited to bioretention areas, vegetated swales, porous pavement, and filter strips. The EPA strongly recommends NOAA's proposed project be Leadership in Energy and Environmental Design (LEED) certified for sustainable site development, water savings, energy efficiency, materials selection and indoor air quality.
- **Energy Use.** The EPA recommends the EIS/EIR discuss how the proposed project will comply with the Energy Independence and Security Act of 2007, requiring federal buildings to use 30% less energy over a 10-year period, from 2005 to 2015.

Draft EIS/EIR Review

The Draft EIS/EIR was distributed to the public and government agencies in November 2008 and the official 45-day review period for the Draft EIS/EIR ended on January 12, 2009. Additionally, NOAA and UCSD jointly hosted a public meeting on December 9, 2008, to provide an opportunity for public input. The government published notices announcing the availability of the Draft EIS/EIR in local newspapers, *Federal Register*, and CEQANet and hosted a public meeting at the existing SWFSC on December 9, 2008. Several comment letters, one email, and a number of oral comments on the Draft EIS/EIR were submitted by government agencies and the public. The Final EIS/EIR contains all comments letters and emails received on the Draft EIS/EIR and transcript of the public meeting. This Final EIS/EIR contains official responses to all relevant comments on the Draft EIS/EIR received by NOAA and UCSD. No new significant environmental effects were identified as a result of the comments on the Draft EIS/EIR. The Final EIS/EIR has been revised to reflect the responses to comments and for clarification purposes.

NEPA Purpose and Need

SWFSC is one of six regional fisheries science centers operated by NMFS. SWFSC includes the following divisions: (1) Fisheries Resources, (2) Protected Resources, (3) Antarctic Ecosystem Research, and (4) Information and Technology Services. The SWFSC Headquarters facility also contains space occupied by the Inter-American Tropical Tuna Commission (IATTC) and the California Department of Fish and Game (CDFG); both organizations are involved in fisheries research and protection. The Center contains offices for scientists and management staff, laboratories, seawater aquaria, a library, conference rooms, mechanical and electronic workshops, and extensive computer and data communication facilities. SWFSC benefits from a broad range of strategic and functional relationships with local research and education organizations. Key among these relationships is interaction with UCSD/SIO. The existing SWFSC facility is located on land leased from UCSD. SWFSC and UCSD/SIO strategically share research facilities, staff, students, and faculty. The synergies are highly complementary and cost efficient.

The existing SWFSC Headquarters facility is located at the edge of a 180-foot (ft.) eroding high coastal bluff. The bluff is undergoing a natural retreat process due to erosion caused by wave and tidal action, slumping, gullyng, and block failure of the cliff face. Three of the four existing

buildings are within 25 ft. of the bluff edge and two of the buildings (Buildings B and C) are in the process of being vacated by NOAA due to the safety hazard to occupants should the bluff fail catastrophically. SWFSC buildings will continue to be threatened by ongoing coastal bluff erosion and retreat. Additionally, the existing buildings are over 40 years old and do not meet current seismic safety and building codes. For these reasons, NOAA proposes to replace the existing SWFSC Headquarters with a new facility that is not subject to severe geologic hazards and meets current code requirements.

CEQA Project Objectives

UC proposes to facilitate development of a roughly 124,000 gross sq. ft. replacement facility for NOAA SWFSC in San Diego by leasing land to NOAA for construction and operation of the replacement facility. The proposed location of the project is at the SIO neighborhood at UCSD. UC is the lead agency for the project under the CEQA. The UC Board of Regents will consider approval of the project design and a long-term ground lease for the project site.

CEQA Guidelines Section 15124(b) require that the EIR for the project contain a clear statement of the project objectives. The statement of objectives should include the underlying purpose of the project. The following project objectives have been identified by UC:

- Provide for a new SWFSC facility in the UCSD SIO neighborhood in proximity to other buildings that share programmatic relationships with SWFSC, thereby promoting the interaction and collaboration among SIO and SWFSC researchers and graduate students
- Provide a new facility with access to a seawater infrastructure system that minimizes environmental disturbance
- Foster continued collaboration between SIO and SWFSC by providing expansion space for future program growth
- Expand on-site parking opportunities for SWFSC in order to minimize parking impacts off-site on City streets and in other UCSD parking lots

The objectives of the project are consistent with UCSD 2004 Long Range Development Plan (LRDP), which serves as the land use plan for the physical development of the campus. Specifically, the development of the SWFSC replacement project at UCSD would allow the continuation of forty plus years of productive scientific collaboration between NOAA NMFS and SIO, in addition to expanding and supporting existing and future scientific and research opportunities. The proposed project would also assist the University in its mission and commitment to excellence in teaching, research, and public service, and by maintaining academic excellence, would serve as a resource to the surrounding Community, City, State, and Nation.

Proposed Action and Alternatives

The proposed action is construction and operation of a new roughly 124,000 square foot (sq. ft.) building for SWFSC at a 3.3-acre undeveloped parcel on the UCSD/SIO campus, across La Jolla Shores Drive from the existing SWFSC site. The proposed SWFSC facility would be designed and constructed to obtain Leadership in Energy and Environmental Design (LEED) Silver status, thereby reducing the amount of energy and natural resources consumed during building construction and operation. The new facility would contain about 124,000 sq. ft. of space for offices, laboratories, and support functions and about 202 underground parking stalls. NOAA

plans to start construction of the new building in fall 2009, and building occupancy is expected to occur in 2011. Construction staging would occur at the construction site, a portion of existing Parking Lot P014, and one of two alternative remote locations. During the construction period, trailers would temporarily occupy about 4,400 square feet of space at the existing Parking Lot P014, located south of the construction site. The two alternative remote staging sites are located at the Torrey Pines Gliderport, about 2.2 miles by major road from the construction site, or at an undeveloped grass field adjacent to the southwest corner of the intersection of La Jolla Village Drive and Expedition Way, a distance of about 1.3 miles by major road from the construction site.

As a part of the proposed action, Buildings B and C at the existing SWFSC would be demolished, and Buildings A and D would be turned over to SIO for possible future occupancy by SIO staff occupying crowded existing buildings at the SIO campus. UCSD/SIO projects that up to 44 staffers currently occupying other space at the UCSD/SIO campus would be relocated to Buildings A and D after NOAA vacates these buildings. Up to an additional 22 newly hired staff could be stationed at renovated Buildings A and D. UCSD/SIO would renovate the two buildings to meet current building and life safety, and seismic codes prior to occupying them. All occupants of the existing SWFSC would relocate to the new SWFSC building in 2011, except the IATTC, which would remain at the existing SWFSC until about 2017, and then move to the new facility. NOAA would make about 7,100 sq. ft. of space at the new SWFSC physical plant available for UCSD/SIO use for up to five years.

NOAA and UCSD considered the following alternative actions:

- Bluff stabilization
- On-site redevelopment
- On- and near-site redevelopment
- Off-site development at SIO Deep Sea Drilling Site
- Off-site development at UCSD Hillside Neighborhood Site
- Leased office and research space
- Collocation of SWFSC with other existing NOAA facilities

Each of the alternatives is evaluated in Section 3.2 of the EIS/EIR, but all were eliminated from further analysis. The no-action alternative is also evaluated in the EIS/EIR.

Environmental Setting, Consequences, and Mitigation

The proposed site for construction of a new SWFSC Headquarters facility is a 3.3-acre site on the campus of UCSD/SIO within the community of La Jolla, which is part of the City of San Diego. The existing SWFSC and the proposed replacement site are located in the designated Coastal Management Zone. The new SWFSC would be located in an area designated by UCSD for academic uses and would be consistent with policies contained in the UCSD 2004 Long Range Development Plan (LRDP), which is the governing land use plan for the UCSD campus, including the existing and preferred SWFSC sites. The new SWFSC would be research-use compatible with the LRDP and nearby land uses. NOAA plans to submit a Federal consistency determination to the California Coastal Commission for review and concurrence.

The proposed SWFSC site is located outside earthquake fault hazards zones, but would be subject to strong ground shaking and secondary seismic hazards during a major earthquake. The structure would be designed and constructed in conformance with seismic safety standards of the

2007 California Building Code to mitigate seismic hazards. The proposed site is a stable hillside with no evidence of accelerated erosion. NOAA would implement best management practices during construction to minimize the potential for soil erosion.

Removal of Buildings B and C at the existing SWFSC facility would eliminate the hazard to building occupants and beach users from bluff failure. Under the no-action alternative, Buildings B and C would not be removed and the hazards from bluff failure would not be mitigated.

NOAA contracted for preparation of a hydrologic study by licensed civil engineers. The study found that development of the preferred site would create impervious surfaces and increase peak storm runoff generated at the proposed site from the current 2.8 cubic feet per second (cfs) to 4.4 cfs during the 10-year storm. A substantial portion of this increased runoff would be retained on-site and infiltrated into the soil. NOAA would prepare a Storm Water Pollution Prevention Plan implementing best management practices during construction and demolition activities to prevent washing of pollutants into nearby drainages or the Pacific Ocean. After construction of the new facility is complete, portions of the site not covered by buildings or pavement would be landscaped using native species. The landscaped areas would include retention areas for storm runoff, reducing the rate of storm water flow from the site and decreasing the potential for long-term soil erosion. The new SWFSC would be connected to the City sewage system for disposal of sewage.

SIO operates an existing seawater circulation system that supplies seawater for existing research aquaria at the SWFSC and disposal of used seawater. The new SWFSC would be connected to this system in order to obtain seawater for proposed on-site seawater aquaria and to dispose of used seawater. In the unlikely event that seawater comes into contact with non-native species or chemicals, that seawater would be discharged to the city sewage system for treatment and disposal.

Construction of the new SWFSC facility at the preferred site would require clearing of 1.71 acres of intact and disturbed Diegan coastal sage scrub, 0.37 acre of eucalyptus woodlands, and 0.49 acre of urbanized vegetation. NOAA would preserve/restore Diegan coastal sage scrub vegetation, which is considered a sensitive vegetation community by the U.S. Fish and Wildlife Service (USFWS) and CDFG. At Skeleton Canyon Ecological Reserve of the UCSD Park on the northeast portion of UCSD/SIO campus, the Diegan coastal sage scrub vegetation would be preserved/replaced at a ratio of 2:1 (area preserved/cleared area) to mitigate this impact. Diegan coastal sage scrub vegetation is a habitat for the coastal California gnatcatcher. Detailed surveys conforming to USFWS and the CDFG protocols were conducted in 2006 and 2008 and failed to find evidence of California gnatcatchers at the proposed site. Additionally, wetlands or wildlife corridors do not occur at the proposed site or existing SWFSC site; no impacts to these resources would result. To prevent disturbance to nesting raptors, a biologist would survey trees within 500 feet of the construction and demolition areas. If active nests are found, construction/demolition activities that may disturb the nests would be suspended until the nests are no longer active.

Construction and operation of the new SWFSC facility would generate a considerable number of vehicle trips. These trips would add to the number of vehicles using local roads. Most of the road segments and intersections in the area would operate at Level of Service (LOS) D or better during the AM and PM peak hours during the construction, demolition, and operation phases and

would continue to do so in Year 2030 with cumulative build-out of the area. The segment of La Jolla Shores Drive between North Torrey Pines Road and Downwind Way would operate at LOS E or F in Year 2030 with or without construction of the new SWFSC. The proposed SWFSC would not contribute significantly to traffic congestion on the segment of La Jolla Shores Drive north of the SWFSC driveway. The new SWFSC would have about 202 parking stalls on-site, compared with 30 parking stalls at the existing SWFSC. This would reduce the amount of overflow parking occurring on local streets, a beneficial impact.

Demolition activities to remove Buildings B and C would be staged in the courtyard at the existing site within the boundaries of the existing 2.5-acre NOAA-owned property. Although not accessible from the NOAA property, the beach at the base of the 180 ft. coastal bluff abutting the NOAA property is used by the public for recreational purposes and by UCSD/SIO researchers for scientific studies. A barrier would be installed at the bluff crest to prevent demolition debris from falling over the bluff and onto the beach 180 ft. below the site. Public use of a small portion of the beach at the base of the bluff may be temporarily restricted during the demolition period for safety reasons; however, most of the beach would remain open for public use.

San Diego County is in attainment or unclassifiable for all National Ambient Air Quality Standards, except for the eight-hour ozone standard. Emissions of nitrogen oxides (NO_x, an ozone precursor) during the construction period would exceed the Environmental Protection Agency (EPA) threshold of 50 tons/year, triggering the need for a Federal conformity determination. NOAA would prepare the Federal conformity determination and submit it to EPA. EPA does not approve the determination; it will be NOAA's responsibility to ensure that the proposed action conforms to air quality requirements of the San Diego Air Pollution Control District. NOAA would implement a number of measures to reduce construction/demolition emissions, including

- periodic watering of exposed soil to reduce dust,
- periodic sweeping of streets in the area
- limiting vehicle speeds on unpaved roads and work areas to 15 miles per hour,
- encouraging contractors to use alternative fuel vehicles and equipment,
- limiting idling times to 10 minutes, and
- promptly revegetating exposed areas after construction/demolition is complete.

The proposed SWFSC Headquarters facility would be designed and constructed to obtain LEED Silver status and NOAA would implement a Transportation Demand Management System at SWFSC to reduce the amount of vehicle trips by staff, minimizing direct and indirect emissions of greenhouse gases (GHGs). While the project would contribute cumulatively to GHG emissions, the project construction and/or operations would not individually or cumulatively cause a significant change in the global climate, and would not hinder the ability of the State of California to achieve the goal of reducing GHG emissions pursuant to State of California Global Warming Solutions Act of 2006 (AB 32).

Construction of the new SWFSC facility would intermittently generate loud noises over the two-and-a-half year construction period. Demolition of Buildings B and C at the existing site would also intermittently generate loud noise during the six-month demolition period. The loudest construction and demolition noises would significantly, but temporarily, affect nearby academic

and residential uses. To mitigate this impact, construction and demolition activities would conform to the UCSD construction noise abatement practices, including

- ensuring that equipment and vehicles are equipped with noise reduction devices maintained in good working order,
- limiting the times of construction/demolition to normal working hours to prevent adverse effects on nearby residential and academic uses,
- locating loud construction/demolition activities and equipment away from the nearest residential and academic uses, and
- notifying neighbors in advance of planned construction/demolition activities.

Construction and demolition activities would also generate noticeable vibrations at nearby academic buildings and residences, but no structural damage would result. To mitigate possible disruption of potentially vibration-sensitive scientific research being conducted at the Keck Center for Ocean Atmospheric Research, NOAA would have a specialist monitor vibrations during construction to determine if they reach harmful levels and recommend measures to reduce vibrations, if necessary. Noise and vibration impacts would be less than significant.

The SWFSC building would be constructed into the hillside and the roof would be lower in elevation than La Jolla Shores Drive as it curves around the northern and eastern borders of the preferred site. The building would not block views of the Pacific Ocean from La Jolla Shores Drive. A substantial percentage of the roof area will be dedicated to a photovoltaic farm and a smaller percentage would be a green roof planted with vegetation. This would soften the appearance of the building when viewed by travelers on La Jolla Shores Drive looking downward at the building. The proposed SWFSC would be consistent with policies of the Local Coastal Program to protect ocean views. Exterior lighting at the SWFSC would conform to City, County, and UCSD policies to prevent adverse effects of urban lighting on astronomical observatories of the area. Visual impacts would be less than significant.

No structures listed on the National Register of Historic Places (NRHP) or eligible for listing are located at the preferred site for SWFSC replacement or the demolition area at the existing SWFSC site. One of the alternative construction staging areas is located at the Torrey Pines Gliderport in La Jolla, which is listed on the NRHP. Temporary use of a small portion of the gliderport property for construction staging would not adversely affect gliderport operations or its historic values. A licensed archaeologist performed a survey of the proposed SWFSC site and identified a Native American archaeological site that could be impacted by construction. NOAA plans to complete significance testing at that site before start of the new SWFSC building construction. A Native American monitor would be present for testing and construction excavation activities.

Construction of the new SWFSC facility would occur at an undeveloped site planned for academic use by UCSD/SIO. The proposed action would be consistent with the local UCSD/SIO neighborhood plan. No dislocation of persons or businesses would occur. No substantial increase in employment or change in the nature and intensity of SWFSC operations would result. Construction of the new SWFSC would not separate established neighborhoods, nor would it create barriers to movement of persons and goods. Substantial minority or low-income populations are not located in the area and would not be subject to disproportionately high and adverse environmental effects.

The City of San Diego and local utility companies would provide necessary public services to the new SWFSC. Because SWFSC would be relocated only a short distance from the existing location and the staff size and intensity of activities would remain approximately the same, no significant change in demand for services or consumption of utilities would result. Effects on population and housing demand would be negligible. Replacement of the SWFSC would result in a modest and less than significant economic stimulus due to construction and demolition expenditures. In the long-term, operation of the new SWFSC would result in negligible change in economic activity compared with current SWFSC operations and would not induce growth in the local area.

Based on an environmental due diligence assessment of the preferred site prepared for NOAA by a registered environmental assessor, the proposed site does not contain contaminated soil or groundwater or deposits of solid or hazardous waste. Construction of the new facility and demolition and removal of Buildings B and C at the existing site would generate considerable amounts of solid waste, which would be removed for recycling or disposal at local waste management facilities.

Construction or demolition activities could require temporary restrictions on use of local roads. To prevent interference with emergency response or evacuation, NOAA would notify the UCSD Fire Marshal in advance of road or lane closures.

Significant and Unavoidable Environmental Impacts

The following environmental impacts would result from implementation of the proposed action or no-action alternative and would be significant, even after application of mitigation measures identified in this EIS/EIR.

- Proposed Action

- Construction-period emissions of substantial amounts of NO_x, an ozone precursor, in a Federally designated ozone non-attainment area

- No-Action Alternative

- Buildings B and C would remain at the existing SWFSC and would represent a hazard to persons in the vicinity, including recreational users of Black's Beach at the base of the bluff; this hazard would be due to the potential for catastrophic failure of the coastal bluff on which these buildings are situated

The table that follows provides a summary of the level of significance of environmental impacts expected to result from implementation of the proposed action and the no-action alternative.

Summary of Level of Significance of Potential Impacts

<u>Issue</u>	<u>Proposed Action</u>	<u>No Action</u>
<u>Land Use/Coastal Zone Management</u>	<u>N</u>	<u>N</u>
<u>Geology, Soils, and Geologic Hazards</u>	<u>LSM</u>	<u>S</u>
<u>Drainage and Water Quality</u>	<u>LSM</u>	<u>N</u>
<u>Biological Resources (Threatened and Endangered Species) and Wetlands</u>	<u>LSM</u>	<u>N</u>
<u>Transportation</u>	<u>LS</u>	<u>N</u>
<u>Recreational Resources</u>	<u>LS</u>	<u>S</u>
<u>Farmlands</u>	<u>N</u>	<u>N</u>
<u>Air Quality</u>		
<u>Construction Period</u>	<u>S</u>	<u>N</u>
<u>Operations</u>	<u>LS</u>	<u>N</u>
<u>Noise and Vibrations</u>		
<u>Construction Period</u>	<u>LSM</u>	<u>N</u>
<u>Operations</u>	<u>LS</u>	<u>N</u>
<u>Visual Aesthetics</u>	<u>LS</u>	<u>N</u>
<u>Historic and Cultural Resources</u>		
<u>Historic Resources</u>	<u>LS</u>	<u>N</u>
<u>Archaeological Resources</u>	<u>LSM</u>	<u>N</u>
<u>Socioeconomics and Environmental Justice</u>	<u>LS</u>	<u>N</u>
<u>Public Services and Utilities</u>	<u>LS</u>	<u>N</u>
<u>Population and Housing</u>	<u>LSM</u>	<u>S</u>
<u>Solid and Hazardous Waste</u>	<u>LS</u>	<u>N</u>
<u>Wild and Scenic Rivers</u>	<u>N</u>	<u>N</u>

- S = significant
- LSM = less than significant after application of mitigation
- LS = less than significant
- N = no impact

Environmentally Superior Alternative

CEQA Guidelines contained in the California Code of Regulations, Title 14, Chapter 3, Section 15126.6, require the identification of an environmentally superior alternative, and, if the no-action alternative is environmentally superior, designation of environmentally superior among alternatives other than no action. The no-action alternative is the environmentally superior alternative. Considering alternatives other than no action, the proposed action is the environmentally superior alternative.

Decision Process

The Notice of Availability of the Final EIS/EIR will be published in the Federal Register. UC will issue a CEQA Notice of Determination after issuance of the Final EIS/EIR. A legally

required 30-day period will occur after issuance of the Final EIS/EIR. After the 30-day period has elapsed, NOAA will decide on a course of action and will issue a NEPA Record of Decision. No construction or demolition activities will occur prior to the issuance of the decision documents.

Introduction

National Marine Fisheries Service (NMFS) is a line office of the National Oceanic and Atmospheric Administration (NOAA). NOAA is part of the United States (U.S.) Department of Commerce. NMFS operates the Southwest Fisheries Science Center (SWFSC), located on the campus of the Scripps Institute of Oceanography (SIO) in La Jolla, California. SIO is part of the University of California at San Diego (UCSD).

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Purpose and Need

SWFSC is one of six regional fisheries science centers operated by NMFS. SWFSC includes the following divisions: (1) Fisheries Resources, (2) Protected Resources, (3) Antarctic Ecosystem Research, and (4) Information and Technology Services. The SWFSC Headquarters facility also contains space occupied by the Inter American Tropical Tuna Commission (IATTC) and the California Department of Fish and Game (CDFG); both organizations are involved in fisheries research and protection. The Center contains offices for scientists and management staff, laboratories, seawater aquaria, a library, conference rooms, mechanical and electronic workshops, and extensive computer and data communication facilities. SWFSC benefits from a broad range of strategic and functional relationships with local research and education organizations. Key among these relationships is interaction with UCSD/SIO. The existing SWFSC facility is located on land leased from UCSD. SWFSC and UCSD/SIO strategically share research facilities, staff, students, and faculty. The synergies are highly complementary and cost efficient.

The existing SWFSC Headquarters facility is located at the edge of a 180 foot (ft.) eroding high coastal bluff. The bluff is undergoing a natural retreat process due to erosion caused by wave and tidal action, slumping, gullyng, and block failure of the cliff face. Three of the four existing buildings are within 25 ft. of the bluff edge and two of the buildings (Buildings B and C) are in the process of being vacated by NOAA due to the safety hazard to occupants should the bluff fail catastrophically. SWFSC buildings will continue to be threatened by ongoing coastal bluff erosion and retreat. Additionally, the existing buildings are over 40 years old and do not meet current seismic safety and building codes. For these reasons, NOAA proposes to replace the existing SWFSC Headquarters with a new facility that is not subject to severe geologic hazards and meets current code requirements.

Proposed Action and Alternatives

The proposed action is construction and operation of a new roughly 124,000 square foot (sq. ft.) building for SWFSC at a 3.3 acre undeveloped parcel on the UCSD/SIO campus, across La Jolla Shores Drive from the existing SWFSC site. The proposed SWFSC facility would be designed and constructed to obtain Leadership in Energy and Environmental Design (LEED) Silver status, thereby reducing the amount of energy and natural resources consumed during building construction and operation. The new facility would contain about 124,000 sq. ft. of space for offices, laboratories, and support functions and about 202 underground parking stalls. NOAA plans to start construction of the new building in early spring 2010, and building occupancy is expected to occur in 2012. Construction staging would occur at the construction site, a portion of existing parking at P014, and one of two alternative remote locations. During the construction period, trailers would temporarily occupy about 4,400 square feet of space at the existing Parking Lot P014, located south of the construction site. The two alternative remote staging sites are located at the Torrey Pines Gliderport, about 2.2 miles by major road from the construction site, or at an undeveloped grass field adjacent to the southwest corner of the intersection of La Jolla Village Drive and Expedition Way, a distance of about 1.3 miles by major road from the construction site.

As a part of the proposed action, Buildings B and C at the existing SWFSC would be demolished, and Buildings A and D would be turned over to SIO for possible future occupancy by SIO staff occupying crowded existing buildings at the SIO campus. UCSD/SIO projects that

~~up to 44 staffers currently occupying other space at the UCSD/SIO campus would be relocated to Buildings A and D after NOAA vacates these buildings. Up to an additional 22 newly hired staff could be stationed at renovated Buildings A and D. UCSD/SIO would renovate the two buildings to meet current building and life safety, and seismic codes prior to occupying them. All occupants of the existing SWFSC would relocate to the new SWFSC building in 2012, except the IATTC, which would remain at the existing SWFSC until about 2017, and then move to the new facility. NOAA would make about 7,100 sq. ft. of space at the new SWFSC physical plant available for UCSD/SIO use for up to five years.~~

~~NOAA and UCSD considered the following alternative actions:~~

- ~~• Bluff stabilization~~
- ~~• On site redevelopment~~
- ~~• On and near site redevelopment~~
- ~~• Off site development at SIO Deep Sea Drilling Site~~
- ~~• Off site development at UCSD Hillside Neighborhood Site~~
- ~~• Leased office and research space~~
- ~~• Collocation of SWFSC with other existing NOAA facilities~~

~~Each of the alternatives is evaluated in Section 3.2 of this EIS/EIR, but all were eliminated from further analysis. The no action alternative is also evaluated in this EIS/EIR.~~

Environmental Setting, Consequences, and Mitigation

~~The proposed site for construction of a new SWFSC Headquarters facility is a 3.3 acre site on the campus of UCSD/SIO within the community of La Jolla, which is part of the City of San Diego. The existing SWFSC and the proposed replacement site are located in the designated Coastal Management Zone. The new SWFSC would be located in an area designated by UCSD for academic uses and would be consistent with policies contained in the UCSD 2004 Long Range Development Plan (LRDP), which is the governing land use plan for the UCSD campus, including the existing and preferred SWFSC sites. The new SWFSC would be research use compatible with the LRDP and nearby land uses. NOAA plans to submit a Federal consistency determination to the California Coastal Commission for review and concurrence.~~

~~The proposed SWFSC site is located outside earthquake fault hazards zones, but would be subject to strong ground shaking and secondary seismic hazards during a major earthquake. The structure would be designed and constructed in conformance with seismic safety standards of the 2007 California Building Code to mitigate seismic hazards. The proposed site is a stable hillside with no evidence of accelerated erosion. NOAA would implement best management practices during construction to minimize the potential for soil erosion.~~

~~Removal of Buildings B and C at the existing SWFSC facility would eliminate the hazard to building occupants and beach users from bluff failure. Under the no action alternative, Buildings B and C would not be removed and the hazards from bluff failure would not be mitigated.~~

~~NOAA contracted for preparation of a hydrologic study by licensed civil engineers. The study found that development of the preferred site would create impervious surfaces and increase peak storm runoff generated at the proposed site from the current 2.8 cubic feet per second (cfs) to 4.4 cfs during the 10 year storm. A substantial portion of this increased runoff would be retained on-site and infiltrated into the soil. NOAA would prepare a Storm Water Pollution Prevention~~

~~Plan implementing best management practices during construction and demolition activities to prevent washing of pollutants into nearby drainages or the Pacific Ocean. After construction of the new facility is complete, portions of the site not covered by buildings or pavement would be landscaped using native species. The landscaped areas would include retention areas for storm runoff, reducing the rate of storm water flow from the site and decreasing the potential for long-term soil erosion. The new SWFSC would be connected to the City sewage system for disposal of sewage.~~

~~SIO operates an existing seawater circulation system that supplies seawater for existing research aquaria at the SWFSC and disposal of used seawater. The new SWFSC would be connected to this system in order to obtain seawater for proposed on-site seawater aquaria and to dispose of used seawater. In the unlikely event that seawater comes into contact with non-native species or chemicals, that seawater would be discharged to the city sewage system for treatment and disposal.~~

~~Construction of the new SWFSC facility at the preferred site would require clearing of 1.71 acres of intact and disturbed Diegan coastal sage scrub, 0.37 acre of eucalyptus woodlands, and 0.49 acre of urbanized vegetation. NOAA would preserve/restore Diegan coastal sage scrub vegetation, which is considered a sensitive vegetation community by the U.S. Fish and Wildlife Service (USFWS) and CDFG. At Skeleton Canyon Ecological Reserve of the UCSD Park on the northeast portion of UCSD/SIO campus, the Diegan coastal sage scrub vegetation would be preserved/replaced at a ratio of 2:1 (area preserved/cleared area) to mitigate this impact. Diegan coastal sage scrub vegetation is a habitat for the coastal California gnatcatcher. Detailed surveys conforming to USFWS and the CDFG protocols were conducted in 2006 and 2008 and failed to find evidence of California gnatcatchers at the proposed site. Additionally, wetlands or wildlife corridors do not occur at the proposed site or existing SWFSC site; no impacts to these resources would result. To prevent disturbance to nesting raptors, a biologist would survey trees within 500 feet of the construction and demolition areas. If active nests are found, construction/demolition activities that may disturb the nests would be suspended until the nests are no longer active.~~

~~Construction and operation of the new SWFSC facility would generate a considerable number of vehicle trips. These trips would add to the number of vehicles using local roads. Most of the road segments and intersections in the area would operate at Level of Service (LOS) D or better during the AM and PM peak hours during the construction, demolition, and operation phases and would continue to do so in Year 2030 with cumulative build-out of the area. The segment of La Jolla Shores Drive between North Torrey Pines Road and Downwind Way would operate at LOS E or F in Year 2030 with or without construction of the new SWFSC. The proposed SWFSC would not contribute significantly to traffic congestion on the segment of La Jolla Shores Drive north of the SWFSC driveway. The new SWFSC would have about 202 parking stalls on-site, compared with 30 parking stalls at the existing SWFSC. This would reduce the amount of overflow parking occurring on local streets, a beneficial impact.~~

~~Demolition activities to remove Buildings B and C would be staged in the courtyard at the existing site within the boundaries of the existing 2.5-acre NOAA-owned property. Although not accessible from the NOAA property, the beach at the base of the 180-ft. coastal bluff abutting the NOAA property is used by the public for recreational purposes and by UCSD/SIO researchers for scientific studies. A barrier would be installed at the bluff crest to prevent demolition debris~~

from falling over the bluff and onto the beach 180 ft. below the site. Public use of a small portion of the beach at the base of the bluff may be temporarily restricted during the demolition period for safety reasons; however, most of the beach would remain open for public use.

San Diego County is in attainment or unclassifiable for all National Ambient Air Quality Standards, except for the eight-hour ozone standard. Emissions of nitrogen oxides (NO_x, an ozone precursor) during the construction period would exceed the Environmental Protection Agency (EPA) threshold of 50 tons/year, triggering the need for a Federal conformity determination. NOAA would prepare the Federal conformity determination and submit it to EPA. EPA does not approve the determination; it will be NOAA's responsibility to ensure that the proposed action conforms to air quality requirements of the San Diego Air Pollution Control District. NOAA would implement a number of measures to reduce construction/demolition emissions, including

- ~~periodic watering of exposed soil to reduce dust,~~
- ~~periodic sweeping of streets in the area~~
- ~~limiting vehicle speeds on unpaved roads and work areas to 15 miles per hour,~~
- ~~encouraging contractors to use alternative fuel vehicles and equipment,~~
- ~~limiting idling times to 10 minutes, and~~
- ~~promptly revegetating exposed areas after construction/demolition is complete.~~

The proposed SWFSC Headquarters facility would be designed and constructed to obtain LEED Silver status and NOAA would implement a Transportation Demand Management System at SWFSC to reduce the amount of vehicle trips by staff, minimizing direct and indirect emissions of greenhouse gases (GHGs). While the project would contribute cumulatively to GHG emissions, the project construction and/or operations would not individually or cumulatively cause a significant change in the global climate, and would not hinder the ability of the State of California to achieve the goal of reducing GHG emissions pursuant to State of California Global Warming Solutions Act of 2006 (AB 32).

Construction of the new SWFSC facility would intermittently generate loud noises over the two and a half year construction period. Demolition of Buildings B and C at the existing site would also intermittently generate loud noise during the six-month demolition period. The loudest construction and demolition noises would significantly, but temporarily, affect nearby academic and residential uses. To mitigate this impact, construction and demolition activities would conform to the UCSD construction noise abatement practices, including

- ~~ensuring that equipment and vehicles are equipped with noise reduction devices maintained in good working order,~~
- ~~limiting the times of construction/demolition to normal working hours to prevent adverse effects on nearby residential and academic uses,~~
- ~~locating loud construction/demolition activities and equipment away from the nearest residential and academic uses, and~~
- ~~notifying neighbors in advance of planned construction/demolition activities.~~

Construction and demolition activities would also generate noticeable vibrations at nearby academic buildings and residences, but no structural damage would result. To mitigate possible

~~disruption of potentially vibration-sensitive scientific research being conducted at the Keck Center for Ocean Atmospheric Research, NOAA would have a specialist monitor vibrations during construction to determine if they reach harmful levels and recommend measures to reduce vibrations, if necessary. Noise and vibration impacts would be less than significant.~~

~~The SWFSC building would be constructed into the hillside and the roof would be lower in elevation than La Jolla Shores Drive as it curves around the northern and eastern borders of the preferred site. The building would not block views of the Pacific Ocean from La Jolla Shores Drive. A substantial percentage of the roof area will be dedicated to a photovoltaic farm and a smaller percentage would be a green roof planted with vegetation. This would soften the appearance of the building when viewed by travelers on La Jolla Shores Drive looking downward at the building. The proposed SWFSC would be consistent with policies of the Local Coastal Program to protect ocean views. Exterior lighting at the SWFSC would conform to City, County, and UCSD policies to prevent adverse effects of urban lighting on astronomical observatories of the area. Visual impacts would be less than significant.~~

~~No structures listed on the National Register of Historic Places (NRHP) or eligible for listing are located at the preferred site for SWFSC replacement or the demolition area at the existing SWFSC site. One of the alternative construction staging areas is located at the Torrey Pines Gliderport in La Jolla, which is listed on the NRHP. Temporary use of a small portion of the gliderport property for construction staging would not adversely affect gliderport operations or its historic values. A licensed archaeologist performed a survey of the proposed SWFSC site and identified a Native American archaeological site that could be impacted by construction. NOAA plans to complete significance testing at that site before start of the new SWFSC building construction. A Native American monitor would be present for testing and construction excavation activities.~~

~~Construction of the new SWFSC facility would occur at an undeveloped site planned for academic use by UCSD/SIO. The proposed action would be consistent with the local UCSD/SIO neighborhood plan. No dislocation of persons or businesses would occur. No substantial increase in employment or change in the nature and intensity of SWFSC operations would result. Construction of the new SWFSC would not separate established neighborhoods, nor would it create barriers to movement of persons and goods. Substantial minority or low-income populations are not located in the area and would not be subject to disproportionately high and adverse environmental effects.~~

~~The City of San Diego and local utility companies would provide necessary public services to the new SWFSC. Because SWFSC would be relocated only a short distance from the existing location and the staff size and intensity of activities would remain approximately the same, no significant change in demand for services or consumption of utilities would result. Effects on population and housing demand would be negligible. Replacement of the SWFSC would result in a modest and less than significant economic stimulus due to construction and demolition expenditures. In the long term, operation of the new SWFSC would result in negligible change in economic activity compared with current SWFSC operations and would not induce growth in the local area.~~

~~Based on an environmental due diligence assessment of the preferred site prepared for NOAA by a registered environmental assessor, the proposed site does not contain contaminated soil or~~

~~groundwater or deposits of solid or hazardous waste. Construction of the new facility and demolition and removal of Buildings B and C at the existing site would generate considerable amounts of solid waste, which would be removed for recycling or disposal at local waste management facilities.~~

~~Construction or demolition activities could require temporary restrictions on use of local roads. To prevent interference with emergency response or evacuation, NOAA would notify the UCSD Fire Marshal in advance of road or lane closures.~~

~~Significant and Unavoidable Environmental Impacts~~

~~The following environmental impacts would result from implementation of the proposed action or no action alternative and would be significant, even after application of mitigation measures identified in this EIS/EIR.~~

- ~~Proposed Action~~

- ~~— Construction period emissions of substantial amounts of NO_x, an ozone precursor, in a Federally designated ozone non-attainment area~~

- ~~No Action Alternative~~

- ~~— Buildings B and C would remain at the existing SWFSC and would represent a hazard to persons in the vicinity, including recreational users of Black's Beach at the base of the bluff; this hazard would be due to the potential for catastrophic failure of the coastal bluff on which these buildings are situated~~

~~The table that follows provides a summary of the level of significance of environmental impacts expected to result from implementation of the proposed action and the no action alternative.~~

Summary of Level of Significance of Potential Impacts

Issue	Proposed Action	No Action
Land Use/Coastal Zone Management	N	N
Geology, Soils, and Geologic Hazards	LSM	S
Drainage and Water Quality	LSM	N
Biological Resources (Threatened and Endangered Species) and Wetlands	LSM	N
Transportation	LS	N
Recreational Resources	LS	S
Farmlands	N	N
Air Quality		
Construction Period	S	N
Operations	LS	N
Noise and Vibrations		
Construction Period	LSM	N
Operations	LS	N
Visual Aesthetics	LS	N
Historic and Cultural Resources		
Historic Resources	NLS	N
Archaeological Resources	LSM	N
Socioeconomics and Environmental Justice	LS	N
Public Services and Utilities	LS	N
Population and Housing	LSM	S
Solid and Hazardous Waste	LS	N
Wild and Scenic Rivers	N	N

- S — significant
- LSM — less than significant after application of mitigation
- LS — less than significant
- N — no impact

Environmentally Superior Alternative

CEQA Guidelines contained in the California Code of Regulations, Title 14, Chapter 3, Section 15126.6, require the identification of an environmentally superior alternative, and, if the no-action alternative is environmentally superior, designation of environmentally superior among alternatives other than no action. The no-action alternative is the environmentally superior alternative. Considering alternatives other than no action, the proposed action is the environmentally superior alternative.

Public Review and Comment

This Draft EIS/EIR will be circulated for review by Government agencies and members of the public. Copies of the Draft EIS/EIR will be made available by NOAA upon request and will be

~~placed in local public libraries. NOAA and UC will accept comments on this document during an official period lasting at least 45 days. NOAA and UC will include responses to all relevant comments in the Final EIS/EIR. A legally required 30-day cooling-off period must occur after issuance of the Final EIS/EIR. After the 30-day period has elapsed, NOAA and UC will decide on a course of action and will issue NEPA and CEQA decision documents. No construction or demolition activities will occur prior to the issuance of the decision documents.~~

Decision Process

~~The Notice of Availability of the Final EIS/EIR will be published in the Federal Register. The University of California will issue a CEQA Notice of Determination after issuance of the Final EIS/EIR. A legally required 30-day period will occur after issuance of the Final EIS/EIR. After the 30-day period has elapsed, NOAA will decide on a course of action and will issue a NEPA Record of Decision. No construction or demolition activities will occur prior to the issuance of the decision documents.~~

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ABBREVIATIONS

AB 32	State of California Global Warming Solutions Act of 2006
ACM	asbestos-containing material
ACTT	acoustic calibration and test tank
ADT	average daily trips
APE	area of potential effect
BMP	best management practices
<u>C/CPC</u>	<u>Campus/Community Planning Committee</u>
CAAQS	California Ambient Air Quality Standards
CALCOFI	California Cooperative Oceanic Fisheries Investigations
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCC	California Coastal Commission
C/CPC	Campus/Community Planning Committee
CDFG	California Department of Fish and Game
CEMP	Construction Emissions Management Plan
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CRHR	California Register of Historical Resources
CNEL	community equivalent noise level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CWCP	California Wetlands Conservation Policy
dB	decibel
dBA	A-weighted decibel
DRB	Design Review Board (UCSD)
E.O.	Executive Order
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMFAC	EMission FACtors
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FESA	Federal Endangered Species Act

FPPA	Farmland Protection Policy Act
ft.	foot, feet
GHG	greenhouse gas
gpm	gallons per minute
HrE2	Huerhuero loam, 15 to 30% slope, eroded
IATTC	Inter-American Tropical Tuna Commission
kV	kilovolt(s)
kW	kilowatt(s)
LBP	lead-based paint
LCP	Local Coastal Program
LeD2	Las Flores loamy fine sand, 9 to 15% slope, eroded
LEED	Leadership in Energy and Environmental Design
Leq	equivalent energy noise level
LOS	Level of Service
LRDP	Long Range Development Plan
MBTA	Migratory Bird Treaty Act
MSL	mean sea level
MSPPC	Marine Sciences Physical Planning Committee
n/a	not applicable
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAO	NOAA Administrative Order
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRIS	National Register Information System
O&M	operations and maintenance
O ₃	ozone
OPR	Office of Planning and Research

PCB	polychlorinated biphenyl
PM	particulate matter
PPV	peak particle velocity
PRC	Public Resources Code
RWQCB	Regional Water Quality Control Board
SCIC	South Coastal Information Center
SDAPCD	San Diego Air Pollution Control District
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas & Electric
SHPO	State Historic Preservation Officer
SIO	Scripps Institute <u>Institution</u> of Oceanography
SIP	State Implementation Plan
SO ₂	sulfur dioxide
sq. ft.	square <u>foot</u> (feet)
SRP	Science Research Park (UCSD)
SWFSC	Southwest Fisheries Science Center
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDMS	Transportation Demand Management System
U.S.	United States
UC	University of California
UCSD	University of California at San Diego
USFWS	U.S. Fish and Wildlife Service

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1 INTRODUCTION

1.1 BACKGROUND

National Marine Fisheries Service (NMFS) is a line office of the National Oceanic and Atmospheric Administration (NOAA). NOAA is part of the United States (U.S.) Department of Commerce. NMFS operates six regional fisheries science centers, which conduct scientific research into marine fisheries to assist in management and conservation of these resources. NMFS operates the Southwest Fisheries Science Center (SWFSC), which conducts research into fisheries and marine mammals of the Eastern Pacific and Antarctica for the protection and management of these resources. SWFSC Headquarters is located on the campus of Scripps ~~Institute~~ Institution of Oceanography (SIO), which is part of University of California at San Diego (UCSD). The UCSD/SIO campus is located in La Jolla, California. SWFSC Headquarters is housed in a four-building physical plant built in the 1960s adjacent to a 180-foot (ft.) high coastal bluff. Erosion has caused bluff retreat, which now represents a substantial hazard to two of the four SWFSC buildings. Additionally, the existing SWFSC buildings are aging and do not meet modern seismic and building codes. To address these issues, NMFS proposes to relocate SWFSC Headquarters operations to a modern and safe facility.

1.2 NATIONAL ENVIRONMENTAL POLICY ACT AND CALIFORNIA ENVIRONMENTAL POLICY ACT LEAD AGENCIES

Replacement of the SWFSC Headquarters facility would be a major Federal action subject to procedural requirements of National Environmental Policy Act (NEPA). NOAA is the Federal lead agency for implementing procedural requirements of NEPA, including preparation of this Environmental Impact Statement (EIS). The 2.5-acre real property containing the existing SWFSC facility (see Figure 1) is owned by NOAA via a 99-year deed obtained from the University of California (UC) for operation of SWFSC. If NOAA discontinues use of the property, ownership will revert to UC. The preferred site for construction of a replacement facility for SWFSC (Figure 2) is owned by UC, which would lease the land to NOAA. UC is a State entity and lead agency for implementing the California Environmental Quality Act (CEQA), which requires environmental review of proposed State actions. UC has determined that lease of land to NOAA for construction of the new SWFSC requires preparation of an Environmental Impact Report (EIR) in conformance with CEQA requirements. As allowed by both NEPA and CEQA, NOAA and UC are cooperating in preparation of a joint EIS/EIR document conforming to requirements of both NEPA and CEQA. NOAA is the Federal lead agency for NEPA purposes and UC is the State lead agency for CEQA purposes.

This EIS/EIR analyzes the potential for relocation of SWFSC to cause significant environmental impacts to the human environment. This combined EIS/EIR has been prepared in conformance with the following:

- NEPA (42 U.S. Code 4321–4347)
- Regulations implementing the procedural requirements of NEPA issued by the President's Council on Environmental Quality (Title 40 *Code of Federal Regulations* [CFR], Part 1500 et seq.)



FIGURE 1 AERIAL VIEW OF THE EXISTING SWFSC

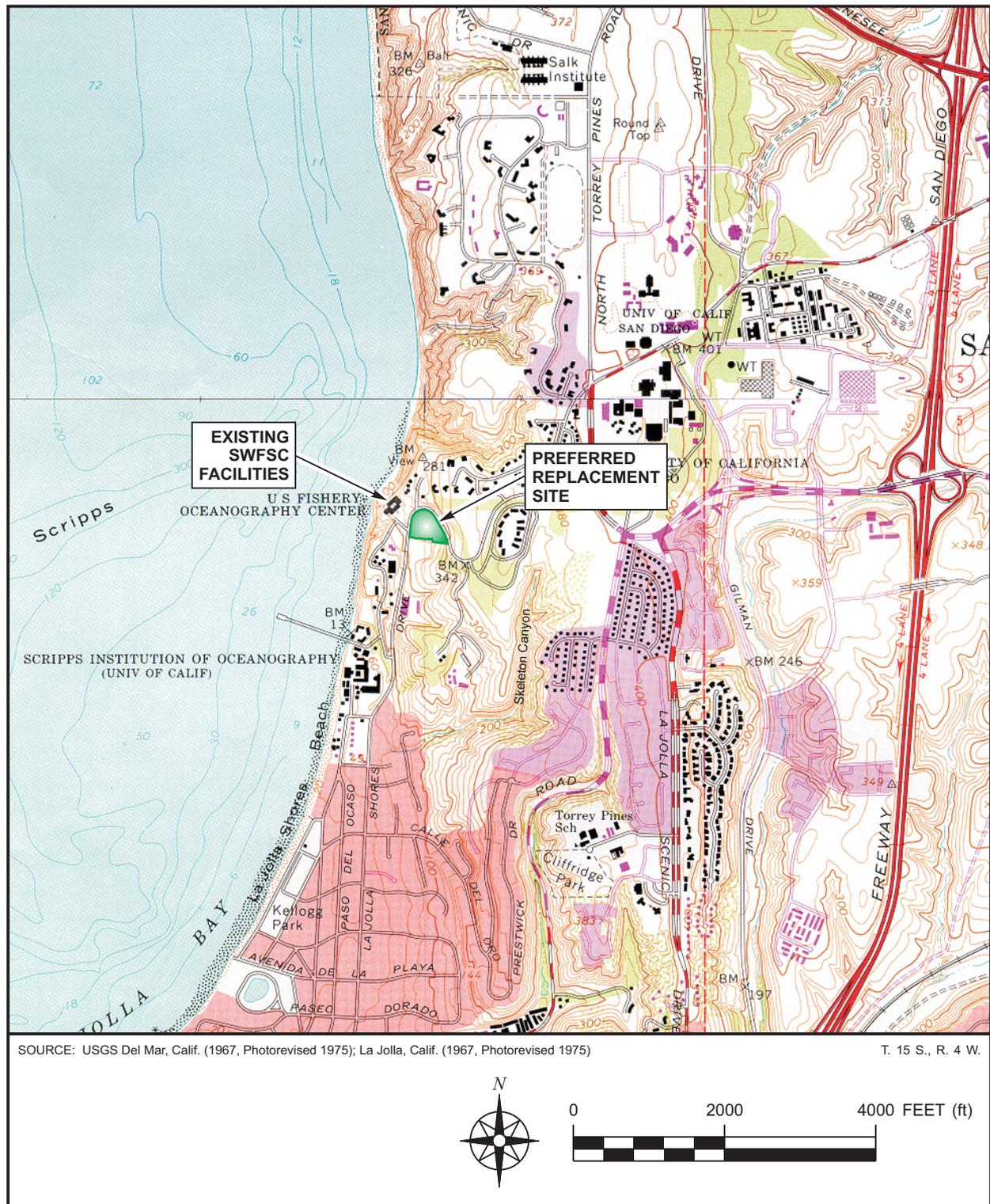


FIGURE 2(a) EXISTING SWFSC AND PREFERRED SITE FOR REPLACEMENT OF SWFSC

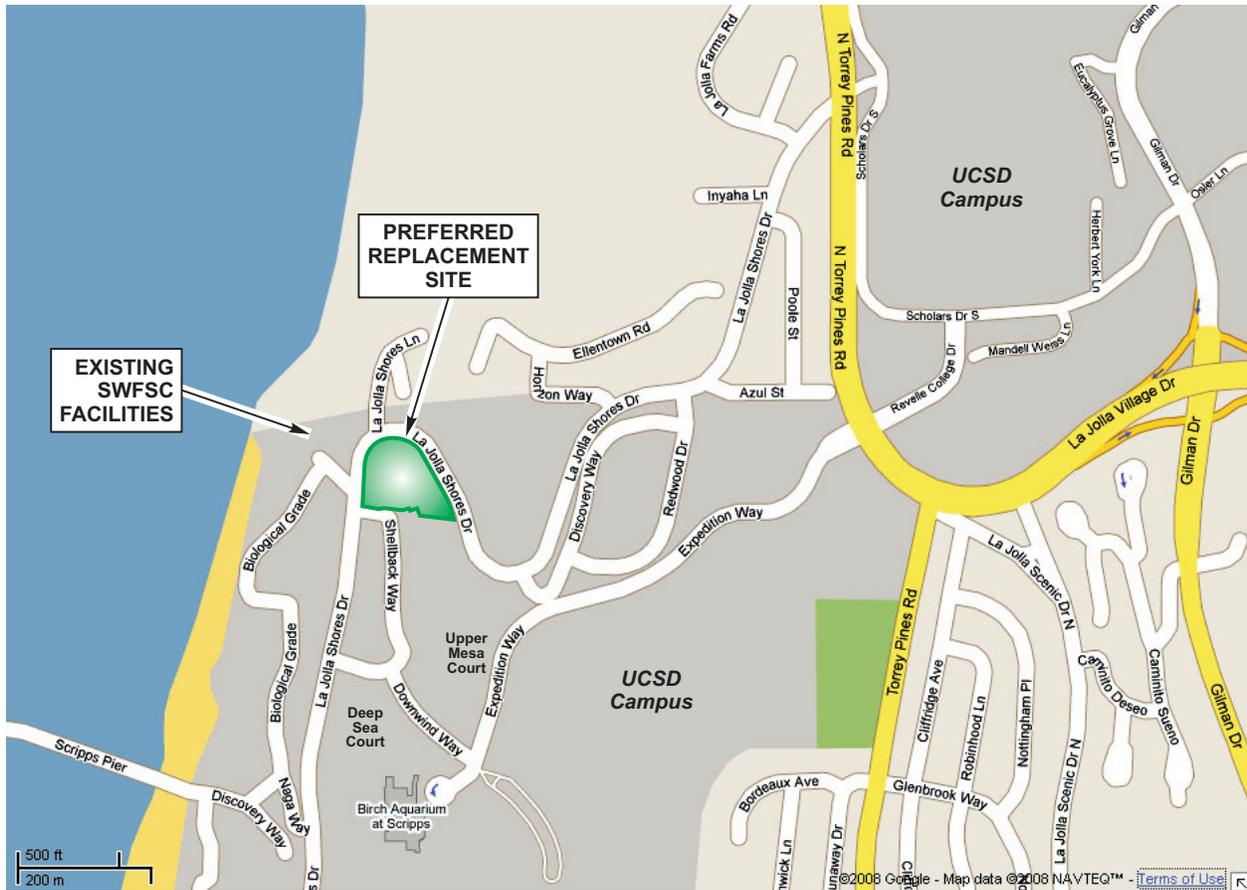


FIGURE 2(b) EXISTING SWFSC AND PREFERRED SITE FOR REPLACEMENT OF SWFSC

- NOAA Administrative Order (NAO) 216-6, *Environmental Review Procedures for Implementing the National Environmental Policy Act*
- CEQA (*Public Resources Code* [PRC] Section 21000 et seq.)
- State CEQA Guidelines (Title 14 *California Code of Regulations* Section 15000 et seq.)
- Input received during the formal EIS/EIR scoping process

1.3 PUBLIC NOTICE OF EIS/EIR PREPARATION AND SCOPING PROCESS

NEPA and CEQA regulations require that lead agencies provide advance notice to responsible Government agencies and the public of the intent to prepare an EIS or EIR. To meet these requirements, NOAA and UCSD/SIO published a Notice of Intent (NOI)/Notice of Preparation (NOP) meeting NEPA and CEQA requirements in a number of sources:

- California State Clearing House February 8, 2008
- *Federal Register* February 11, 2008
- *La Jolla Light* February 14, 2008
- *La Jolla Village News* February 14, 2008
- *San Diego Union Tribune* February 16, 2008

The NOI/NOP announced the official EIS/EIR scoping period, which lasted from February 8 to March 20, 2008. During this period, NOAA and UC held an official scoping meeting open to the public and accepted oral and written comments as to environmental issues of concern, alternative actions, and sources of environmental data. The Scoping Report, reprinted in Volume II of this EIS/EIR, contains details of the scoping process. All scoping comments received by the lead agencies have been addressed in this EIS/EIR.

1.4 PUBLIC REVIEW OF DRAFT EIS/EIR

NOAA and UC submitted ~~theis~~ Draft EIS/EIR to the U.S. Environmental Protection Agency (EPA) and the California State Office of Planning and Research for review and comment, in conformance with NEPA and CEQA implementing regulations. Copies of this document ~~have~~ were also been distributed to persons who participated in the EIS/EIR scoping process and have been sent to local libraries to be made available to the public. NOAA and UC ~~will~~ accepted comments on ~~theis~~ Draft EIS/EIR during a 45-day official comment period ~~lasting at least 45 days that ended on January 12, 2009. Volume III of this Final EIS/EIR contains o~~ Official responses to all pertinent comments received by the Government during the Draft EIS/EIR comment period will be included in the Final EIS/EIR. After completion of the Final EIS/EIR and a required 30-day “cooling off” period, NOAA and UC will issue decision documents describing whether or not they will implement the proposed action or another alternative.

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2 PURPOSE, NEED, AND OBJECTIVES

2.1 NMFS MISSION

The 2003 NOAA Fisheries Strategic Plan outlines the vision, mission, and strategic goals of NMFS. NOAA has an obligation to conserve, protect, and manage living marine resources in a way that ensures their continuation as functioning components of marine ecosystems, affords economic opportunities, and enhances the quality of life for the American public. The primary mission of NMFS is the “stewardship of living marine resources through science-based conservation and management and the promotion of healthy ecosystems.” NMFS is responsible for the management, conservation, and protection of living marine resources within the U.S. Exclusive Economic Zone. NMFS also plays a supportive and advisory role in the management of living marine resources in coastal areas under State jurisdiction, provides scientific and policy leadership in the international arena, and implements international conservation and management measures as appropriate.

To achieve its vision, NMFS conducts the following key activities:

- Conducting high-quality scientific research
- Communicating and collaborating with constituents
- Partnering with other research and conservation organizations
- Enforcing laws and regulations to conserve and protect fishery and marine mammals resources

2.2 SWFSC ACTIVITIES

SWFSC conducts research involving fisheries and marine mammals throughout the Eastern Pacific and Antarctic waters for the protection and management of these resources. SWFSC Headquarters manages NMFS scientific research in the Southwest region. While conducting its own research programs, the La Jolla Laboratory also oversees laboratories located in Pacific Grove and Santa Cruz, California. Scientists at these research centers gather and analyze data on living marine resources and their environment throughout the Pacific Ocean and Antarctic. Each strategically located laboratory conducts marine biological, economic, and oceanographic research on regional resources of the Pacific Ocean.

The La Jolla facility is the largest of the SWFSC laboratories and contains four divisions: (1) Fisheries Resources, (2) Protected Resources, (3) Antarctic Ecosystem Research, and (4) Information and Technology Services. The Center also provides office space for California Department of Fish and Game (CDFG) staff who collaborate with NMFS staff in conducting California Cooperative Oceanic Fisheries Investigations (CALCOFI). The Inter-American Tropical Tuna Commission (IATTC) is another entity housed at the Center. Together, SWFSC and the IATTC conduct collaborative tuna population dynamic studies. The Center contains offices for scientists and management staff, laboratories, seawater aquaria, a library, conference rooms, mechanical and electronic workshops, and extensive computer and data communication facilities.

2.3 SCIENTIFIC COLLABORATION BY UCSD/SIO AND SWFSC

SWFSC benefits from a broad range of strategic and functional relationships with local research and education organizations. Key among these relationships is interaction with UCSD/SIO. SWFSC's existing site is located on the campus of UCSD/SIO. The Center and UCSD/SIO strategically share research facilities, staff, students, and faculty. The synergies are highly complementary and cost efficient. SWFSC operates the world's most authoritative research programs on cetaceans, whales, and dolphins to support various commissions and has a world-class fish stock assessment capability used in support of U.S. fishery management. SIO is the premier U.S. oceanographic institution in the Pacific and contributes its expertise to the shared research in the areas of physical and chemical oceanic processes. For more than 40 years, SWFSC and SIO have jointly benefited by sharing scientific expertise, laboratory space, research equipment, library resources, storage space, seawater, and deployable physical assets such as the UCSD motor pool and SIO and NOAA Marine and Aviation Operations vessels.

The scientific benefits of SWFSC's close working relationship with SIO cannot be overstated. One example is the monitoring and assessment of fish stocks within the California current, a primary part of the SWFSC mission, accomplished jointly with SIO. SIO has one of the world's best oceanography research staffs, which focuses in large part on the California current. SWFSC, with its relatively limited oceanographic capability, makes use of SIO staff and their research to augment SWFSC oceanographic and environmental observation and research. This relationship forms the foundation of NOAA's West Coast Observing System, or Pacific Ocean Observation System.

Another example of collaboration is the 50-year-old CALCOFI program, which uses both NOAA and SIO research ships, jointly staffed by SIO and SWFSC personnel, to conduct regular surveys. This collaboration provides data necessary to support sound management of Pacific ground and pelagic fisheries. Both SIO and SWFSC provide needed equipment on research vessels for oceanic cruises that commonly have durations in excess of 90 sea days. Equipment is staged at the nearby SIO ship berthing facility at Scripps Pier. This collaboration improves staging and operating cost efficiency for NOAA ship operations support functions, which originate from an SIO berth in San Diego Bay.

SWFSC also benefits from access to SIO graduate students, numbering anywhere between 10 and 20, who work on SWFSC research projects critical to the SWFSC mission. SWFSC staff capabilities are strengthened by the interaction and collaboration with SIO staff; opportunities for junior NOAA fisheries staff to pursue advanced degrees at SIO are exceptionally valuable. Several SWFSC senior staff have adjunct positions at SIO, keeping their professional research skills and knowledge on the cutting edge.

SWFSC's 40-year relationship with SIO has provided numerous mutual benefits not identified in previous cost-benefit assessments. For example, SWFSC has highly specialized genetics and micro-constituent laboratory equipment, which are routinely used by SIO. Conversely, SWFSC regularly uses SIO specialized equipment and laboratory spaces rather than duplicate those assets. The same collaboration applies to specialized SIO and SWFSC equipment taken to sea on either SIO or NOAA vessels.

2.4 SWFSC FACILITY NEEDS

In 2007, NOAA performed an assessment of current and future facility needs of SWFSC [Delawie Wilkes Rodrigues, and Barker Architects, 2007]. The Program Document identifies a need for about 124,000 gross square feet (sq. ft.) of floor space for offices, laboratories, storage, conferences and group gatherings, delivery/staging, seawater aquaria, and an acoustic calibration and test tank. An additional 90,000 sq. ft. of parking space is necessary to provide 202 parking stalls, located in an underground garage. This space would support the 283 staff working at the existing SWFSC and accommodate a modest increase of up to 17 additional staff.

2.5 NEPA PURPOSE AND NEED

Section 5.04b1(b) of NAO 216-6 requires that Federal lead agencies include a discussion of purpose and need for the proposed action in an EIS. This section fulfills that requirement.

The existing SWFSC Headquarters facility is at the edge of a 180 ft. eroding high coastal bluff. The bluff is undergoing a natural retreat process due to erosion caused by wave and tidal action and subsequent slumping, gullyng, and block failure of the cliff face. The average rate of retreat of the top of the bluff is approximately 1 ft. per year; however, incidences of cliff toppling occur in discrete episodes often accelerated by El Niño events [Benumof, 2000]. The U.S. Army Corps of Engineers Seattle District [1999] states:

The SWFSC site is located in a seismically active area. Bedrock underlying the facility is heavily jointed and faulted with many of the identified planes of weakness open, in that they contain no infilling to bind the sides of the discontinuities together... The primary slope weakening process agreed upon by all previous researchers is the basal erosion of the cliff face by impinging ocean waves. Waves breaking directly on the cliff loosen and break apart the weaker bedrock formation (Ardath Shale) forming the toe of the geologic formation. The removed bedrock falls to the beach to form a talus slope... Tidal and storm action eventually removes the talus deposit and the oversteepened slope retreats in more dramatic fashion.

Three of the four existing buildings are within 25 ft. of the bluff edge and two of the buildings (Buildings B and C) are being vacated by NOAA due to the safety hazard to occupants should the bluff fail catastrophically. SWFSC buildings will continue to be threatened by ongoing coastal bluff erosion and retreat.

Additionally, the existing buildings are over 40 years old and do not meet current seismic safety and building codes. For these reasons, NOAA proposes to relocate SWFSC Headquarters to a new facility that is not subject to severe geologic hazards and meets current code requirements. Relocation of SWFSC Headquarters to a new facility is not intended to substantially increase the size or intensity of operations, but to allow continuation of current activities in a safe manner.

2.6 CEQA PROJECT OBJECTIVES

UC proposes to facilitate development of a roughly 124,000 gross sq. ft. replacement facility for NOAA SWFSC in San Diego by leasing land to NOAA for construction and operation of the replacement facility. The proposed location of the project is at the SIO neighborhood at UCSD. UC is the lead agency for the project under the CEQA. The UC Board of Regents will consider approval of the project design and a long-term ground lease for the project site.

CEQA Guidelines Section 15124(b) require that the EIR for the project contain a clear statement of the project objectives. The statement of objectives should include the underlying purpose of the project. The following project objectives have been identified by UC:

- Provide for a new SWFSC facility in the UCSD SIO neighborhood in proximity to other buildings that share programmatic relationships with SWFSC, thereby promoting the interaction and collaboration among SIO and SWFSC researchers and graduate students
- Provide a new facility with access to a seawater infrastructure system that minimizes environmental disturbance
- Foster continued collaboration between SIO and SWFSC by providing expansion space for future program growth
- Expand on-site parking opportunities for SWFSC in order to minimize parking impacts off-site on City streets and in other UCSD parking lots

The objectives of the project are consistent with UCSD 2004 Long Range Development Plan (LRDP), which serves as the land use plan for the physical development of the campus. Specifically, the development of the SWFSC replacement project at UCSD would allow the continuation of forty plus years of productive scientific collaboration between NOAA NMFS and SIO, in addition to expanding and supporting existing and future scientific and research opportunities. The proposed project would also assist the University in its mission and commitment to excellence in teaching, research, and public service, and by maintaining academic excellence, would serve as a resource to the surrounding Community, City, State, and Nation.

3 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

3.1 PROPOSED ACTION

NOAA proposes to construct a new facility for SWFSC at an undeveloped 3.3-acre site across La Jolla Shores Drive from the existing SWFSC site (see Figures 2(a) and 2(b) in Section 1). The preferred site is on the campus of UCSD/SIO and administered by UC, which has tentatively offered this site for NOAA use, pending completion of environmental review in conformance with NEPA and CEQA. The preferred site is bounded on the west, north, and east by La Jolla Shores Drive (which curves around the site in a horseshoe shape) and on the south by the Keck Center for Ocean Atmospheric Research (which is part of UCSD/SIO), and UCSD Parking Lot P014. This location is desirable because it is of sufficient size to allow construction of the required SWFSC facilities and is in proximity to SIO research units, thereby promoting continued collaboration among SIO and NOAA fisheries researchers.

UC proposes to lease the preferred 3.3-acre site to NOAA for construction and operation of a new physical facility for the SWFSC (see Figures 2(a) and 2(b) in Section 1). The lease would have a base period of 55 years with two 5-year options that NOAA could exercise to extend the lease period. NOAA would relocate activities at the existing SWFSC buildings to the new facility after construction is completed, with the exception of the IATTC which would stay at the existing SWFSC buildings for up to 65 months after construction of the new facility is completed.

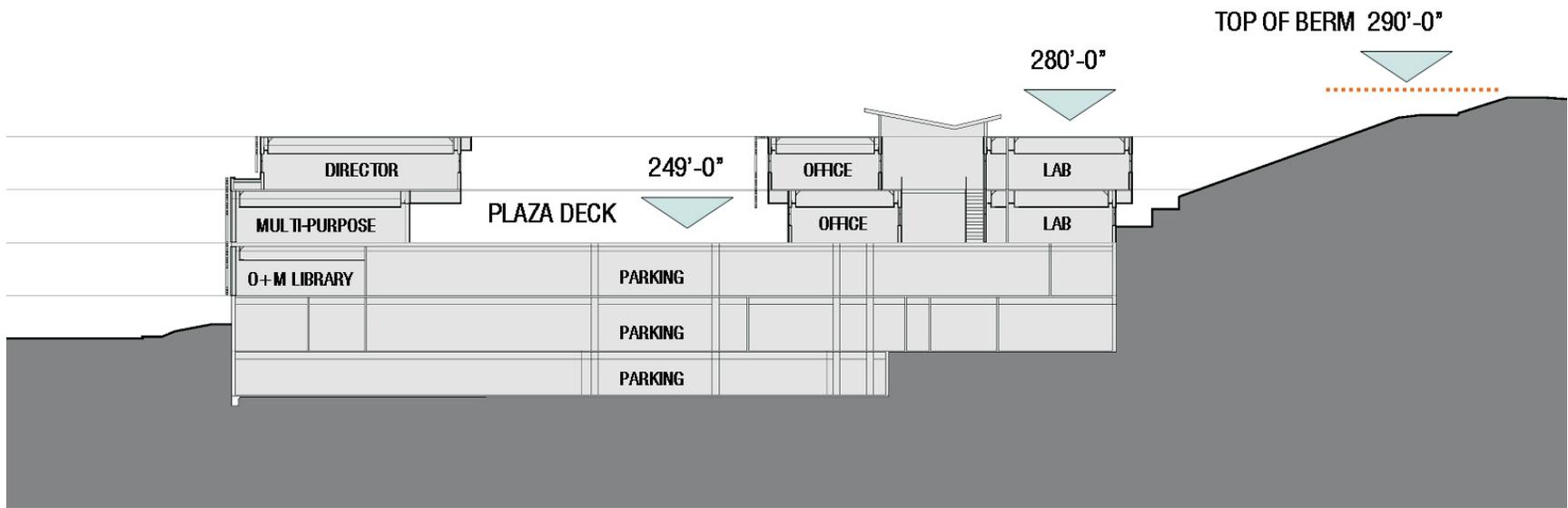
NOAA proposes to construct a roughly 124,000 sq. ft. building at the preferred site (Figures 3, 4, and 5). A single building would have five levels that would be partially underground and built into the hillside at the site to reduce the building's apparent height and bulk. The building would be designed and constructed to meet U.S. Green Building Council Leadership in Environmental and Energy Design (LEED) Silver standards. The proposed SWFSC building would include the following green building features:

- Partial green roof planted with native vegetation
- Shading of windows
- Windows with low emissivity glass
- Light-colored exterior
- Daylighting of work spaces
- Bicycle parking and showers for staff use
- Photovoltaic solar panels
- Highly efficient lighting
- High-efficiency boilers
- Natural ventilation and ceiling fans
- Roof insulation of R30 or greater
- Water-conserving plumbing fixtures (for example, low-flow shower heads and waterless urinals)
- Retention of storm water on-site



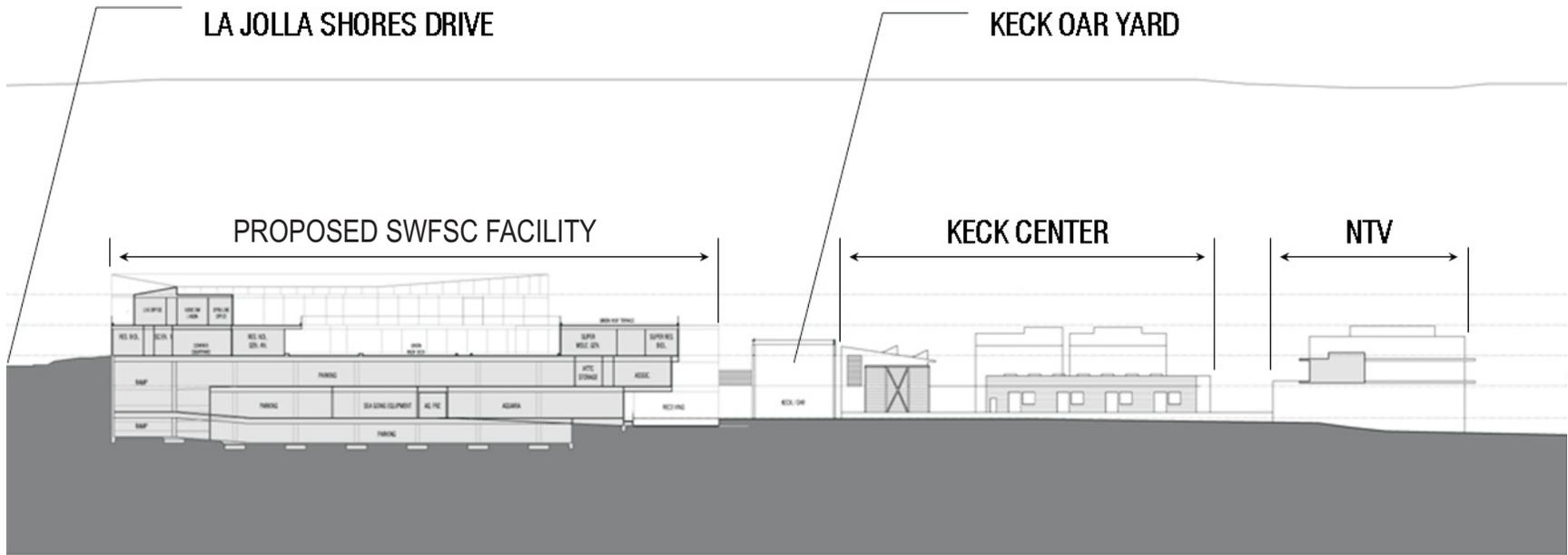
Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 3 SIMULATION OF PROPOSED SWFSC FACILITY IN AERIAL VIEW



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 4 BUILDING SECTION OF PROPOSED SWFSC FACILITY (EAST-WEST)



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 5 BUILDING SECTION OF PROPOSED SWFSC FACILITY AND VICINITY (NORTH-SOUTH)

- Native landscaping
- Green building materials with recycled content and/or renewable source (for example, structural steel with recycled content, fly ash in concrete, wood from certified sustainably managed forests)
- Indoor furnishings that minimize off-gassing of chemicals

These features would reduce energy and water use, reduce consumption of natural resources by using recycled instead of virgin materials, decrease generation of air and water pollutants, and provide for a healthier working environment for staff.

The proposed building would contain areas for the following uses:

- Level 1: Underground parking and building support systems
- Level 2: Parking, common scientific support space, operations and maintenance (O&M) space, and seawater tank
- Level 3: Parking, O&M space, IATTC space, and seawater tank
- Level 4: Common scientific space and room for Antarctic Ecosystem, Protected Resources, and Fisheries Resource Divisions
- Level 5: Director's offices, Information Technology offices, Fisheries Resource Division, CDFG, and lunchroom

The new SWFSC would include an acoustic calibration test tank (ACTT) with a capacity of 550,000 gallons for seawater. The ACTT would be used to test and calibrate equipment. The new SWFSC would be connected to the existing SIO seawater distribution system, which would supply seawater for the SWFSC aquaria tanks and the ACTT. The ACTT seawater system would operate as a re-circulating system where as the SWFSC aquaria tanks would be single pass flow. On an as needed basis, waste seawater from SWFSC aquaria would be directed to the ACTT. The flow rate of seawater to the SWFSC would be about 50 gallons per minute (gpm). The ACTT would include a filtration system to continuously clean water and maintain its quality. NOAA would return seawater untreated and in contact with only native aquatic species from the aquaria tanks to the SIO seawater system for ocean discharge. Seawater which is discharged from the ACTT, comes into contact with non-native species, or is chemically treated would be discharged to the City of San Diego Metropolitan Wastewater Department sanitary sewage system. Discharge of waste seawater would occur primarily during backwashing of filters and performance of tank maintenance. The Metropolitan Wastewater Department requires metering of imported flows [Wilkinson, 2009]. Waste seawater from the SWFSC would be classified as an imported flow. NOAA would install a meter to measure the volume and flow rate of seawater discharged to the City sewage system and would discharge water during non-peak hours to minimize impacts to the sewage system.

NOAA would grant a license to UC, allowing the University to occupy 7,100 usable sq. ft. at the new facility for a period of up to 60 months after facility construction is complete.

In support of the proposed action, staging of construction activities would occur at staging areas and would be limited to

- unloading of trucks delivering equipment, materials, and supplies;
- temporary storage of equipment, materials, and supplies;

- parking of workers' personal vehicles;
- temporary placement of portable toilets; and
- turn around of vehicles.

No storage of fuel or water, operation of concrete/asphalt batch plants, assembly of building materials, stockpiling of soil, or collection/storage of solid or hazardous waste would occur at the staging area.

The SWFSC construction site is not of sufficient size to accommodate both construction and staging activities, therefore staging would occur at the construction site, the adjacent Parking Lot P014, and one or more remote locations. Construction trailers will temporarily occupy about 4,400 sq. ft. of space (that is, roughly 19 parking stalls) at the existing Parking Lot P014, located south of the construction site (Construction Staging Area 2). About 1.15 acres (50,000 square feet) of additional land outside the SWFSC construction site would also be required for staging. Two remote sites, both owned by UCSD, are under consideration for construction staging. The preferred site for additional staging is Construction Staging Area 3, an undeveloped grass field adjacent to the southwest corner of the intersection of La Jolla Village Drive and Expedition Way, a distance of about 1.3 miles by major road from the construction site. Alternatively, remote staging of construction activities may occur at Construction Staging Area 4 at the Torrey Pines Gliderport located west of North Torrey Pines Road and north of Torrey Pines Scenic Drive, a distance of about 2.2 miles by major road from the construction site. This area has been used previously by UCSD for construction staging activities. The off-site staging area would be fenced for security purposes. Construction workers would be ferried in vans or small shuttle buses between the staging area and the construction site. The shuttle would make 10 to 20 round trips per day between the staging area and the construction site.

As a part of the proposed action, NOAA would demolish Buildings B and C at the existing SWFSC within 72 months after construction of the new facility is complete. Demolition would consist of the following steps [Casper Company, 2005]:

- Disconnect utilities
- Stage equipment in courtyard area
- Place silt fence around site, including along bluff crest
- Remove asbestos-containing materials (ACMs) and lead-based paint (LBP) from buildings
- Strip buildings down to concrete shell
- Use ultra-high demolition excavator to break up and move concrete shells
- Use second excavator to separate steel and process concrete
- Use excavator with breaker to remove concrete foundations
- Remove all debris and materials for off-site recycling or disposal at licensed facilities
- Clean area

NOAA plans to repair any damages caused during demolition of Buildings B and C and contour the ground surface at the demolition area to direct storm water away from the adjacent bluff, thereby reducing the potential for erosion of the bluff top. Denuded areas would be seeded and/or planted to establish drought-resistant vegetation.

After demolition and removal of Buildings B and C is complete, NOAA would transfer the 2.5-acre property and remaining two Buildings A and D to UC for possible reuse. UCSD/SIO plans to move about 44 researchers from existing overcrowded buildings at the SIO campus into the two buildings vacated by NOAA, provided that the two buildings can be economically rehabilitated to meet current seismic and safety codes. An anticipated additional 22 new SIO hires might be staffed in Buildings A and D.

The exterior design of the new facility would be consistent with design guidelines contained in the UCSD LRDP. The facility design is being reviewed by two UCSD committees to ensure conformance to the LRDP: Marine Sciences Physical Planning Committee (MSPPC) and Campus/Community Planning Committee (C/CPC). The building would be set into the sloping hillside at the site to minimize its visual presence. To external viewers, it would not appear as a five-story building. The new building would provide 202 parking spaces under the building. The building would be accessible via a drive connecting to La Jolla Shores Drive and to the Keck Center parking lot to the south. The building would be designed to conform to LEED Silver standards, thereby maximizing energy efficiency and environmental effects of the building.

Overall, the preferred site is expected to accommodate the desired SWFSC Headquarters building program consistent with UCSD's 2004 LRDP. Further, location of the new SWFSC at this preferred site would fulfill the purpose and need for this action. For these reasons, construction of a new SWFSC at the preferred site is NOAA's preferred alternative and is evaluated in detail in this EIS/EIR.

If NOAA decides to implement the proposed action, construction would start in ~~2010~~ 2009 and the building would be ready for occupancy in ~~2012~~ 2011. Employees and operations at SWFSC and at temporary leased offices in the area would be moved into the building, followed by demolition of at-risk Buildings B and C at the existing SWFSC plant.

The preferred site is designated as academic use in the UCSD 2004 LRDP [UCSD 2004a], and the proposed SWFSC use would be consistent with that designation. UC and associated decision-making bodies will be involved throughout development of the proposed project. The preferred site is within the Coastal Zone and would require a coastal development permit from the California Coastal Commission (CCC). Additionally, any access from La Jolla Shores Drive would have to conform to the City of San Diego design guidelines and may require additional permits from the City. Based on the impact analysis contained in this EIS/EIR, other than the no-action alternative, the proposed action is the environmentally superior alternative.

3.2 ALTERNATIVES TO THE PROJECT

3.2.1 Range of Alternatives Considered

NOAA and UCSD have cooperated in exploring a broad range of alternatives to provide a modern physical plant for SWFSC that is not subject to the severe geological hazards affecting the current site. Alternatives considered included the following range of alternatives:

- Redevelopment of the existing SWFSC site with or without structural bluff stabilization (see Section 3.2.1.1)
- Redevelopment of the existing SWFSC site and adjacent undeveloped land (see Sections 3.2.1.2 and 3.2.1.3)

- Construction of a new SWFSC facility at alternative sites on the UCSD campus (that is, SIO Deep Sea Drilling Site [see Section 3.2.1.4] or Hillside Neighborhood Site [see Section 3.2.1.5])
- Relocation of SWFSC operations to leased space in the La Jolla area (see Section 3.2.1.6)
- Collocation of SWFSC operations with other NOAA activities (see Section 3.2.1.7)

Each of these potential alternative actions was compared to the purpose and need and objectives described in Section 2 to determine the extent to which they would fulfill these requirements. In addition, the potential alternative actions were evaluated for feasibility based on the criteria contained in NEPA Implementing Regulations (40 CFR Section 1502.14—Alternatives including the proposed action) and CEQA Guidelines Section 15126.6—Consideration of Alternatives to the Proposed Project. The NEPA Implementing regulations require that EISs “rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.” ~~That section~~ The CEQA Guidelines requires EIRs to include information on a reasonable range of alternatives, including “. . . those that could feasibly attain most of the basic objectives of the project, and could avoid or lessen one or more of the significant effects.” CEQA ~~f~~Factors that may be applied to determine feasibility include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and site availability [California Resources Agency, 2008]. This section evaluates whether each of the alternatives considered would meet the purpose and need for the proposed project identified by NOAA. Based on this evaluation, the alternatives identified have been determined to be infeasible; however, those alternatives that were determined by UCSD to feasibly attain some of the objectives of the proposed project are evaluated in greater detail in Sections 3.2.1.1 through 3.2.1.7 under the subheadings “CEQA Impact Analysis and Ability to Meet Project Objectives” to determine whether any of the alternatives could reduce or eliminate any significant impacts associated with the project as proposed, despite failing to meet some of the objectives of the project.

3.2.1.1 Bluff Stabilization

NOAA conducted a number of geotechnical studies to explore the potential for stabilizing the bluff adjacent to the existing SWFSC buildings, thereby minimizing future erosion and mitigating the bluff retreat hazard. Group Delta Consultants, Inc., prepared a conceptual design for bluff stabilization [1999]. The conceptual design includes treatments for the upper, middle, and lower bluffs. To stabilize the upper bluff, two shotcrete walls would be installed and tied into bedrock with 120 ft. long rock bolts. The upper wall would be installed at elevations between 165 and 215 ft. above mean sea level (MSL) and the lower wall at 137 to 165 ft. MSL. A man-made bench would be located between the two walls at roughly 165 ft. MSL elevation. The upper and lower walls would be 430 ft. and 540 ft. in length, respectively. The middle bluff would be left as is, although future treatment of this area might be necessary. The lower bluff is subject to erosion from wave action. A 540 ft. long rock revetment would be placed at the base of the bluff to armor the bluff against wave action. The revetment would consist of four-ton stones underlain by one-half-ton stones. The revetment would be keyed to a depth of 2 ft. into the bedrock platform in the tidal zone, which is part of the Scripps Coastal Reserve. Stabilization of the bluff would remove the threat to existing Buildings B and C, allowing NOAA to safely occupy those buildings into the future. As a result, SWFSC operations would continue without

disruption. However, this alternative would not provide for the additional space required by SWFSC in the future.

The proposed shotcrete walls would be colored and textured to minimize visual contrast with the natural bluff face. However, the walls would be quite large. Each wall would be 430 to 540 ft. in length and 28+ ft. in height. Given their large sizes, the walls would be visually prominent and highly visible from the beach. Additionally, the rock revetment would have significant visual and physical impacts on the beach at the base of the bluff. The addition of a large revetment would alter the physical and natural processes being studied at the UC Natural Reserve, adversely affecting that ongoing long-term research. UC owns the bluff face and is opposed to this alternative due to the level of environmental impacts that would result to the shoreline and ongoing scientific studies. UC will not lease land required to implement this alternative to NOAA.

This alternative is considered infeasible because the land necessary to implement this alternative is not available. Additionally, this alternative would result in greater environmental impacts than the proposed action due to interference with ongoing research at the UC Natural Reserve and adverse aesthetic effects of the massive bluff stabilization structures. NOAA rejected this alternative because it is infeasible and the level of environmental impact would be greater than that for the proposed action.

NEPA/CEQA Impact Analysis and Ability to Meet Purpose and Need/Project Objectives.

This alternative would allow SWFSC to remain at its existing location by stabilizing the bluff face; however, it would increase biological resource impacts over the proposed project by substantially modifying natural habitats on the bluff face and adjacent beach due to placement of shotcrete and a revetment associated with the bluff stabilization efforts. Physical and natural processes would also be significantly modified as a result of this alternative, potentially causing significant changes in the beach and near shore coastal environments located at the base of the cliff. This alternative would also result in much greater visual quality impacts than the proposed project, as a large portion of the bluff would be completely transformed from a natural to a man-made appearance. Construction-related air quality and traffic impacts would be somewhat less than the proposed project as there would be less grading, although the stabilization of the bluff face would be a significant engineering undertaking that would result in excessive noise and vibration events that could be significant. This alternative would not meet the purpose and need or objectives of the proposed project to provide (1) additional on-site parking opportunities in order to minimize parking impacts off-site and on City streets; and (2) space for future program growth.

3.2.1.2 On-Site Redevelopment

NOAA analyzed the potential for redeveloping the existing 2.48-acre site to provide a new facility for SWFSC. NOAA considered variants of this alternative, including (1) removal of all existing structures and construction of a new Center, and (2) retaining one or two of the existing buildings at least risk and building a new structure to supplement the space provided by the retained buildings. Any retained or new buildings would need to be set back either 40 ft. or 60 ft. from the top of the bluff to mitigate the hazard from ongoing bluff retreat. Based on average bluff retreat rate of about 1 ft. per year [Benumof, 2000], a 60 ft. setback would provide up to 60 years of safety. This would limit the portion of the property available for construction of new facilities. Existing Buildings A, B, and C are wholly or partially within the 60 ft. setback area

and would have to be removed. Existing Building D is outside the setback zone and could remain in place, but retention of this building would constrain the design of new structures at this small site. If Building D were retained, the maximum floor space that could be provided, considering both Building D and new construction, would be about 63,500 sq. ft. If Building D were removed, about 90,500 sq. ft. of floor space in a four-story building with 77 parking spaces could be built on-site. This is insufficient to meet SWFSC needs for both floor space and parking. Additionally, SWFSC operations would have to be temporarily relocated from the existing site during construction, temporarily disrupting key research activities. Because this alternative would fall far short of providing the required floor space needed to accommodate SWFSC operations, it would not satisfy the need and objectives and is not considered feasible.

In regard to environmental effects, this alternative would generate similar levels of traffic during the operation as the proposed action. However, compared with the proposed action, less earth movement would be required; therefore, the amount of construction traffic would be reduced and the amount of air emissions from construction vehicles and equipment would also be reduced. Mature Torrey pine trees would have to be removed [SRI International, 2001]. NOAA has rejected this alternative because it is considered infeasible.

NEPA/CEQA Impact Analysis and Ability to Meet Purpose and Need/Project Objectives.

This alternative would have construction impacts (air, noise, traffic, vibration) that would be expected to be reduced as compared with the proposed project due primarily to the fact that construction excavation would be significantly reduced. Impacts to native biological resources would be reduced as well as compared with the proposed project, as there is no native habitat on-site, although several ornamental Torrey pine trees would be removed. However, this alternative would not meet the programmed need of 124,000 gross sq. ft. of new space, and on-site parking (77 spaces) would be reduced under this alternative as compared with the proposed project (202 spaces). Therefore, this alternative would not meet the purpose and need or objectives of the proposed project to provide (1) program space for future program growth; and (2) adequate on-site parking opportunities in order to minimize parking impacts off-site and on City streets to the extent that the proposed project would.

3.2.1.3 On- and Near-Site Redevelopment

An undeveloped hillside is located between the NOAA property and La Jolla Shores Drive. This roughly 0.45-acre parcel is owned by UC. Because it is undeveloped and adjacent to existing NOAA property, it could be added to NOAA property and would provide additional room for construction of new facilities. It would also increase the flexibility of building layouts, easing design constraints at the existing NOAA site. A 100,000 sq. ft. four-story structure with up to 95 parking spaces could be constructed on the combined properties. This design would include a 60 ft. setback from the bluff top to minimize geologic hazards [SRI International, 2001]. The addition of the 0.45-acre parcel would allow development of a larger structure with more parking than the on-site redevelopment alternative; however, the facility would still fall short of fulfilling SWFSC's future needs. Additionally, this alternative would require temporary relocation of SWFSC operations during the demolition and construction periods. For these reasons, NOAA considers this alternative infeasible.

This alternative would result in similar environmental effects as the proposed action, although some impacts would differ in intensity. Operational traffic generation would be similar as for the proposed action. Less earth movement would likely be needed, reducing the amount of air

pollutants emitted by haul trucks during construction of the new SWFSC. The UCSD 2004 LRDP designates the adjacent undeveloped parcel for Park use and a meander path is planned for this area. SWFSC construction would be incompatible with the existing land use designation and would preclude future construction of the meander path on that property. In contrast, the proposed action would be compatible with land use designations and policies contained in the UCSD 2004 LRDP. Overall, this alternative would result in less physical impacts to the environment than the proposed action, but greater land use impacts. Due to the infeasibility of this alternative and the expected level of environmental effect, NOAA has rejected this alternative.

NEPA/CEQA Impact Analysis and Ability to Meet Purpose and Need/Project Objectives.

This alternative would have construction impacts (air, noise, traffic, vibration) that would be expected to be similar as compared with the proposed project due primarily to the fact that construction excavation of the 0.45-acre sloped area would be required. Impacts to native biological resources would be reduced as compared with the proposed project, as there is no native habitat on the sloped area, although several ornamental Torrey pine trees would be removed. This alternative would have a land use inconsistency impact that the proposed project would not have, and an LRDP amendment would be required to modify the designation of the 0.45-acre slope from UCSD Park Land use to Academic use. This project alternative would also have the potential to impact views as the four-story building would be built closer to La Jolla Shores Drive in an area characterized by its scenic views of the ocean. In addition, this alternative would not meet the programmed need of 124,000 gross sq. ft. of new space, and on-site parking would be reduced (95 spaces) as compared with the proposed project (202 spaces). Therefore, this alternative would not meet the purpose and need or objectives of the proposed project to provide (1) program space for future program growth; and (2) adequate on-site parking opportunities in order to minimize parking impacts off-site and on City streets to the extent that the proposed project would.

3.2.1.4 Off-Site Development at SIO Deep Sea Drilling Site

Deep Sea Drilling Site is a 1.25-acre area located on the east side of La Jolla Shores Drive within the SIO campus, about 1,200 ft. south of the existing SWFSC buildings. This area contains a complex of office, laboratory, and storage space supporting the Deep Sea Drilling Project. The SIO Hillside Neighborhood Planning Study addresses redevelopment of this area and plans for construction of 50,000 sq. ft. of office and research space [UCSD, 1994]. About 30,000 sq. ft. of new space could be made available to NOAA at this area. Existing Building D at SWFSC has sufficient setback from the bluff and could be retained for continued use by NOAA, providing 23,500 sq. ft. of net space. Thus, the total amount of floor space would be about 53,500 sq. ft., which is much less than SWFSC requires. Additionally, the split of SWFSC activities between the two locations would be inefficient. Because this alternative would fall far short of meeting the needs and objectives set forth for replacement of the SWFSC, NOAA finds that this alternative is infeasible.

NEPA/CEQA Impact Analysis and Ability to Meet Purpose and Need/Project Objectives.

This alternative would reduce impacts associated with construction, however, it would require seawater to be extended to the site. If the extension is from the south near the aquarium, biological resource impacts associated with native habitat would occur. No visual quality or land use conflicts would be anticipated, and due to the developed nature of this alternative site,

archaeological resource concerns associated with the proposed project would be expected to be reduced. Also, the project would not meet the programmed need of 124,000 gross sq. ft. of new space, and parking would be limited to the 30 existing spaces at the existing site, as there is no room at the alternative site for SWFSC staff parking. Therefore, this alternative would not meet the purpose and need or objectives of the proposed project to provide (1) access to seawater infrastructure that minimizes environmental impacts; (2) program space for future program growth; and (3) adequate on-site parking opportunities in order to minimize parking impacts off-site and on City streets to the extent that the proposed project would.

3.2.1.5 Off-Site Development at UCSD Hillside Neighborhood Site

The Hillside Neighborhood Site is a 5.3-acre area located about 1,000 ft. southeast of the existing SWFSC buildings and is within the SIO campus. This area contains an existing saltwater tank serving SIO. Construction in this area is constrained by an inferred trace of the Redwood Fault and steep and potentially unstable slopes. The SIO Hillside Neighborhood Planning Study [UCSD, 1994] envisions a village concept containing several low-rise buildings on either side of the fault trace. Access to this area would be via a new drive connecting to Expedition Way. Total development potential of this area is estimated at 100,000 sq. ft. However, about half the building floor area would be required by SIO, leaving roughly 50,000 sq. ft. of floor space available for NOAA use. Even if NOAA were to continue to occupy the unthreatened buildings at the existing SWFSC site and build at Hillside Neighborhood Site, the total amount of space would not meet SWFSC needs. Additionally, the split of SWFSC activities between the two locations would be inefficient. Because this alternative would fall far short of meeting the needs and objectives set forth for replacement of SWFSC, NOAA finds that this alternative is infeasible.

NEPA/CEQA Impact Analysis and Ability to Meet Purpose and Need/Project Objectives.

The Hillside Neighborhood is largely undeveloped. Development of the SWFSC building at this alternative site would require significant grading, construction of an access roadway, and extension of utilities, including seawater. For these reasons, impacts associated with construction (air, traffic, noise) would be expected and would be similar to the proposed project. Because of the undeveloped nature of the site, biological and archaeological resource impacts as well as potential impacts associated with hydrology and water quality would be expected to be equivalent to the proposed project. Vibration could be reduced over the proposed project as existing buildings in the area are not as close in proximity. The site is designated as Academic in the UCSD 2004 LRDP and the site is not in a sensitive view shed, therefore, no impacts associated with land use or visual quality are anticipated. Building program goals for space and parking would not be met completely on-site, but use of Building D at the existing site in combination with new development at the alternative site would allow parking and space goals to be increased, but not to the level of the program goals associated with the proposed project. Therefore, this alternative would not meet the purpose and need or objectives of the proposed project to provide (1) access to seawater infrastructure that minimizes environmental impacts; (2) program space for future program growth; and (3) adequate on-site parking opportunities in order to minimize parking impacts off-site and on City streets to the extent that the proposed project would.

3.2.1.6 Leased Office and Research Space

This alternative would involve leasing existing or planned office and research space in the general vicinity of the UCSD and SIO campuses. Several research parks are present in the area: one example is the UCSD Science Research Park (SRP) complex at the University's East Campus. Leasing space within the Research Park requires a minimum commitment of about 70,000 gross sq. ft. and up to 130,000 gross sq. ft. could be potentially available. However, the availability of space to lease is very limited and new construction on a leased parcel within the SRP would likely be required. The location of the Park is over two miles east of SWFSC, east of Interstate 5, near Regents Road and Eastgate Mall Drive. It is separate from SIO and does not have direct access to seawater; however, a satellite seawater laboratory could remain in SWFSC Building D. The split of SWFSC activities between the two locations would be inefficient and the physical separation of SWFSC operations from the SIO campus would discourage scientific collaboration.

Because SWFSC would relocate to SRP where all the infrastructure (with the exception of seawater) is in place, this alternative would avoid most construction impacts, such as vegetation removal, air emissions, noise and vibrations, vehicle and equipment traffic, and solid waste generation. Remodeling of the leased space to meet the specialized needs of SWFSC would be necessary and would result in minor construction impacts, which would be reduced in intensity and duration compared with construction impacts expected to result from the proposed action and would likely be less than significant. If new construction at SRP is required, construction impacts would be similar in intensity to the proposed project. Other than emissions of nitrogen oxides (NO_x), the proposed action would not result in significant construction impacts. Traffic generation and demand for public utilities would be similar in intensity as for the proposed action, but the location of these activities would be shifted to the UCSD East Campus.

Although this alternative would result in less environmental effects than the proposed action, it would be detrimental to the ongoing SWFSC activities. Because this alternative would not meet the purpose and need, NOAA rejected this alternative.

NEPA/CEQA Impact Analysis and Ability to Meet Purpose and Need/Project Objectives.

This alternative would reduce construction-related impacts as compared with the proposed project because the infrastructure and access to the SRP are already in place, and grading would be minimal. No native vegetation or archeological resources are present due to the developed nature of the Park. Although the SRP could accommodate the building program proposed and adequate parking could be obtained, SRP is too far from the ocean for seawater to be extended. This lack of seawater would represent a shortcoming in meeting the program needs of the SWFSC. In addition, the distance between SIO and SWFSC staffs would hinder regular communications, joint teaching appointments, and graduate student activities that occur today by virtue of the close proximity between the existing facilities. It is expected that the increased distance would increase travel between the two sites and thus add traffic to local roadways above that of the proposed project. ~~Therefore, this alternative would not meet the purpose and need or objectives of the proposed project to provide (1) a new SWFSC facility in the UCSD/SIO neighborhood in proximity to other buildings that share programmatic relationships with SWFSC, thereby promoting the interaction and collaboration between SIO and SWFSC researchers and graduate students; and (2) access to seawater infrastructure.~~

3.2.1.7 Collocation of SWFSC with Other Existing NOAA Facilities

This alternative would involve relocation of SWFSC Headquarters to another existing NOAA facility within or outside California. Key criteria considered are the potential for high-quality collaboration in program areas critical to SWFSC management and staff, and the adequacy of existing facilities and potential for future development of needed facilities. These issues were evaluated in a technical study prepared by SRI International, reprinted as Appendix B in Volume II of this EIS/EIR.

Existing SWFSC Headquarters is strategically located at the UCSD/SIO campus to benefit from proximity to Pacific Ocean fisheries resources and SIO. Proximity to fisheries being studied advances both the quality of the research and the efficiency with which it is conducted. Proximity to SIO continues the 40-year history of scientific collaboration between SIO and SWFSC. These benefits are unlikely to be achieved to the same extent if SWFSC is relocated outside the San Diego metropolitan area. Conversely, collocation with another existing NMFS facility could result in cost savings through sharing of support costs.

Other coastal California sites with an NMFS presence and nearby marine research wet laboratories or aquaria were identified. The following existing California NMFS facilities were considered for potential relocation of SWFSC: NMFS laboratories in Santa Cruz and Pacific Grove, Channel Islands National Marine Sanctuary offices in Santa Barbara, and Glenn M. Anderson Federal Building in Long Beach. The following locations outside California were also considered: Western Regional Center in Seattle, Washington; Northwest Fisheries Science Center in the Puget Sound area, Washington; Newport Research Station, Newport, Oregon; and Pacific Regional Center, Honolulu, Hawaii. Each of these locations is over 50 miles from the existing SWFSC Headquarters and, therefore, would result in substantial staff relocation costs.

New construction would be required to accommodate the relocated SWFSC at another NOAA facility. Because the relocated SWFSC would be collocated with an existing NOAA research facility, it should be compatible with nearby land uses. The size and type of new construction would be similar to the construction required to implement the proposed action. Construction impacts, such as vegetation removal, air emissions, noise and vibrations, vehicle and equipment traffic, and solid waste generation, would have similar intensity as for the proposed action, but would occur in a different area. The significance of these impacts would depend on local conditions, but it is likely that these impacts could be mitigated to less than significant levels, as would be the case for the proposed action. Relocation of SWFSC outside the San Diego area would result in increases in population and employment at the new location and decreases in the San Diego area. As a consequence, demand for housing and public services would increase at the new location and decrease in the San Diego area. However, the number of relocated jobs would be modest, about 283, and would not be expected to significantly increase population or demand for housing or public services at any of the relocation areas considered. The decrease in population in the San Diego area would be insignificant compared with overall population of the area.

The availability of adequate space at each of the NOAA activities considered for relocation of the SWFSC locations is doubtful. Further, the movement of SWFSC away from La Jolla would be detrimental to collaborative research with SIO. Because this alternative would not promote SWFSC's long-term ability to fulfill its mission and would not satisfy the purpose and need, NOAA rejected this alternative.

NEPA/CEQA Impact Analysis and Ability to Meet Purpose and Need/Project Objectives.

The environmental impacts of collocating the SWFSC with other NOAA activities outside the San Diego area would be dependant upon the site that would be selected, and is too speculative to discuss herein. However, the selection of this alternative would end forty plus years of productive scientific collaboration between NOAA NMFS and SIO, in addition to eliminating the existing and the potential for future scientific and research opportunities. Also, jobs would be relocated out of the La Jolla area. This alternative would not meet the purpose and need or objectives of the proposed project to provide (1) a new SWFSC facility in the UCSD/SIO neighborhood in proximity to other buildings that share programmatic relationships with SWFSC, thereby promoting the interaction and collaboration between SIO and SWFSC researchers and graduate students; and (2) foster continued collaboration between SIO and the SWFSC, by providing expansion space for future program growth.

3.2.2 Finding

As discussed above, a reasonable range of potential alternatives to the proposed project was evaluated. These alternatives may, in some cases, reduce environmental impacts associated with the proposed project; however, each alternative fails to meet the purpose and need or one or more of the key project objectives.

The alternatives of constructing or leasing office and research space or collocating the SWFSC with other NOAA activities outside the San Diego area are feasible, but would result in substantial adverse effects on the ability of SWFSC to continue its scientific research into fisheries of the temperate and sub-tropical eastern Pacific Ocean. The benefits of scientific synergy with SIO would be largely forfeited due to the physical distance of the relocated SWFSC from the SIO campus. Because these drawbacks would severely compromise key project objectives and would not satisfy the purpose and need described in section 2 of this EIS/EIR, NOAA rejected these alternatives and did not carry them forward for detailed analysis. Furthermore, based on a comparison of the potential environmental effects of the alternatives with the effects of the proposed project as described in Section 3.2.1, none of the alternatives would completely avoid the significant unmitigated air quality impacts of the proposed project.

3.3 ALTERNATIVES CARRIED FORWARD FOR FURTHER ANALYSIS

3.3.1 No-Action Alternative

NEPA and CEQA Guidelines require analysis of the impacts of a “No-Action” alternative. Under the No-Action alternative, no construction or demolition of buildings would occur. SWFSC would continue to operate at its existing facilities for the foreseeable future. Buildings B and C are unusable due to the extreme risk from bluff retreat, and are currently being vacated by NOAA. Among the existing buildings at SWFSC, Buildings A and D are located sufficiently distant from the crest of the bluff to be safe from future bluff retreat hazards. Thus, NOAA would continue to occupy Buildings A and D in the long-term, but this would provide only a fraction of the office, research, and administrative space required by SWFSC. Building D contains saltwater aquaria, which is essential for ongoing research at SWFSC. The shortage of space would severely constrain SWFSC research activities, which is unacceptable to NOAA. Nonetheless, this alternative, along with NOAA’s preferred action, is analyzed in detail in Section 4 of this EIS/EIR as required by NEPA and CEQA.

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4 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

This chapter describes the existing physical, natural, and regulatory setting of the existing and proposed SWFSC sites and vicinities. A comprehensive range of issue areas are addressed and for each issue area, one or more impacts are analyzed and the level of significance of each impact is determined. This chapter lists specified impacts correlated to mitigation measures that would reduce or eliminate the level of impact.

4.1 LAND USE AND COASTAL ZONE MANAGEMENT

4.1.1 Setting

La Jolla Community Plan and UCSD 2004 LRDP. The existing SWFSC site and the preferred site for relocation of SWFSC are both located in La Jolla, a community within the City of San Diego. The community of La Jolla comprises approximately 5,718 acres of land within the north coastal region of the City of San Diego [City of San Diego, 2004], including a large stretch of Pacific Ocean shoreline. Land use within the community is

- 58% residential
- 19% roads
- 16% open space/parks
- 5% institutions/schools
- 2% commercial

The City of San Diego Progress Guide and General Plan contains a General Plan Map within the Land Use Element of the plan. The General Plan Map indicates Regional or Citywide land uses only. More detailed land use maps are included within the many community plans, which apply to various communities within the City of San Diego. The La Jolla Community Plan and Local Coastal Program Land Use Plan covers portions of La Jolla outside the UCSD campus. The City of San Diego approved the La Jolla Community Plan and Local Coastal Program Land Use Plan in 2001. CCC approved the Local Coastal Program in 2004. Because UC is a State entity, it is not subject to municipal land use and zoning requirements [UCSD, 2004a]. However, UC considers municipal planning principles to be an important guide for on-campus planning [UCSD, 2004a]. Municipal planning documents are also important because they address nearby off-campus land uses to the north of the SIO campus. The La Jolla Community Plan does not cover the UCSD campus or the existing and preferred sites for SWFSC. Off-campus land to the north of the existing and preferred sites is planned for parks, open space, and very low residential uses (zero to five dwelling units per acre).

The UCSD campus is owned by the State of California and covers 1,152 acres, divided into east, west, and SIO campuses. The existing and preferred sites are within the SIO campus, which is comprised of neighborhoods. The existing SWFSC site is in the SIO West neighborhood, and the preferred site is located in the SIO Hillside neighborhood. Development of the UCSD/SIO campus is generally guided by the University Community Plan [UCSD, 2000].

The existing and preferred SWFSC sites are planned for academic uses, described as classrooms, class and research laboratories, and ancillary support facilities. The strips of undeveloped and landscaped lands to the west, south, and east of the existing SWFSC buildings are designated as

restoration lands, described as areas disturbed by erosion, invasive vegetation, and past military use, but which could be restored to enhance their value as natural ecosystem. The northern boundary of the existing site is also the boundary of the SIO campus. To the north are single-family residential and open space uses [UCSD, 2004a]. The existing and preferred SWFSC sites are not located in the vicinity of an airport and are not subject to an airport land use plan.

The preferred site for SWFSC is wholly within the SIO campus. Restoration land is located to the west, across La Jolla Shores Drive, and Grove Reserve is located to the north and east, also across La Jolla Shores Drive. Grove Reserve is land affected by prior development. Future development is restricted and efforts are to be made to eliminate buildings and restore eucalyptus groves to enhance open space [UCSD, 2004a].

Constuction Staging Areas 3 and 4 are planned for Academic uses in the 2004 UCSD LRDP [UCSD, 2004a]. Also, UCSD has used alternative Constuction Staging Area 4 for construction staging activities during the last five years. Use of either of these areas for construction staging would be compatible with existing uses and would not alter existing land uses.

Coastal Management Zone. The Federal Coastal Zone Management Act authorizes coastal States to develop management plans for coastal areas. California's Federally approved Coastal Program is administered by CCC, which approves Local Coastal Programs (LCPs) developed by local entities. The UCSD 2004 LRDP is the governing LCP for the UCSD campus, including both the existing and preferred SWFSC sites. UCSD has not submitted the LRDP to CCC for approval. Instead, UCSD has submitted plans for individual projects within the coastal zone for CCC review [UCSD, 2004b]. The community of La Jolla also has an approved LCP, contained in the La Jolla Community Plan and Local Coastal Program Land Use Plan, but this plan covers only lands outside of the UCSD campus. [City of San Diego, 2004]. La Jolla is a well-known visitor location and has been designated a special community of Regional and Statewide significance by CCC.

The CCC submitted a formal scoping letter stating that the proposed action would require preparation of a Federal Consistency Determination and its submittal to the CCC for concurrence. NOAA plans to meet this requirement.

Federal Requirements. The Public Buildings Amendments of 1988, Public Law 100 678, requires Federal officials to follow nationally recognized building codes and permit normal inspections by local building officials during construction, among other actions. NOAA would conform to the requirements of Public Buildings Amendments of 1988, Public Law 100 678.

Standards of Significance. According to Appendix G of the CEQA Guidelines, the proposed action or an alternative action would have a significant impact on land use and coastal zone management if response to any of the following questions is yes:

- Would implementation of the proposed action or no-action alternative physically divide an established community?
- Would implementation of the proposed action or no-action alternative conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

- Would implementation of the proposed action or no-action alternative conflict with any applicable habitat conservation plan or natural community conservation plan?
- Would implementation of the proposed action or no-action alternative result in land use incompatibilities between SWFSC and adjacent campus and community land uses?
- Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative land use and planning impact considering past, present, and probable future projects?

4.1.2 Impact—Proposed Action

Impact 1—Compatibility of Proposed SWFSC Facility with Existing and Planned Uses.

The proposed action would construct a new SWFSC Headquarters facility at an undeveloped site planned for academic uses, which includes scientific research activities. The new SWFSC would be for scientific research use and would support the academic mission of UCSD/SIO. The new SWFSC would be compatible with existing and planned land uses in the area. Operation of the new SWFSC would not adversely affect the Keck Center for Ocean Atmospheric Research, adjacent to the site on the south, or hinder restoration of lands to the west. The Grove Reserve lands to the north and east also would not be adversely affected. The SWFSC design is being reviewed by the UCSD Design Review Board (DRB) and UCSD Physical Planning Department to ensure conformance to the UCSD 2004 LRDP. NOAA is actively participating in the meetings of these two committees and will follow their design recommendations to the maximum extent possible. The proposed SWFSC would be compatible with policies contained in the UCSD 2004 LRDP.

The proposed action would not displace existing development or physically divide an established community and would be compatible with natural resource and habitat protection policies of the UCSD 2004 LRDP. It would be compatible with nearby development, both on- and off-campus. Traffic impacts would be minor and all roads and intersections in the area would continue to operate at an acceptable level of service during the construction, demolition, and operation phases of the action. Coastal access points and facilities would be unaffected.

The existing and preferred SWFSC sites are not located in the vicinity of an airport and are not subject to an airport land use plan. Occupants of the new SWFSC or Buildings A and D at the existing site would not be subject to adverse effects or hazards from aviation activities.

Implementation of the proposed action would not affect airport operations or aviation. Land use impacts would be less than significant.

Impact 2—Compatibility of Proposed Demolition with Existing and Planned Uses. Demolition of Buildings B and C at the existing site would open additional land for possible natural restoration. UCSD would take possession of this land and may decide to pursue natural restoration or alternatively may redevelop all or portions of this land for academic uses. (Because Buildings A and D are farther from the bluff crest and not in immediate danger, it is expected that they will be retained and turned over to UCSD/SIO one year after completion of the new facility.) Existing restoration lands to the west, south, and east of the existing SWFSC would not be physically disturbed during the demolition period. Restoration activities would not be hindered or restricted by demolition of these two buildings. The residential uses to the north of the existing site would be subject to potentially significant noise during the six-month demolition period; that impact would be temporary. Measures to mitigate construction noise impacts are

listed in Section 4.9.3 of this EIS/EIR. In the long-term, no adverse effects to residential use would result. Demolition impacts to nearby land uses would be less than significant.

Impact 3—Exposure of Persons to Natural Hazards. The relocation of SWFSC staff and operations from the existing at-risk site to a new SWFSC would reduce the population exposed to geological hazard. The new SWFSC would be outside of earthquake fault zones and areas of coastal erosion hazard. Thus, the proposed action would further the health and safety goals of the UCSD 2004 LRDP. The existing at-risk buildings at the SWFSC would be demolished and removed, reducing the risk of failure during bluff erosion. The remaining two buildings would be rehabilitated to meet current life safety and building codes, reducing the risk to occupants. Implementation of the proposed action would not result in a significant increase in exposure of persons to hazards.

Impact 4—Effects on Coastal Access. Compared with the existing SWFSC facility, the new SWFSC facility would have greatly increased parking, reducing the amount of overflow parking on local streets. This would increase availability of parking spaces for public use by visitors to the coast. Demolition of Buildings B and C would remove a possible hazard to the portion of beach below these buildings. Thus, the proposed action would support the coastal access policies of the UCSD 2004 LRDP. The nearest locations with public access to the beach are the concrete ramp north of Scripps Pier and Summer Canyon Road, located 1,500 ft. south and 1,000 ft. north, respectively, of the preferred site. No direct effects to existing coastal access points would result. Impacts to coastal access would be less than significant.

Impact 5—Impacts to Coastal Resources. Overall, the proposed action would be consistent with applicable local land use and coastal zone management policies. NOAA would prepare a Federal Consistency Determination to document this finding. Impacts to coastal resources would be less than significant.

4.1.3 Mitigation—Proposed Action

- Lan-1 NOAA will prepare a Federal Consistency Determination and submit it to CCC for concurrence. (*Impact 5*)
- Lan-2 The UCSD DRB and UCSD Physical Planning Department will review the SWFSC design plans to evaluate the extent to which the proposed SWFSC would be integrated into the campus neighborhood and would be compatible with nearby uses. The review will evaluate edge effects, site connections to adjacent on- and off-campus land uses, pedestrian and bicycle circulation, landscaping, and alternative transportation facilities (for example, bike racks and shuttle stops). (*Impact 1*)
- Lan-3 Demolition of Buildings B and C at the existing SWFSC site would occur in a manner that avoids disturbance of adjacent restoration lands. Staging of demolition activities, parking of vehicles, and storage of supplies and equipment would occur at existing developed areas at the property and not on restoration lands. (*Impact 2*)

4.1.4 Impact—No-Action Alternative

Impact 1—Compatibility with Existing and Planned Uses. No changes in existing or planned land uses would result and physical division of an established community would not result. No changes in coastal access or adverse effects on natural areas would result. The no-action

alternative would be consistent with the UCSD 2004 LRDP. Impacts to land uses would be less than significant.

Impact 2—Exposure of Persons to Natural Hazards. NOAA is vacating Buildings B and C at the existing site, which will thereby eliminate the safety hazard to staff who work in those buildings. However, the threat of sudden slope and building failure remains and could threaten users of the adjacent beach at the foot of the bluff. That impact would be significant, even after application of the mitigation measure listed below.

4.1.5 Mitigation—No-Action Alternative

Lan-4 NOAA would continue to monitor the rate of bluff retreat for signs of accelerated erosion that could undermine Buildings B and C. If deemed necessary, NOAA would inform local authorities of potential hazards to beach users so that they could inform beach users of the risk and/or limit access to the adjacent beach. (*Impact 2*)

4.2 GEOLOGY, SOILS, AND GEOLOGIC HAZARDS

4.2.1 Setting

The existing location of SWFSC and the preferred site for relocation of SWFSC are in the Peninsular Ranges Physiographic province of Southern California [American Association of Petroleum Geologists, 1968]. The existing and proposed sites are located on a coastal bluff comprised of siltstones, mudstones, shales, and sandstones of Eocene to Pleistocene epochs (57.8 million to 10,000 years ago). These marine sedimentary layers have been uplifted by tectonic forces associated with the San Andreas Fault system, which forms the boundary between the Pacific and North American plates. A number of right lateral faults that cross the San Diego area have influenced the morphology of the coastal bluffs of the area. Tectonic forces have resulted in development of steeply dipping joints parallel to the shoreline, which promote erosion [Benumof, 2000].

The existing SWFSC site is a 2.48-acre parcel at the crest of a steep coastal bluff rising about 200 ft. MSL. A natural dike comprised of andesite is present in the tidal zone at the base of the bluff. Compared with the adjoining marine sediment layers, the andesite dike is relatively resistant to erosion. Elevation of the existing NOAA parcel ranges from 168 ft. MSL at the center of the western property boundary to 206 ft. MSL at the northeastern corner of the property [Frank L. Hope & Associates, 1963]. Wave action is eroding the base of the bluff, steepening the bluff face and leading to slope failure in the form of landslides, slumps, rockfalls, and toppling of blocks. Benumof [2000] estimated the average rate of bluff retreat at 0.72 to 1.05 ft. per year. In contrast, Summit Technology and Kleinfelder, Inc. [1998] estimated the rate of bluff retreat at 0.4 ft. per year prior to 1954, increasing to 0.5 ft. per year after 1954. This erosion is episodic and the rate varies greatly from year to year. Clay seams within the sedimentary layers are areas of weakness, and failure often occurs along these seams [Benumof, 2000]. Bluff retreat has also resulted from slumping of soil and rock located at the upper portions of the bluff. This slumping has been exacerbated by accumulation of perched groundwater in shallow soils at the top of the bluff. Water used to irrigate landscaping is thought to have contributed to water buildup at the bluff crest [Applied Consultants, 1989; Summit Technology and Kleinfelder, Inc., 1998]. To alleviate that situation, NOAA has installed and continues to operate a well to remove perched groundwater at the existing SWFSC site.

Soil at the existing site consists of Huerhuero loam, 15 to 30% slope, eroded (HrE2). HrE2 soils are deep with substantial clay content. Infiltration of rainfall is very slow and runoff is rapid in areas of HrE2 soils. These soils are subject to shrink-swell behavior [Natural Resources Conservation Service, 2004]. The existing site is mostly covered with structures and paving; the topography was leveled during construction. Slope gradients are modest except for the uppermost portion of the bluff face, which is within NOAA property, and embankments along La Jolla Shores Drive.

The preferred site is a 3.3-acre parcel located across La Jolla Shores Drive and about 500 ft. east of the Pacific Ocean shoreline. The parcel is undeveloped and vegetated with grasses, forbs, brush, and small trees. Elevations range from 213.9 ft. MSL at the southwest corner of the parcel to 304.2 ft. MSL at the southeast corner. The site slopes downward from east to west at a fairly uniform gradient of 25%. La Jolla Shores Drive curves around the western, northern, and eastern boundaries of the parcel. A vegetated earthen berm is located on the parcel adjacent to La Jolla Shores Drive and rises about 20 ft. above the adjacent roadbed. Soil consists of HrE2 in the western half of the parcel and Las Flores loamy fine sand, 9 to 15% slope, eroded (LeD2) on the eastern half. Figure 6 shows location of soil types for existing and preferred sites. LeD2 is a deep soil. Infiltration of rainfall is very slow and runoff is rapid. LeD2 is classified as potentially supporting farmland of Statewide importance, although urban development precludes agriculture in this area. Both LeD2 and HrE2 soils contain clay layers with Plasticity Indices ranging from 20 to 35 that render these soils subject to expansion, potentially resulting in damage to overlying structures or pavement. Proper site preparation and building design can mitigate this hazard [Natural Resources Conservation Service, 2004]. There is no evidence of slope instability or formation of substantial gullies at the preferred site.

The San Diego area is subject to severe seismic activity due to the presence of the San Andreas Fault system. A number of regionally significant right-lateral faults occur in the area. According to the California Division of Mines and Geology, the existing and preferred sites are not within an earthquake fault zone. The closest fault zone occurs about 1.3 miles to the south [State of California, 1991]. However, both sites are subject to strong ground shaking and secondary seismic hazards during a major earthquake. The existing site is subject to failure of the adjacent bluff during a major seismic event. The potential for liquefaction at either site is low due to the clay content of the soil and the relatively deep water table.

No extraction of minerals occurs at either of the sites and economically viable mineral deposits are not expected to occur. The potential for future extraction of minerals is very low due to the lack of known resources and the urban nature of the area.

Standards of Significance. Would implementation of the proposed action or no-action alternative expose people or structures to potential substantial adverse effects of a rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, liquefaction, or landslides?

Would implementation of the proposed action or no-action alternative result in substantial soil erosion or loss of topsoil?

Would implementation of the proposed action or no-action alternative occur on a geologic unit or soil that is unstable or that would become unstable and potentially result in a landslide, lateral spreading, subsidence, liquefaction, or collapse?



FIGURE 6 SOIL TYPES OF EXISTING AND PREFERRED SITES

Would construction of the new SWFSC be located on expansive soils?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative geology and soils impact considering past, present, and probable future projects?

4.2.2 Impact—Proposed Action

Impact 1—Vegetation Clearing and Soil Erosion. Construction of a new SWFSC facility at the preferred site would require clearing of vegetation over most of the site. The proposed SWFSC would have the lowest level, below existing grade, and this level would include seawater aquaria extending about 10 ft. below the floor elevation of the lowest level. Excavation of large amounts of soil would be required to construct the facility. About 3.3 acres of soil, including areas with steep slope gradients, would be exposed to wind and water erosion. Best management practices (BMPs) to control erosion would be implemented during the construction period to prevent concentrated flows of storm runoff across the site and retain soil on-site, keeping the potential for soil erosion at this site low. Those measures will be detailed in a Storm Water Pollution Prevention Plan (SWPPP) required to obtain a discharge permit for construction storm water.

The proposed new structure would be terraced into the hillside to minimize its visual bulk and would cover the majority of the parcel. Expansive soils at the portions of the site to be covered by buildings or pavement would be removed during excavation, eliminating this hazard. Excess soil excavated to construct the new SWFSC would be removed for off-site disposal. After construction of the new SWFSC is complete, the parcel would be mostly covered by structures and pavement, which would protect soil from erosion. Exposed areas would be revegetated to stabilize the soil and prevent erosion. The potential for long-term erosion at the parcel would be low.

Constuction Staging Area 2 and either Construction Staging Area 3 or alternative Constuction Staging Area 4 would be used to stage equipment and materials during the construction period. Area 2 is a portion of existing Parking Lot P014 and is paved. Staging activities at Area 2 would consist of temporarily placing construction trailers on the existing pavement and would not disturb the soil or result in accelerated soil erosion. Area 3 is a nearly level cleared field vegetated with grass and ground cover. Area 4 is a nearly level undeveloped field that was previously cleared of vegetation. Staging activities at Areas 3 or 4 would disturb the soil and could result in erosion. The SWPPP would include measures to prevent erosion and washing or blowing of soil from the staging area.

Demolition of existing Buildings B and C at SWFSC would expose about 0.5 acre of soil to wind and water erosion. Given the proximity of the areas to the bluff, erosion hazards would be a significant concern. To mitigate those hazards, exposed areas would be planted or seeded with species typical of coastal sage scrub vegetation to promote establishment of vegetative cover, which would minimize erosion. In addition, these areas would be graded so that storm water runoff flows to the south and east and not westward over the crest of the bluff, which would exacerbate the bluff retreat hazard. Demolition of Buildings B and C would result in less than significant erosion effects.

Impact 2—Seismic and Bluff Retreat Hazards. The new SWFSC would be subject to seismic hazards, including strong ground shaking during a major earthquake. The preferred site is not

within a fault zone and ground rupture is not expected. Additionally, the preferred site, although sloping, is not subject to slope instability or liquefaction that could undermine the structure. To mitigate seismic hazards, the proposed new SWFSC would be designed and built in conformance with seismic safety requirements of the 2007 California Building Code.

Demolition machinery (for example, excavators that crush and break concrete) would cause vibration; this equipment would be operated with care to minimize soil disturbance that might exacerbate bluff instability. Buildings A and D are located 21 ft. and 113 ft., respectively, from the edge of the bluff. Because existing Buildings A and D are farther from the bluff crest than Buildings B and C, they are not in imminent danger from bluff retreat. It is expected that Buildings A and D will be retained and occupied by UCSD/SIO staff.

The proposed action contains measures to mitigate geologic and seismic hazards to occupants and visitors of the new SWFSC and Buildings A and D at the existing SWFSC, if occupied by SIO. Existing Buildings B and C are considered at risk from bluff erosion, which represents a hazard to building occupants and beach users at the base of the bluff. The two at-risk structures would be demolished and removed, eliminating these geologic and seismic hazards to persons. Seismic and bluff retreat hazards would be mitigated to less than significant levels.

Impact 3—Access to Mineral Resources. Construction of the proposed SWFSC at the preferred site and removal of Buildings B and C at the existing site would not affect access to mineral resources. No economically valuable mineral resources are known to occur at either location [UCSD, 2004a]. Construction of SWFSC would produce a surplus of clean soil that would be removed from the construction site for reuse in the local area. Impacts to mineral resources would be less than significant.

4.2.3 Mitigation—Proposed Action

- Geo-1 NOAA would have a licensed engineer or engineering geologist prepare an SWPPP containing BMPs to minimize soil erosion during construction of the new SWFSC, staging of construction activities at off-site locations, and removal of Buildings B and C at the existing SWFSC. The BMPs would be implemented during the construction and demolition period. Those measures will include grading of the construction site to direct storm water to existing drainages and minimize the length and velocity of overland flow, placement of silt fences or equivalent sediment barriers at the boundaries of the construction/demolition areas, and covering of stockpiles of earth materials when not in use. (*Impact 1*)
- Geo-2 Denuded areas at the existing and preferred sites and staging areas would be promptly covered with straw mats or similar materials and seeded or planted in conformance with project landscape plans to promote native revegetation after construction/demolition activities are complete. (*Impact 1*)
- Geo-3 Design and construction of the new SWFSC will conform to seismic safety standards of the 2007 California Building Code. (*Impact 2*)

4.2.4 Impact—No-Action Alternative

Impact 1—Vegetation Clearing and Soil Erosion. Under this alternative, construction of a new SWFSC would not occur. No clearing of vegetation would be required and no areas of

denuded soil would be exposed to wind and water erosion. No increase in soil erosion would result.

Impact 2—Seismic and Bluff Retreat Hazards. The new SWFSC would meet stricter seismic codes than the existing buildings it would replace. Thus, the increase in seismic safety provided by the newly constructed SWFSC would not be achieved by this alternative.

NOAA would continue to occupy existing Buildings A and/or D at SWFSC. The existing network of inclinometers and related sensors would continue in operation to provide advance warning of potential dangerous conditions, allowing NOAA to take timely action to protect life and property in case of potential slope failure.

Impact 3—Access to Mineral Resources. No impacts to mineral resources would result.

4.2.5 Mitigation—No-Action Alternative

Geo-4 NOAA would maintain an up-to-date emergency response plan and would train managers and staff to implement the plan as necessary. NOAA would continue to operate the sensor network at the existing SWFSC to alert staff of dangerous geologic conditions and ensure the safety of staff and visitors. (*Impact 2*)

4.3 DRAINAGE AND WATER QUALITY

4.3.1 Setting

Executive Order (E.O.) 11988 requires that Federal actions be located outside the 100-year floodplain if practicable. The existing and preferred sites are both located in Zone X, outside the 100-year floodplain [Federal Emergency Management Agency, 1997].

The existing and preferred sites for SWFSC are located in the Scripps Hydrologic Area, which is part of the 170 square mile Panasquitos Hydrologic Unit. The Unit drains to the Pacific Ocean via intermittent short coastal drainages. The Pacific Ocean west of the Scripps Hydrologic Area is part of the San Diego Marine Life Refuge, which the State Water Resources Control Board (SWRCB) has designated an “Area of Special Biological Significance.” The California Ocean Plan requires that all non-storm water discharges to the ocean be eliminated from the SIO campus. The UCSD Storm Water Management Plan serves as a Water Quality Management Plan, fulfilling requirements of the California Ocean Plan and includes a number of BMPs to protect water quality [PBS&J, Inc., 2007].

Average precipitation at the SIO campus is about 10 inches per year. The existing and preferred sites are drained by a combination of overland flow and storm drains that direct storm runoff into a short, unnamed intermittent drainage that flows into the Pacific Ocean about 500 ft. southwest of the existing SWFSC. That drainage is contained in a steeply sided canyon that crosses the UCSD/SIO campus [PBS&J, Inc., 2007]. (Also see the Hydrology Analysis Report in Volume II, Technical Appendices.)

The existing SWFSC property contains several catch basins, which collect storm water from the property. The catch basins are connected to a network of storm drains that discharge into a concrete-lined spillway at the center of the western property boundary. The spillway empties into a steep gully that flows southwestward into the intermittent drainage south of the property [Frank L. Hope & Associates, 1963]. At the site, NOAA has installed a groundwater well to remove perched groundwater, which is thought to result from anthropogenic sources. The perched

groundwater is believed to contribute to instability of the coastal bluff [Summit Technology and Kleinfelder, Inc., 1998].

The preferred site is an undeveloped 3.3-acre parcel. La Jolla Shores Drive and the adjacent man-made berm form a drainage barrier that prevents storm runoff from the west, north, and east from entering the parcel. Internally generated storm runoff generally flows east to west and north to south across the property. A concrete-lined brow ditch at the southern boundary of the parcel prevents storm water from flowing over the steep embankment separating the parcel from developed portions of the campus to the south (see Figure 7). The brow ditch collects storm runoff and empties into a catch basin near the southwestern corner of the parcel. The existing and preferred sites are on elevated terrain and are not subject to flood hazards from coastal storm surge, tsunamis, seiches, or flash floods.

SWFSC receives domestic water service from the City of San Diego. An on-site well is present to prevent excess buildup of shallow groundwater, which could destabilize the site. The on-site well does not supply domestic water. Seawater aquaria are present at SWFSC and receive seawater from UCSD/SIO, which has an ocean intake located south of the SWFSC site. Seawater is circulated through the aquaria and discharged back to the ocean.

SWFSC receives sewage service from the City. No septic systems or leach fields are present at the existing site.

Standards of Significance. Would implementation of the proposed action or no-action alternative alter the existing drainage or hydrology of a site in a manner that would result in flooding, exceed the capacity of storm watch drainage systems, or result in substantial erosion or sedimentation?

Would implementation of the proposed action or no-action alternative violate any water quality standards or waste-discharge standards, or otherwise substantially degrade water quality?

Would implementation of the proposed action or no-action alternative expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?

Would implementation of the proposed action or no-action alternative substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (for example, the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

Would implementation of the proposed action or no-action alternative result in an exceedance of Regional Water Quality Control Board's (RWQCB) wastewater treatment requirements or the City's treatment capacity to serve the project's projected demand?

Would implementation of the proposed action or no-action alternative require or result in the construction of new storm water drainage facilities or expansion of existing facilities, which would cause adverse effects on the environment?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative hydrology and water quality impact considering past, present, and probable future projects?

4.3.2 Impact—Proposed Action

Impact 1—Permitting Discharge of Storm Water ~~during~~ from Construction and Demolition Sites. Construction of the new SWFSC would disturb about 3.3 acres of land, exposing soil to wind and water erosion. About 1.15 acres of land would be disturbed at remote Staging Areas 3 or 4. An additional 0.5 acre would be disturbed during demolition of Buildings B and C. The total area of soil disturbance would be about ~~4.95~~^{3.8} acres, which qualifies as a small construction site. EPA regulations (Title 40 CFR Section 122) require a National Pollutant Discharge Elimination System (NPDES) permit to discharge storm water from small construction sites. In California, the SWRCB and the RWQCB administer the NPDES Program. In 1999, the SWRCB issued Water Quality Order 99-08-DWQ, which contains the NPDES General Permit for Storm Water Discharges Associated with Construction Activity. The General Permit applies to the proposed action and requires NOAA to complete the following:

- Prepare and implement an SWPPP containing BMPs to minimize soil erosion during the construction and demolition periods
- Submit an NOI and application fee to the SWRCB prior to the start of construction
- Periodically inspect all BMPs and maintain devices in good working order
- Submit a Notice of Termination to the SWRCB at the completion of construction/demolition activities

This impact would be less than significant.

Impact 2—Increase in Impervious Surface and Runoff at Preferred Site. Construction of SWFSC will increase the amount of impervious surfaces at the preferred site from none to about 65% of the site. This will increase the rate of storm runoff during the 10-year 6-hour storm event from an existing 2.8 to 4.4 cubic feet per second (cfs). The new facility would include storm water features to promote natural infiltration of storm water and retention of storm water on-site, thereby reducing the rate at which runoff flows off-site to local storm drains. Existing storm drains would be able to accommodate this mitigated runoff flow [PBS&J, Inc., 2007]. Section 4.3.3 recommends BMPs to be implemented during the construction period to prevent erosion of soil.

The increase in impervious surfaces at the site would reduce the amount of uncovered land at the preferred site that contributes to groundwater recharge. This would be offset by the drainage design features that would retain storm water on-site and promote infiltration of storm water into the soil. Additionally, the removal of nearby Buildings B and C at the existing site would decrease the area of impervious surfaces and promote infiltration of storm water. The proposed SWFSC would receive water service from the City of San Diego and would not include groundwater wells. No adverse effects on groundwater levels or recharge of aquifers would result.

Changes in runoff rates and effects to the quality of storm water flowing off the site would be less than significant.

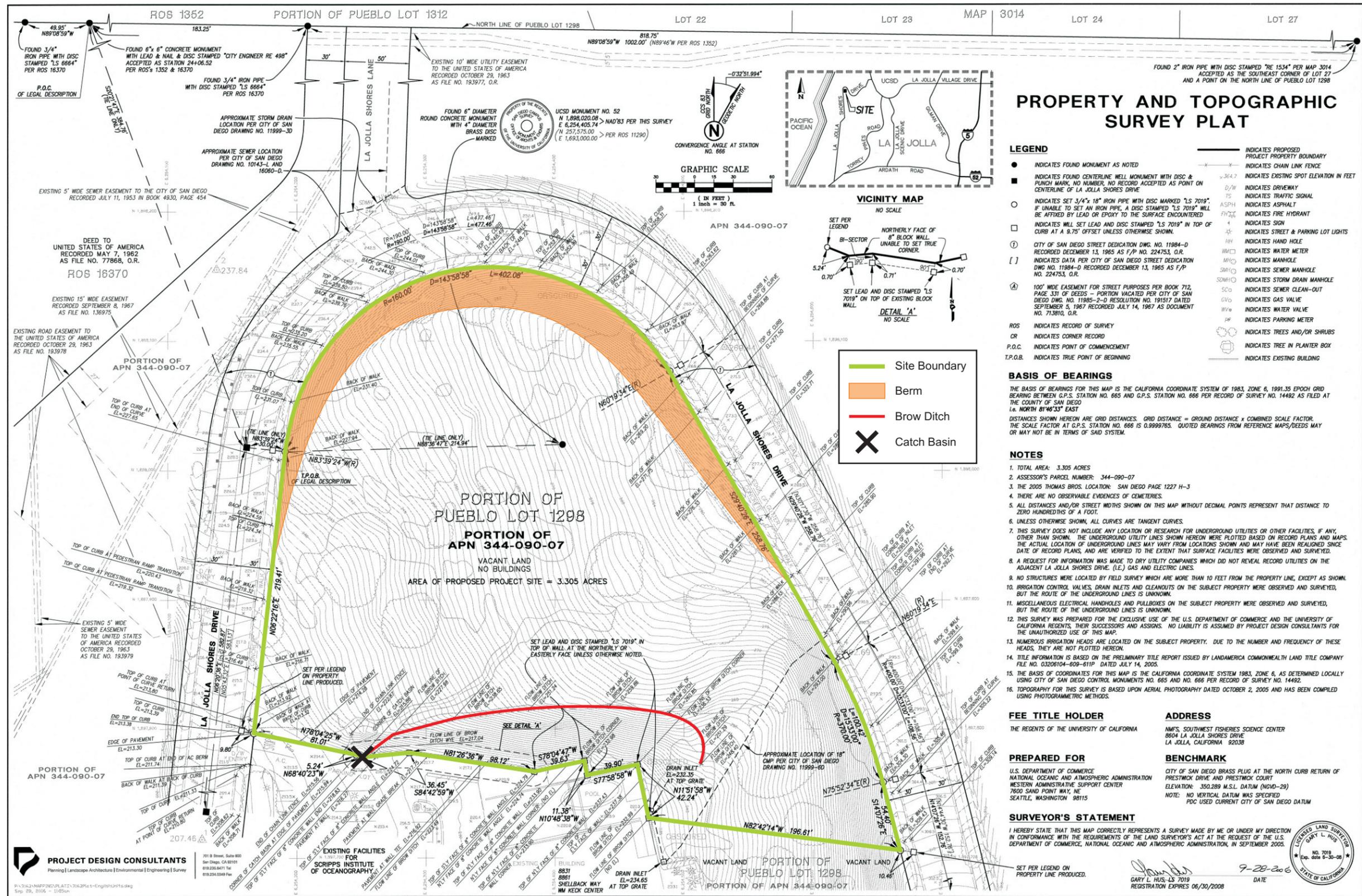


FIGURE 7 EXISTING DRAINAGE FEATURES OF THE PREFERRED SITE FOR REPLACEMENT OF SWFSC

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Impact 3—Decrease in Impervious Surfaces and Runoff at Existing SWFSC Site.

Demolition of Buildings B and C at the existing SWFSC site will reduce the percentage of the site covered by impervious surfaces, thereby promoting infiltration of storm water and reducing runoff rates. The rate of storm runoff during the 10-year 6-hour storm event will decrease from an existing 4.4 cfs to 4.0 cfs. This impact would be less than significant [PBS&J, Inc., 2007].

Impact 4—Flood Hazards. The preferred site is not within a 100-year floodplain and is not subject to flood hazards. The proposed action would be consistent with policies contained in E.O. 11988.

Impact 5—Water Quality Effects of Storm Runoff. Potential pollutants that would be used at the construction site include eroded soil, construction materials, fuels, lubricants, asphalt and concrete, cleaning and finishing chemicals, paints, vegetative matter, fertilizers, pesticides, and herbicides. During construction of SWFSC, NOAA would require construction contractors to adhere to the BMPs contained in the SWPPP, including requirements for proper handling and storage of potential pollutants to prevent contamination of storm water, periodic inspection of drainage and erosion control measures, maintenance and repair of measures as necessary to maintain proper functioning throughout the construction period, installation of supplemental measures if original measures prove inadequate, and maintenance of inspection records. Implementation of the SWPPP will minimize the potential for contamination of storm runoff or transport of pollutants to off-site water bodies. Construction effects on water quality would be less than significant.

~~Construction effects on water quality would not be less than significant.~~

After construction, the new SWFSC would receive sanitary sewer service from the City of San Diego. No septic systems would be installed on-site and no adverse effects on water quality would result. Water quality impacts during operation of the new SWFSC would be less than significant

Impact 6—Use and Discharge of Seawater. Seawater is currently used in the research aquaria at the existing SWFSC and would also be required for the research aquaria planned for the relocated SWFSC. SIO currently provides seawater to SWFSC through underground pipelines connecting between SIO and SWFSC. The average flow rate is 50 ~~gallons per minute~~ gpm. Seawater is stored in an existing 15,000-gallon settling and storage tank located at the corner of La Jolla Shores Drive and La Jolla Shores Lane. That tank would be retained for use by the new SWFSC and pipes would be extended under La Jolla Shores Drive to the relocated SWFSC. The volume of seawater contained in seawater aquaria at the new SWFSC would be the same as at the existing SWFSC. The new SWFSC facility would include an acoustic calibration and test tank (ACTT) filled with seawater, which would be a new tank and not a replacement tank as the existing SWFSC facility does not contain an ACTT. The ACTT would be used to test and calibrate research equipment and for the most part would not contain fish or marine mammals. Therefore, the seawater in the ACTT would circulate in a closed loop and would not require continuous replacement as is the case for the seawater aquaria. After initial filling of the ACTT, the amount of seawater used at the new SWFSC facility would be the same as at the existing facility and the existing average flow rate of 50 ~~gallons per minute~~ (gpm) would not change [Donahue, 2008a]. However, SIO may operate the seawater aquaria at the SWFSC when it assumes possession of Building D. In this case, the overall demand for seawater, considering use

at both the existing and new sites, would double to 100 gpm. This potential increase in the amount of seawater extracted from the Pacific Ocean would be less than significant.

After use at SWFSC, seawater would be either returned to SIO (as currently occurs) for discharge to the ocean or discharged to the sanitary sewage system. Seawater coming into contact with only native fish and not subject to chemical treatment would be returned to SIO for ocean discharge. Seawater coming into contact with non-native fish, marine mammals, or chemicals would be discharged to the City sanitary sewage system [Donahue, 2008b]. The amount and quality of used seawater returned by SWFSC would not change. However, if SIO continues operation of the existing seawater aquaria, and the amount of used seawater discharged to the ocean by SIO also would roughly double. Because the returned seawater would not be contaminated through exposure to non-native fish or contact with chemicals, this impact would be less than significant.

Impact 7—Water Quality Effects of Material Use at SWFSC. Regulated materials and chemicals used at SWFSC would be stored in secure areas that are protected from precipitation and used in accordance with manufacturers' recommendations. Solid and hazardous wastes would be properly labeled and removed for off-site disposal. Operation of the new SWFSC would not result in significant potential for contamination of groundwater. Impacts to drainage and water quality would be less than significant.

4.3.3 Mitigation—Proposed Action

Hyd-1 NOAA will prepare an SWPPP and submit required notices of intent and termination to the RWQCB. The following BMPs will be incorporated into the SWPPP and implemented during and after construction and demolition activities:

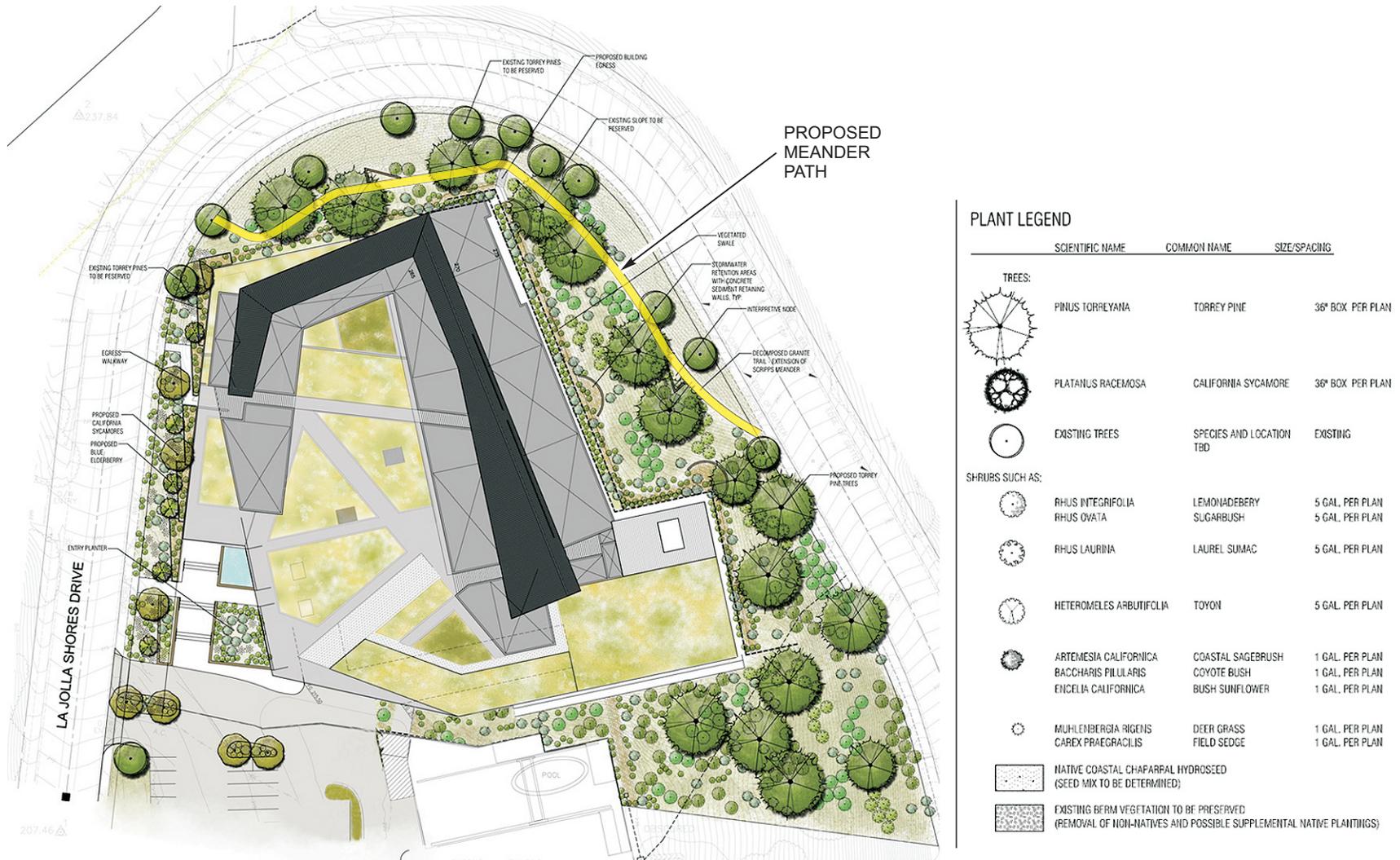
- The area of land disturbance will be kept to a minimum and existing vegetative cover will be retained as much as possible.
- Disturbed areas will be stabilized with temporary placement of woven mesh or netting until vegetation becomes established.
- Controls (silt fences, hay bales, and so on) will be placed at the perimeters of the construction and demolition areas.
- The sites will be sloped and graded to direct runoff away from steep hillsides or denuded areas.
- Disturbed areas will be replanted with native coastal sage scrub vegetation

(Impacts 1 and 2)

Hyd-2 The new SWFSC will incorporate the design features listed below to retain storm water on-site, thereby mitigating any increase in storm runoff rates (see Figure 8):

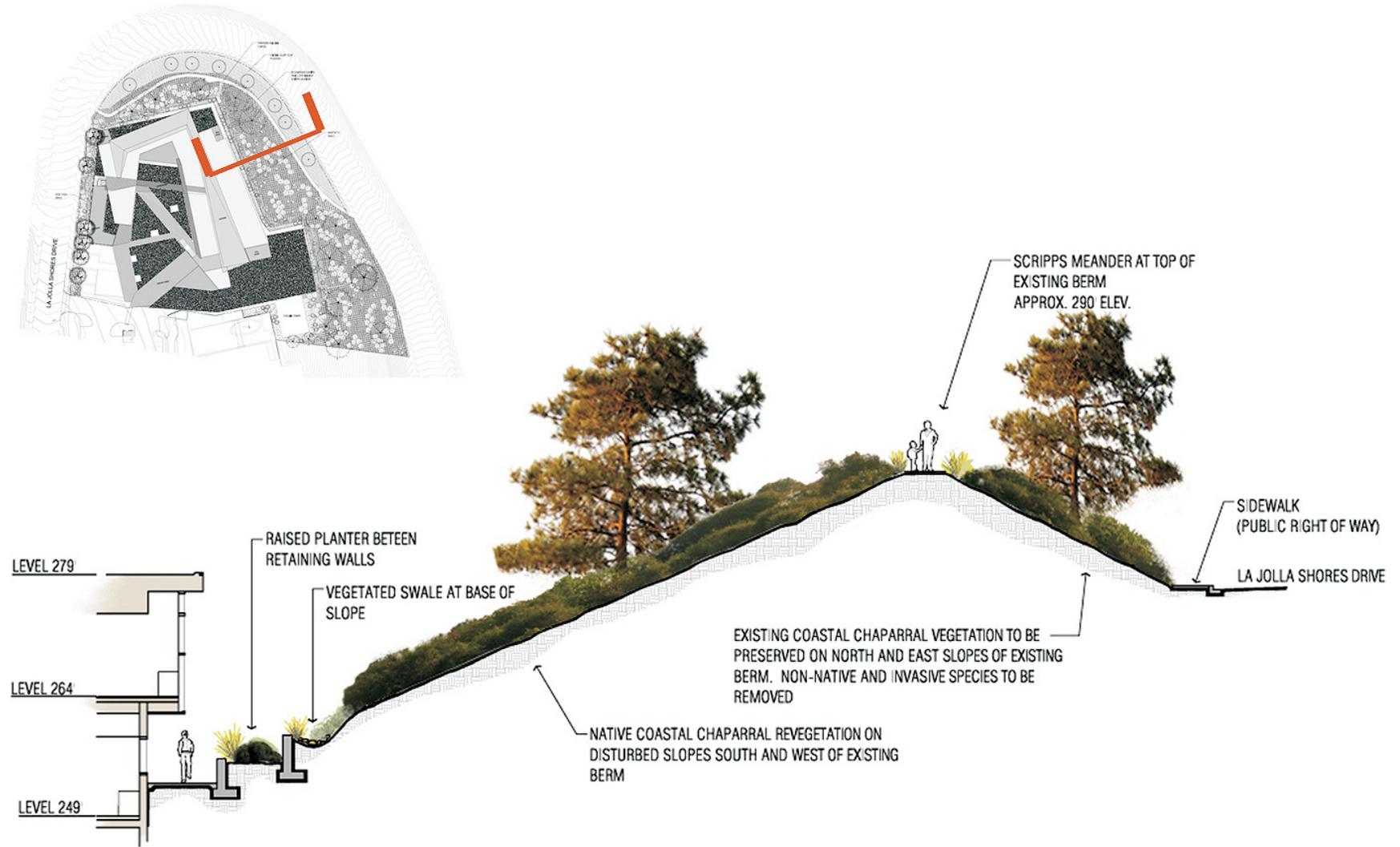
- Landscaping using native species will be planted adjacent to foundations to reduce the velocity of runoff flow and prevent erosion.
- Storm water from roofs will be directed to water retention areas.
- A new drainage trough will help to further reduce the projected increase in runoff.
- Permeable pavement will be used where appropriate for walkways and parking areas.

(Impacts 2 and 5)



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 8 LANDSCAPE AND DRAINAGE DESIGN OF THE PROPOSED SWFSC FACILITY (Page 1 of 2)



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 8 LANDSCAPE AND DRAINAGE DESIGN OF THE PROPOSED SWFSC FACILITY (Page 2 of 2)

- Hyd-3 All storm drain inlets and catch basins at the SWFSC site will be marked with prohibitive language and/or graphical icons to discourage illegal dumping per UCSD standards. (*Impact 5*)
- Hyd-4 Outdoor storage areas for materials that may affect water quality will be covered and protected by secondary containment. (*Impact 7*)
- Hyd-5 All trash container areas will be enclosed to prevent off-site transport of trash and drainage will be directed to the sanitary sewer system or the covered containers to prevent exposure of trash to precipitation. (*Impact 7*).

4.3.4 Impact—No-Action Alternative

No new construction and no demolition of existing buildings would occur. No changes in runoff rates, drainage patterns, or increase in soil erosion would result. Hydrologic and water quality effects would be less than significant.

4.3.5 Mitigation—No-Action Alternative

None required.

4.4 BIOLOGICAL RESOURCES (THREATENED AND ENDANGERED SPECIES) AND WETLANDS

4.4.1 Setting

Description of Existing and Preferred Sites. The Federal Endangered Species Act (FESA) of 1973 protects plants and animals in danger of extinction and Section 9 of the Act prohibits taking of these species. Take is the act of harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, or collecting Federally listed species. Harming a Federally listed species includes injuring or destroying individuals of the species or modifying the habitat of the listed species. Effects are considered significant if adverse impacts to species listed under the FESA, or to its habitats, are considered significant. Species located in California are also protected under the California Endangered Species Act, administered by CDFG. CDFG Code, Sections 3511, 4700, 5050, and 5515, protects certain species of birds, mammals, reptiles, amphibians, and fish. Plant and animal species not listed by U.S. Fish and Wildlife Service (USFWS) or CDFG are protected pursuant to Section 15380(b) of CEQA, if they are considered rare or endangered. The Migratory Bird Treaty Act (MBTA) protects listed bird species from direct harm.

A biological survey of the preferred site was undertaken in early 2008 and the results are reported in a Biological Technical Report (reprinted in Volume II, Technical Appendices). The biological study identified vegetation, species, land uses, and sensitive resources at or near the preferred SWFSC site. Sensitive resources are unique, limited in distribution, and are valued habitat areas or vegetation communities. The preferred site is a 3.3-acre, mostly undeveloped property containing disturbed and undisturbed Diegan coastal sage scrub vegetation, eucalyptus trees, and urbanized landscaping (see Table 1).

Table 1
Vegetation Communities at Preferred Site for SWFSC

Vegetation Community	Acres
Diegan Coastal Sage Scrub	1.63
Diegan Coastal Sage Scrub—Disturbed	0.08
Urbanized	0.49
Disturbed Habitat	0.73
Eucalyptus Woodlands	0.37

Diegan coastal sage scrub is a sensitive vegetation community comprised of low, soft-woody shrubs, which grow up to about three feet in height. Many plants in this community are facultative drought-deciduous. USFWS and CDFG consider both disturbed and intact Diegan coastal sage scrub as a sensitive vegetation community because this community typically supports sensitive plant and animal species. Diegan coastal sage scrub vegetation covers an estimated 123.6 acres on the UCSD campus and disturbed Diegan Coastal sage scrub covers an additional 9.5 acres of the campus. The San Diego Multi-Species Conservation Program is not applicable to the UCSD campus, but provides useful information on the biota of the region. This program classifies coastal sage scrub habitat as a Tier II (uncommon uplands) vegetation community. The California Natural Diversity Database gives this community its highest inventory priority of sensitive. A 1991 study found that 72% of Diegan coastal sage scrub vegetation has disappeared, mostly due to urban expansion [UCSD, 2004b]. This vegetation community is potential habitat for the coastal California gnatcatcher (*Polioptila californica californica*). The coastal California gnatcatcher is a small gray songbird listed as threatened under the FESA.

Disturbed habitat is that which has been significantly altered by construction or other land-clearing activities, and the species composition and site conditions are not characteristic of the disturbed phase of a plant association. Tall eucalyptus trees at or near the site are potential nesting habitat for raptors. California boxthorn (*Lycium californicum*) was observed at the preferred site and is listed by California Native Plant Society (CNPS) as a List 4, “watch list species.” List 4 species are neither endangered nor rare [PBS&J, Inc., 2008]. Urbanized vegetation typically consists of non-native landscape and/or garden plantings that have been planted in association with buildings, roads, or other development.

One sensitive plant species was observed at the preferred site and one was observed near, but outside the boundary of the preferred site. California boxthorn was observed at the preferred site and is listed by CNPS as a List 4, “watch list species.” San Diego sea dahlia (*Coreopsis maritima*), which is a CNPS List 2.2 species, was found to occur just south of the project site. List 2 species are defined as those species that are rare, threatened, or endangered in California, but are more common elsewhere. E.O. 13112, *Invasive Species*, requires Federal agencies, such as NOAA, to prevent the introduction of invasive species, monitor and control the spread of invasive species, and provide for restoration of native species.

During February and March 2008, surveys conforming to USFWS and CDFG protocols were conducted at the preferred site for the coastal California gnatcatcher. No gnatcatchers were detected within or adjacent to the preferred site. These results are consistent with the findings of

a previous gnatcatcher survey conducted in 2006, which also failed to find gnatcatchers at the preferred site. Gnatcatcher surveys are considered valid for a period of one year.

Wetlands are protected under Federal E.O. 11990 and under the California Wetlands Conservation Policy (CWCP) (August 23, 1993). Wetlands are not present at the existing SWFSC site or the preferred site.

Wildlife habitat connecting two or more large wildlife habitat areas is referred to as a wildlife movement corridor. Because most nearby lands are developed and only a small, discontinuous area of open space adjoins the preferred site, the preferred site is not considered to be a wildlife corridor.

The existing SWFSC site is developed with small areas of landscaping. The existing site does not provide suitable habitat for rare or endangered species. Construction Staging Area 2 is a paved parking lot and is devoid of vegetation. Construction Staging Area 3 is vegetated only with low ground cover. No trees or brush occur at this site. Potential habitat for protected species is not present. Alternative Constuction Staging Area 4 (which may be used in lieu of Area 3) was previously cleared of vegetation and has no habitat value for wildlife or protected species. Impacts to the natural environment at and near Areas 3 or 4 would be less than significant.

Standards of Significance. Would implementation of the proposed action or no-action alternative result in a substantial effect, either directly or through habitat modifications, on any plant or animal species identified as a candidate, sensitive, or special status plant?

Would implementation of the proposed action or no-action alternative have a substantial adverse effect on riparian habitat, or other sensitive natural community identified in local or regional plans, policies, or regulations by the CDFG or USFWS?

Would implementation of the proposed action or no-action alternative have a substantial adverse effect on Federally protected wetlands as defined in Section 404 of the Clean Water Act?

Would implementation of the proposed action or no-action alternative conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative biological resources impact considering past, present, or probable future projects?

4.4.2 Impact Analysis—Proposed Action

Impact 1—Vegetation Clearing and Habitat Removal. Construction of the new SWFSC at the preferred site would require vegetation clearing from most of the 3.3-acre site. Vegetation to be cleared would include roughly 1.71 acres of intact and disturbed Diegan coastal sage scrub, 0.37 acre of eucalyptus woodlands, and 0.49 acre of urbanized vegetation. Disturbed and intact coastal sage scrub is considered a sensitive vegetation community by USFWS and CDFG. Clearing of intact and disturbed Diegan coastal sage scrub at the preferred site would affect about 1.0 to 1.3% of the existing 133.1 acres of this vegetation community on the UCSD campus. This would add to the cumulative reduction in the amount of this vegetation community found in the San Diego area. Mitigation Measure Bio-1 would permanently preserve up to 3.42 acres of this vegetation at the UCSD Ecological Reserve in Skeleton Canyon, a short distance

east of the preferred site. The preserved vegetation would represent 2.6% of this vegetation community on the UCSD campus. The Reserve area is currently managed, and will continue to be managed in the long-term by UCSD to promote natural processes. Development activity is prohibited in the reserve. No state or federally listed endangered or threatened species are expected to be present at the preferred site and the site does not contain designated critical habitat for listed species. Thus, no impacts to listed species or critical habitat would result. With mitigation, removal of this sensitive vegetation community would be less than significant.

California boxthorn occurs at nine locations at the preferred site and some of these plants would be removed. Because this species is not considered rare or endangered, impacts to the California boxthorn would be less than significant [PBS&J, Inc., 2008]. San Diego sea dahlia occurs off the preferred site, but near the southern boundary of the site. These plants do not have to be removed for construction but could be accidentally crushed or destroyed by movement of construction vehicles or equipment. With mitigation, impacts to California boxthorn and San Diego sea dahlia would be less than significant.

After construction of the new SWFSC building is complete, NOAA plans to landscape the unbuilt portions of the preferred site with native plant species (see Figure 8 in Section 4.3.3). Native plants installed by NOAA would replace the existing vegetation at the preferred site, which includes both non-native and native species. The eucalyptus trees at the preferred site are not native to the U.S. However, NOAA would retain the eucalyptus trees outside the building footprint because they provide potential nesting habitat for raptors. Other than the eucalyptus trees, non-native vegetation would be removed and replaced with native species. The proposed action would be consistent with policies contained in E.O. 13112. Native plant species to be used for landscaping would include Torrey pine, California sycamore, lemonadeberry, sugarbush, laurel sumac, toyon, coastal sagebrush, coyote bush, bush sunflower, deer grass, and field sage. Exposed slopes would be hydroseeded with native coastal chaparral mixture.

Demolition of Buildings B and C at the existing SWFSC would result in removal of small amounts of landscaping. Removal of this urbanized vegetation would be a less than significant impact.

Impact 2—Impacts to Wildlife During Construction of the Proposed SWFSC Facility. No sensitive animal species were observed at the preferred site and there is a low potential of their occurring at the site. Therefore, direct impacts to sensitive species would be less than significant. The loss of Diegan coastal sage scrub habitat for the coastal California gnatcatcher would add to cumulative reduction in habitat in the region. This would be mitigated by the permanent preservation of Diegan coastal sage scrub habitat at the UCSD Ecological Preserve in nearby Skeleton Canyon. The preserved habitat would be at least twice the area of the removed habitat.

Raptors are protected under the MBTA and CDFG Code Section 3503.5. The MBTA protects birds but not their habitat. Construction of the new SWFSC would remove roughly 0.37 acre of eucalyptus woodland, which provides potential nesting sites for raptors. To mitigate that impact, existing eucalyptus trees at the preferred site would be retained to the maximum extent possible. In addition, a qualified biologist would conduct a pre-construction survey for raptor nests during the raptor nesting season (generally February 1 through August 31). The survey would cover trees suitable for raptor nesting at or within 500 ft. of the preferred site. With application of mitigation, impact would be less than significant.

Impact 3—Impacts to Wildlife during Demolition and Removal of the Existing SWFSC Buildings B and C. If demolition activities would occur during the raptor nesting season, February 1 through August 31, raptor surveys would also be performed within 500 ft. of Buildings B and C and demolition activities would be restricted to prevent disturbance of active raptor nests. With application of mitigation, impact would be less than significant.

Impact 4—Effects on Wetlands. The proposed action would not impact wetlands protected by E.O. 11990 and CWCP, since wetlands are not present at the existing or preferred sites. The proposed project would also not impact wildlife movement corridors since the preferred site is not a corridor [PBS&J, Inc., 2008].

4.4.3 Mitigation—Proposed Action

NOAA would implement the following mitigation measures to mitigate impacts to biological resources:

- Bio-1 NOAA would develop a habitat mitigation plan, preserving Diegan coastal sage scrub vegetation at Skeleton Canyon on the UCSD/SIO campus at a 2:1 ratio to removed habitat (location of Skeleton Canyon is shown in Figure 2(a) in Section 1). Between 1.37 and 1.71 acres of this vegetation would be removed, resulting in a need to preserve/restore between 2.74 and 3.42 acres. (*Impact 1*)
- Bio-2 To prevent damage or destruction of San Diego sea dahlia plants occurring south of the preferred site, those plants would be fenced and posted prior to the start of construction and construction workers would be directed to avoid harming those plants. Alternatively, these plants could be relocated to a protected nearby area prior to the start of construction. (*Impact 1*)
- Bio-3 Additional coastal California gnatcatcher surveys would be conducted at the preferred site prior to start of SWFSC construction. If the gnatcatcher is found to occupy the Diegan coastal sage scrub vegetation at the preferred site, removal of that vegetation would not occur during the February 1 through August 31 breeding season. (*Impact 2*)
- Bio-4 If coastal California gnatcatchers are not observed at the preferred site but are observed within 500 ft. of the preferred site, construction noise would be limited so that it does not exceed equivalent energy noise level 60 A-weighted decibels (dBA) per hour during the gnatcatcher breeding season. (*Impact 2*)
- Bio-5 A qualified biologist would conduct raptor nest surveys within 500 ft. of the preferred site prior to start of construction and during the raptor breeding season, February 1 through August 31. If active raptor nests are observed, construction activities within 500 ft. of the nests would be suspended until the biologist determines that the nests are no longer active. (*Impact 2*)
- Bio-6 If demolition activities at the existing SWFSC site are expected during the raptor breeding season, February 1 through August 31, a qualified biologist would conduct raptor nest surveys within 500 ft. of the existing site prior to start of demolition activities. If active raptor nests are observed, demolition activities within 500 ft. of the nests would be suspended until the biologist determines that the nests are no longer active. (*Impact 3*)

4.4.4 Impact—No-Action Alternative

Under the no-action alternative, proposed construction of the new SWFSC building or demolition of Buildings B and C would not occur. Therefore, there would be no impacts to biological resources.

4.4.5 Mitigation—No-Action Alternative

None required.

4.5 TRANSPORTATION

4.5.1 Setting

The existing SWFSC is accessed by a two-lane driveway connecting to La Jolla Shores Drive. The driveway approach is controlled by a stop sign and the La Jolla Shores Drive approaches are uncontrolled. There are about 30 parking stalls at the SWFSC site, a number of which are assigned to specific NOAA staff. This amount of parking is inadequate and staff and visitor vehicles regularly park on nearby streets, primarily La Jolla Shores Drive and La Jolla Shores Lane. The preferred site is undeveloped and lacks road access, although Shellback Way is adjacent to the southern boundary of the site and La Jolla Shores Drive is adjacent to the western, northern, and eastern boundaries of the site.

Roads of concern in proximity to the existing and preferred SWFSC sites include Expedition Way, Downwind Way, Shellback Way, North Torrey Pines Road, and La Jolla Shores Drive. Expedition Way, Downwind Way, and Shellback Way are paved two-lane unclassified local roadways. La Jolla Shores Drive is a paved two-lane modified collector. North Torrey Pines Road is a paved four-lane major street.

LLG, Inc. prepared a detailed traffic report for the proposed action and performed analysis of the Level of Service (LOS) of a number of intersections and road segments in the vicinity of the existing SWFSC site and preferred replacement site (see Technical Appendix E in Volume II). LLG, Inc. completed traffic counts at 10 road segments and 10 intersections while UCSD was in session during the week of April 7. Additional counts were conducted during August 2008 to account for summer traffic conditions. Because the summer time counts were about 10% higher than the academic year counts, the summer counts were used to analyze existing and projected operations of the road segments and intersections in the vicinity of the preferred site. The existing traffic volumes at each of these segments are below their daily capacity (see Table 2). For each road segment, existing daily LOS is D or better, which is considered acceptable.

**Table 2
Existing Street Segment Operations**

Street Segment	Daily Capacity (LOS E)	Existing ADT	LOS
N. Torrey Pines Road			
Expedition Way to Torrey Pines Road	40,000	27,360	C
La Jolla Shores Drive			
N. Torrey Pines Road to SWFSC Driveway	15,000	8,720	C
SWFSC Driveway to Biological Grade	15,000	8,640	C
Shellback Way to Downwind Way	15,000	8,440	C
Downwind Way to La Jolla Parkway	15,000	10,760	D
Expedition Way			
N. Torrey Pines Road to Downwind Way	8,000	3,500	B
Downwind Way			
East of La Jolla Shores Drive	8,000	2,960	B
West of Expedition Way	8,000	3,050	B
Shellback Way			
East of La Jolla Shores Drive	2,200	320	C
North of Downwind Way	2,200	440	C

LLG, Inc. also conducted traffic counts during the AM and PM peak hours at 10 intersections in the vicinity of the existing and proposed SWFSC sites. Table 3 gives the existing LOS for these intersections. All of these intersections operate at LOS D or better during the AM and PM peak hours, which is considered acceptable. Although the intersection of La Jolla Shores Drive and Downwind Way operates at LOS A during peak hours, motorists turning left from westbound Downwind Way onto La Jolla Shores Drive experience delays. This turning movement operates at LOS B with 15.7 seconds of delay during the AM peak hour and LOS E with 36.7 seconds of delay during the PM peak hour.

LLG, Inc. compared vehicular accident rates for the segment of La Jolla Shores Drive between Biological Grade and Downwind Way to national averages for two-lane urban roads. The accident rate of this segment is well below the national average for similarly sized roads in urban environment.

**Table 3
Existing Intersection Operations**

Intersection	Control Type	Peak Hour	Average Delay (seconds/vehicle)	LOS
1. N. Torrey Pines Road / La Jolla Shores Drive	Signal	AM	23.6	C
		PM	29.0	C
2. N. Torrey Pines Road / Expedition Way	Signal	AM	16.8	B
		PM	25.6	C
3. La Jolla Shores Drive / Existing SWFSC Driveway	Two-Way Stop	AM	10.3	B
		PM	13.9	B
4. La Jolla Shores Drive / Biological Grade	Two-Way Stop	AM	10.8	B
		PM	12.8	B
5. La Jolla Shores Drive / Shellback Way	Two-Way Stop	AM	10.3	B
		PM	10.3	B
6. Shellback Way / Project Driveway	Two-Way Stop	AM	7.4	A
		PM	7.3	A
7. La Jolla Shores Drive / Downwind Way	One-Way Stop	AM	2.6	A
		PM	5.9	A
8. Downwind Way / Shellback Way	One-Way Stop	AM	9.5	A
		PM	10.0	A
9. Downwind Way / Expedition Way	Two-Way Stop	AM	7.3	A
		PM	8.1	A
10. La Jolla Shores Drive / La Jolla Parkway	Two-Way Stop	AM	33.6	C
		PM	46.7	D

Standards of Significance. Would implementation of the proposed project cause a substantial increase in traffic?

Would implementation of the proposed project result in inadequate parking capacity?

Would implementation of the proposed project conflict with applicable policies, plans, or programs supporting alternative transportation (for example, bus turnouts, bicycle racks)?

Would implementation of the proposed project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

4.5.2 Impact—Proposed Action

Impact 1—Traffic Generation during Operation of the Proposed SWFSC Facility. The proposed SWFSC would be designed to accommodate a net increase of 17 staff, in addition to the current staffing of 283. An additional roughly 66 UCSD/SIO staff, expected to be comprised two-thirds of staff relocated from existing overcrowded SIO buildings and one-third of new hires, may occupy Buildings A and D after NOAA turns these buildings over to UC. This would result in a modest increase in trip generation. The new SWFSC would generate about

992 average daily trips (ADT), including 45 inbound/15 outbound trips during the AM peak hour and 15 inbound/125 outbound trips during the PM peak hour. As a worst-case analysis, the traffic study assumed that all of the trips generated at the SWFSC would be new trips (that is, no offset for relocation of staff from the existing to the new SWFSC facility) during analysis of traffic flow on Shellback Way and Downwind Way and intersections on these two streets. This is warranted because all of these trips would be new to the area east of La Jolla Shores Drive where these two streets are located.

However, for street segments and intersections other than Downwind Way and Shellback Way, it is appropriate to include an offset for trips generated by the existing SWFSC. For road segments and intersections other than Downwind Way and Shellback Way, the road and intersection operations analysis is based on net trips. Net trips generation is based on 84,000 sq. ft. of new space (124,000 sq. ft. at the new SWFSC minus the 40,000 sq. ft. to be demolished at Buildings B and C. Net trip generation would be 672 ADT), including 97 inbound/11 outbound trips during the AM peak hour and 9 inbound/85 outbound trips during the PM peak hour.

Vehicular access to the new SWFSC would be from Shellback Way, which would provide access to the local road network. The projected increase in vehicle trips would add to cumulative increases from build-out of the local area. Cumulative analysis is based on 13 identified development projects, which are planned at UCSD or in the vicinity, but have not yet begun to generate traffic. The traffic study also uses Year 2030 as a planning horizon to evaluate long-term traffic impacts, consistent with City of San Diego transportation planning policies. The 2030 traffic projections are consistent with estimates of future traffic volumes contained in the UCSD 2004 LRDP EIR. Table 4 shows the expected change in operations of street segments based on cumulative development conditions in the near-term and Year 2030 conditions in the long-term. LOS for these street segments will not change in the near-term and all road segments would continue to operate at LOS D or better.

In Year 2030, the segment of La Jolla Shores Drive between North Torrey Pines Road and La Jolla Parkway is projected to operate at LOS E or F with or without the addition of project traffic. All other road segments studied would operate at LOS D or better in 2030, with or without project traffic. The proposed action would cause the segment of La Jolla Shores Drive between Shellback Way and Downwind Way to go from LOS E to LOS F. However, because the proposed action would contribute less than 1% to the change in volume to capacity ratio (the standard of significance is 2% or greater), this would not be a significant impact.

Intersections with and without signals were analyzed under AM and PM peak hour conditions and using the 2000 Highway Capacity manual for vehicle delay input. All of the intersections analyzed (see Figure 9) will continue to operate at LOS D or better during the AM and PM peak hours (see Table 5). LOS would decrease during either the AM or PM peak hours at intersections 2 and 8. However, these impacts would be less than significant because these intersections would continue to operate at LOS D or better. Although the intersection of La Jolla Shores Drive and Downwind Way operates at LOS A during the AM and PM peak hours, motorists turning left from westbound Downwind Way onto La Jolla Shores Drive would experience delays. Under the cumulative plus project scenario, this turning movement would operate at LOS C with 16.2 seconds of delay during the AM peak hour and LOS E with 39.1 seconds of delay during the PM peak hour.

**Table 4
Existing, Projected Near-term and Long-term Level of Service for Street Segments**

Street Segment	Existing LOS	Near-term (Existing + Cumulative + Proposed Project) LOS	Year 2030	Long-term (Projected Year 2030 + Proposed Project) LOS
N. Torrey Pines Road				
Expedition Way to Torrey Pines Road	C	C	D	D
La Jolla Shores Drive				
N. Torrey Pines Road to Existing SWFSC Driveway	C	C	E	E
Existing SWFSC Driveway to Biological Grade	C	C		
Shellback Way to Downwind Way	C	C	E	F
Downwind Way to La Jolla Parkway	D	D	F	F
Expedition Way				
N. Torrey Pines Road to Downwind Way	B	C	B	B
Downwind Way				
East of La Jolla Shores Drive	B	B	B	B
West of Expedition Way	B	B	B	C
Shellback Way				
East of La Jolla Shores Drive	C	C	C	C
North of Downwind Way	C	C	C	C

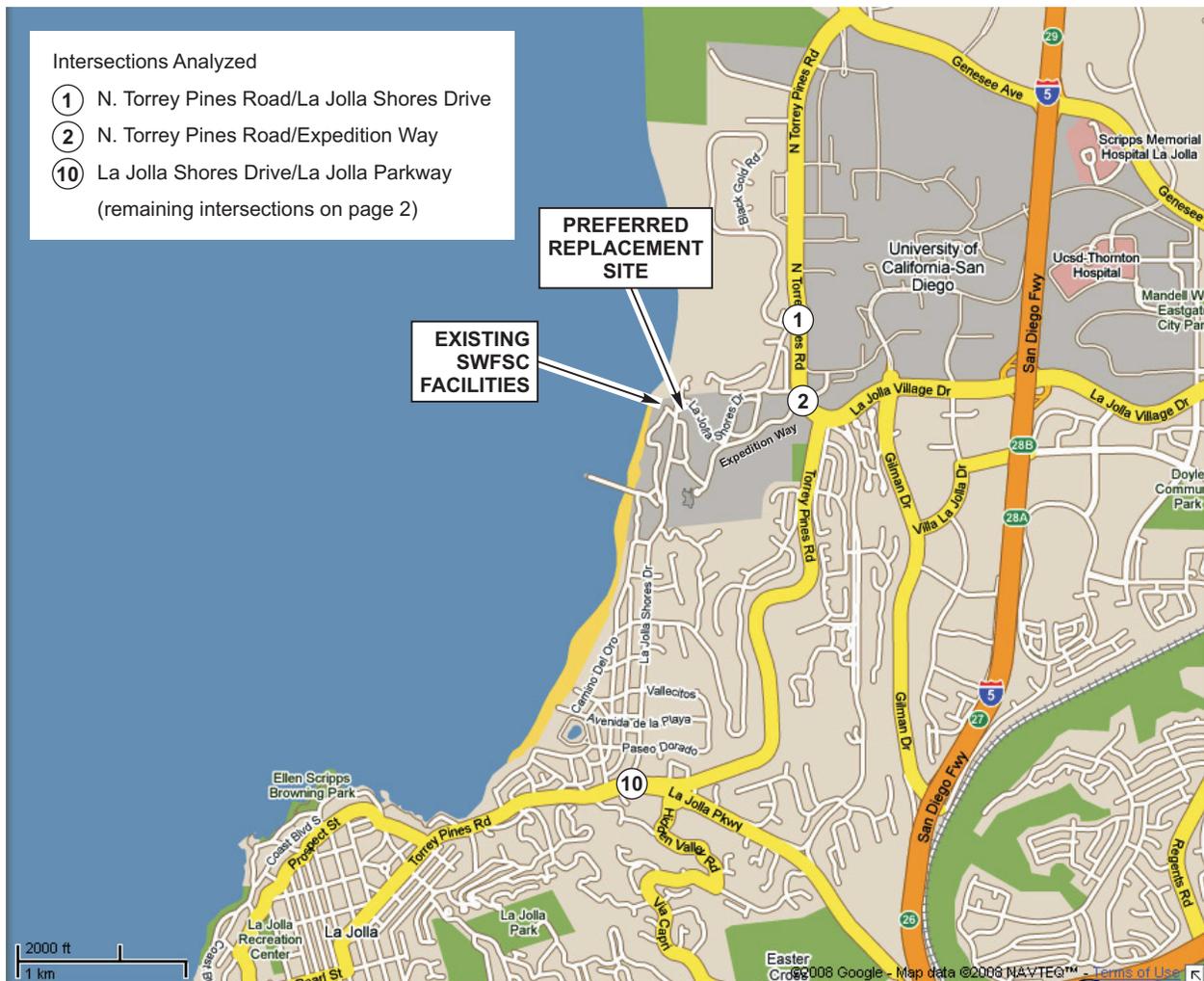


FIGURE 9 INTERSECTIONS ANALYZED IN THE VICINITY OF THE EXISTING AND PROPOSED SWFSC SITES (Page 1 of 2)



FIGURE 9 INTERSECTIONS ANALYZED IN THE VICINITY OF THE EXISTING AND PROPOSED SWFSC SITES (Page 2 of 2)

**Table 5
Existing and Projected Near-term Level of Service for Intersections**

Intersection	Control Type	Peak Hour	Existing LOS	Existing + Cumulative Projects + Proposed Project LOS
1. N. Torrey Pines Road / La Jolla Shores Drive	Signal	AM	C	C
		PM	C	C
2. N. Torrey Pines Road / Expedition Way	Signal	AM	B	C
		PM	C	C
3. La Jolla Shores Drive / SWFSC Driveway	One-Way Stop	AM	B	B
		PM	B	B
4. La Jolla Shores Drive / Biological Grade Driveway	One-Way Stop	AM	B	B
		PM	B	B
5. La Jolla Shores Drive / Shellback Way	One-Way Stop	AM	B	B
		PM	B	B
6. Shellback Way / Project Driveway	One-Way Stop	AM	A	A
		PM	A	A
7. La Jolla Shores Drive / Downwind Way	One-Way Stop	AM	A	A
		PM	A	A
8. Downwind Way / Shellback Way	One-Way Stop	AM	A	A
		PM	A	B
9. Downwind Way / Expedition Way	All-Way Stop	AM	A	A
		PM	A	A
10. La Jolla Shores Drive / La Jolla Parkway	Signal	AM	C	C
		PM	D	D

UCSD plans to remove the current prohibition on left turns from westbound Shellback Way onto La Jolla Shores Drive, which is a holdover from a previous construction project and is no longer necessary. This would allow traffic leaving the new SWFSC to access southbound La Jolla Shores Drive without passing through the Downwind Way/La Jolla Shores Drive intersection. This would prevent adverse effects on the level of delay experienced by motorists turning left from Downwind Way onto southbound La Jolla Shores Drive.

An existing center two-way left turn lane is present on La Jolla Shores Drive at its intersection with Shellback Way. This lane would be used by motorists traveling north on La Jolla Shores Drive and turning left into Biological Grade and by motorists traveling south on La Jolla Shores Drive and turning left into Shellback Way, creating the potential for conflicts and congestion. UCSD would monitor that situation and if necessary would consider prohibiting the southbound left turn onto Shellback Way. Operational traffic impacts would be less than significant.

Impact 2—Parking Availability. UCSD has established a standard of 0.41 parking space per capita for the campus [UCSD, 2004b]. The SWFSC would have a maximum of 300 staff working on-site, which would result in a need for 123 parking spaces at the proposed SWFSC to meet UCSD parking standards. The plans for the new SWFSC at the preferred site include 202 underground parking stalls, which would exceed the UCSD parking standard by 64%. On-site parking at the new SWFSC facility would be adequate to serve NOAA staff, authorized visitors, and six Government-owned vehicles that would be parked on-site. The SWFSC at the existing site includes 30 stalls available to NOAA staff and the public. The proposed action would result in a net increase in parking spaces for the SWFSC of 172 stalls, which would decrease the overflow of parking demand onto streets in the local vicinity. The recommendation to paint the La Jolla Shores Drive curb red for 100 ft. south of Shellback Way would eliminate four on-street parking spots. This would slightly reduce the net increase in parking stalls from 172 to 168.

Only NOAA staff and authorized visitors would be allowed to park in the underground garage at the new SWFSC facility. The general public and UCSD staff and students (unless conducting authorized business with NOAA) would not be allowed to park in the SWFSC garage. UCSD Parking Lot 014 abuts the southern boundary of the preferred site and provides permit parking for staff, students, and visitors to the Keck Center for Ocean Atmospheric Research. Use of lot P014 requires the purchase of a parking permit from UCSD and NOAA staff would not be expected to use lot P014. Effects on parking supply and availability would be beneficial and less than significant.

Construction trailers would temporarily occupy about 4,400 sq. ft. of space at the existing Parking Lot P014, located south of the construction site. This will result in use of up to 19 parking stalls at Parking Lot P014, which would be temporarily unavailable for use by UCSD staff and students. After construction is complete, these stalls would become available for use. Based on the small number of stalls affected and the temporary nature of the effect, this effect would be less than significant.

Impact 3—Construction Period Impacts to Traffic. Construction of the new SWFSC at the preferred site will generate traffic over a roughly 2.5 year time period. There are no current large construction projects in progress at SIO. Trucks and workers will be generating on-site and off-site traffic as workers commute to and from the preferred site staging areas and as haul trips are

generated. Construction workers would be ferried in vans or small shuttle buses between the staging area and the construction site. The shuttle would make 10 to 20 round trips per day between the staging area and the construction site. Construction of the new SWFSC facility would occur over about 2.5 years and the largest number of trips would be generated during site preparation. During site preparation, haul trucks would remove about 127,000 cubic yards of soil from the preferred site. If tandem trucks are used to haul dirt, about 12,700 round trips by haul trucks would be required. Site preparation is expected to last about five months.

Construction traffic would range from a high of 928 ADT during site preparation to a low of 296 ADT during concrete pouring (Table 6). These estimates assume that each tandem haul truck is the equivalent of four automobiles. Because traffic generated during construction would be less than operational traffic generation, construction of the new SWFSC would not significantly affect operation of local road segments or intersections.

**Table 6
Construction Traffic**

Construction Phase	Duration	ADT
Phase 1: Grading	5 months	928
Phase 2: Concrete Pours	2 months	296
Phase 3: Building Structures	18 months	360

Construction plans detailing work zones and route closures/transitions will be prepared prior to start of construction to reduce any impacts to commuters. Construction plans will include designation of access routes to and from the preferred site to reduce the potential disruption to the existing Keck Center buildings.

Traffic would be generated at and near Construction Staging Area 3 or alternative Construction Staging Area 4 from the movement of trucks and vehicles and loading and unloading of vehicles. Vehicles traveling from Area 3 to the construction site would use southbound Expedition Way and westbound Downwind Way to access La Jolla Shores Drive south of the proposed construction site. The vehicles would travel a short distance north of La Jolla Shores Drive and turn right onto Shellback Way and the construction site. This route would eliminate the need to turn left onto Shellback Way. Alternatively, staging may occur at Area 4 at the Torrey Pines Gliderport located west of North Torrey Pines Road and north of Torrey Pines Scenic Drive, a distance of about 2.2 miles by major road from the construction site. Impacts on traffic would be less than significant.

Impact 4—Traffic Impacts Resulting from Demolition of Buildings B and C. Demolition of Buildings B and C at the existing site would generate less daily traffic than construction; therefore, the demolition traffic would result in less than significant impacts on local streets and intersections. Staging of demolition equipment and material storage would occur within the boundaries of the existing NOAA property. No adjacent properties would be occupied during the demolition period and no closures or restrictions of local roads would be required.

Impact 5—Impacts to Air Traffic. The existing and preferred sites are not located in proximity to an airport and are not subject to an airport land use plan. No changes in air traffic volumes or flight paths would result. Impacts to air traffic would be less than significant.

4.5.3 Mitigation—Proposed Action

- Tra-1 To improve the flow of traffic and reduce safety hazards to local motorists, bicyclists, and pedestrians, NOAA and UCSD would cooperate in implementing the following mitigation measures:
- Add an additional 50 to 100 ft. red curb to northbound La Jolla Shores Drive south of Shellback Way.
 - Widen the Shellback Way approach to the intersection with La Jolla Shores Drive to accommodate 20 ft. wide east- and west-bound traffic lanes and a 12 ft. wide median.
 - Remove existing sign prohibiting left turns from eastbound Shellback Way onto southbound La Jolla Shores Drive.
 - Install bollard seats on Shellback Way near right angle turn south of the preferred site. This will allow bollards to be placed diverting traffic when the portion of Shellback Way in front of the Keck Center is used to stage large equipment, which occurs infrequently.

(Impact 1)

- Tra-2 NOAA would prepare a traffic control plan covering the construction/demolition periods for review by UCSD. The traffic control plan would address lane and/or road closures, emergency access and egress, efficient traffic circulation, and use of flaggers to control traffic and avoid conflicts. The plan would include recommendations, such as signage, detours, and temporary traffic controls. The plan would prohibit construction vehicles from using Downwind Way or the north–south oriented section of Shellback Way (which passes in front of the Keck Center, Nierenberg Hall, Speiss Hall, and associated service yards). *(Impacts 3 and 4)*

4.5.4 Impact—No-Action Alternative

Impact 1—Traffic Generation. Under the no-action alternative, the proposed construction of the new SWFSC building would not occur. There would be no changes to the existing traffic generation, LOS, or parking demand. Therefore, no transportation-related impacts would occur.

4.5.5 Mitigation—No-Action Alternative

Under the no-action alternative, there would be no impacts to transportation. Therefore, no mitigation is warranted.

4.6 RECREATIONAL RESOURCES

4.6.1 Setting

The mission of SWFSC is to conduct high quality fisheries research. The existing SWFSC facilities have a courtyard area open to the public; however, recreational opportunities are not present at the existing site. The western boundary of the existing NOAA property generally coincides with the crest of the coastal bluff face. UCSD owns most of the bluff face. The beach at the base of the bluff is open for public recreational use; however, due to the steep slope of the bluff face, there is no access to the beach from the NOAA property. Beach access is available at several points from the UCSD/SIO campus south of the NOAA property. The closest beach access point to the south is north of Scripps Pier, about 1,500 ft. from the preferred site. The

closest beach access point to the north is at Summer Canyon Road, about 1,000 ft. north [City of San Diego, 2004]. From the UCSD/SIO campus access points, it is a modest walk to the portion of the beach located between the NOAA property and the Pacific Ocean. The beach is open to public use and provides recreational opportunities typical of an ocean beach, such as swimming, surfing, and sunbathing.

The preferred site is an undeveloped 3.3-acre parcel planned for academic uses. No recreation improvements are present at the preferred site. An unimproved path crosses the site, connecting between La Jolla Shores Drive and the Keck Center for Ocean Atmospheric Research parking lot, and is used informally for walking and possibly bicycling.

In order to meet the broad range of recreational and leisure needs of the UCSD students, faculty, and staff, opportunities for recreation can be found throughout the UCSD campus, including indoor and outdoor facilities. The UCSD LRDP outlines goals, policies, and strategies to address the future preservation, use, and development of land within the University community. The recreation goals outlined in the Plan are as follows:

- Provide a system of population-based parks to meet the community's needs for outdoor recreation
- Develop a linkage system, referred to as a ladder by UCSD, connecting recreational and natural open space areas throughout the community

The UCSD LRDP plans for a 70% increase to 578,000 sq. ft. in the amount of recreational facilities on campus to accommodate future growth. UCSD has an integrated system of open spaces, known collectively as the UCSD Park. Portions of the UCSD Park are located north and east of the preferred site, across La Jolla Shores Drive. These park areas are generally used for low intensity recreational purposes, such as walking, bicycling, and wildlife observation [UCSD, 2004a].

The La Jolla Community Plan outlines goals, policies, and strategies that address the future preservation, use, and development of land within La Jolla, including development of land for public services, including parks. The recreation goal outlined in the Plan is to encourage the maximum use of all existing community facilities; in particular, the public parks, beaches, recreational areas, bikeways, museums, and public schools, in order to enhance the recreational opportunities for all visitors and residents in La Jolla.

Public parking is available along La Jolla Shores Drive, and coastal access points, including stairs descending to the beach, are available at the Scripps campus [City of San Diego, 2004].

Standards of Significance. Would the proposed action or no-action alternative increase the use of existing recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Would implementation of the proposed project or no-action alternative involve the construction of recreational facilities that might have an adverse physical effect on the environment?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulatively physical impact to recreational facilities considering past, present, and probable future projects?

4.6.2 Impact—Proposed Action

Impact 1—Increased Demand for Recreational Facilities. The number of staff employed at the new SWFSC would initially be the same as at the current SWFSC. The building would be designed to accommodate a modest growth of up to 17 new employees, a 6% increase, in the long-term. This level of increase would have negligible effect on demand for recreational resources. The new SWFSC would include indoor break areas and outdoor plazas where recreational activities may occur, but would not include facilities dedicated to recreational activities. Changes in demand for recreational facilities would be less than significant.

Impact 2—Impacts to Meander Path. A segment of the UCSD meander path crosses the preferred site. This path would be removed during construction of the proposed SWFSC facility. No other recreational facilities would be physically disrupted by construction. Prior to operation of the new SWFSC, the existing path will be replaced by an improved meandering path that is to be constructed with decomposed granite on the preferred site to the north and east of the new facility. The removal of the path during the construction period would not significantly decrease recreational opportunities. In the long-term, the new path would fully replace the existing meander path and impacts would be less than significant.

Impact 3—Impacts to Torrey Pines Gliderport. Recreational activities at the Torrey Pines Gliderport, which contains alternative Construction Staging Area 4, consist of operation of gliders, hang gliders, paragliders, and radio-controlled model airplanes. The proposed staging activities would occupy a small portion of the Gliderport property. The gliderport operates only about six weeks per year and construction staging would not result in closure or limitations on use of the landing strip at the gliderport. Based on UCSD's previous experience conducting construction staging at this location, the construction staging activities would not interfere with gliderport activities.

Impact 4—Impacts of Demolition Activities to Recreation. Demolition activities to remove Buildings B and C at the existing site would occur within the boundaries of the existing NOAA-owned property. All staging and storage of materials would occur at the NOAA property. Although beach access from the UCSD/SIO campus would not be blocked, it is likely that use of the portion of the beach closest to the NOAA property would be restricted during portions of the demolition period for safety reasons. The demolition period would have an estimated duration of six months, and the loudest activities would occur intermittently. Demolition noise would be a temporary annoyance to beach users but would not prevent use and enjoyment of the beach during the demolition period. Demolition period impacts to recreational resources would be less than significant.

4.6.3 Mitigation—Proposed Action

Rec -1 The existing meander path at the preferred site would be replaced with a path of similar quality and the public would be allowed to use the replacement path.

4.6.4 Impact—No-Action Alternative

Impact 1—Physical Effects to Public Beach. No construction or demolition activities would occur and there would be no change in demand for recreational resources or direct effects on recreational facilities. Indirectly, Buildings B and C would remain precariously at the top of the coastal bluff. Large-scale bluff failure could occur during an earthquake or storm and undermine those buildings, causing portions of the buildings to slide down the steep slope and onto the

beach. This hazard may require restrictions on use of the adjacent beach. The physical presence of building debris on the beach could limit recreational use until the debris is removed by humans or wave action. Although it would affect only a small portion of the beach for a temporary period, this impact could be significant.

4.6.5 Mitigation—No-Action Alternative

Rec-1 NOAA would continue to monitor the rate of bluff retreat and signs of accelerating ground and building failure, such as increase tilting and expansion of tension cracks, at Buildings B and C. If warranted, NOAA would inform local authorities of the need to take measures to protect beach users. (*Impact 1*)

4.7 FARMLANDS

4.7.1 Setting

The Farmland Protection Policy Act (FPPA) sets forth Federal policies to prevent the unnecessary conversion of land to non-agricultural use. Natural Resources Conservation Service (NRCS) regulations at 7 CFR Part 658, *Farmland Protection Policy Act*, are designed to implement those policies. Soil at the existing site is mapped as HrE2, which does not support prime farmland, farmland of Statewide or local importance, or unique farmland. Soils at the preferred site include HrE2 and LeD2 soils. LeD2 soil could potentially support farmland of Statewide importance [Natural Resources Conservation Service, 2004]. There is no Williamson Act contract for the preferred site or for any other portion of the campus governing the protection of land for farmland.

Regulations at 7 CFR Part 658.2(a) exclude lands already in urban use, committed to urban development, or water storage from definition as farmland. Local land uses and zoning do not apply to UC. The existing SWFSC site and preferred site are designated by UC for urban land uses, specifically academic uses [UCSD, 2004a].

Standards of Significance. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?

Would the project conflict with existing zoning for agricultural use, or a Williamson Act Contract?

Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

4.7.2 Impact—Proposed Action

Impact 1—Conversion of Farmland to Non-agricultural Use. The preferred site and construction staging areas are ~~is~~ not in agricultural use. Because the preferred site and construction staging areas are ~~is~~ committed to urban use, they are ~~it is~~ not subject to FPPA regulations and filing of a farmland conversion impact rating form (Form AD-1006) with the NRCS would not be required. No impacts to farmlands would occur.

4.7.3 Mitigation—Proposed Action

None required.

4.7.4 Impact—No-Action Alternative

Under the no-action alternative, proposed construction of the new SWFSC building would not occur. Therefore, there would be no impacts to important farmlands.

4.7.5 Mitigation—No-Action Alternative

None required.

4.8 AIR QUALITY

4.8.1 Setting

Regulatory Framework and Attainment Status. The existing and preferred SWFSC sites are in San Diego County Air Basin. Air quality in San Diego County is regulated by U.S. EPA, California Air Resources Board (CARB), and San Diego Air Pollution Control District (SDAPCD) under authority of the Federal Clean Air Act (FCAA) of 1970 and the Clean Air Act Amendments of 1977 and 1990. EPA is responsible for implementing national air quality programs. The FCAA requires that each State have an air quality control plan referred to as the State Implementation Plan (SIP), which describes the strategies and control measures the State will use to attain the National Ambient Air Quality Standards (NAAQS). CARB has prepared and submitted an SIP to EPA. SIPs are designed to bring non-attaining areas into conformity with Federal air quality standards. States have the option to add other pollutants, require more stringent compliance, or include different exposure periods. The State of California has a Federally approved SIP, which details policies and regulations to protect and improve air quality in California. CARB is responsible for implementing the SIP and California Clean Air Act (CCAA) of 1988 requirements, and also for oversight and monitoring local air districts. The SDAPCD is the local air district for San Diego County primarily responsible for maintaining air quality conditions for the County, ensuring National and State air quality standards are met. Pursuant to the FCAA, EPA established NAAQS on the basis of human health and welfare criteria for six criteria pollutants considered harmful to public health and the environment. Criteria air pollutants and stationary pollutants are used to measure and regulate air quality. A stationary source is a stationary object, such as a power plant, gas station, incinerator, or house that emits pollutants.

EPA and CARB regulate six pollutants of greatest concern, known as criteria pollutants (ozone [O₃], carbon monoxide [CO], nitrogen oxides [NO_x], sulfur dioxide [SO₂], particulate matter [PM] with diameters in microns of 10 and 2.5 [PM₁₀ and PM_{2.5}, respectively], and lead), as indicators of air quality. Ozone is a photochemical oxidant and the primary component of smog. Ozone is formed through a series of chemical reactions between O₃ precursors (reactive organic gases and NO_x) driven by sunlight. Motor vehicles are a major source of emission of O₃ precursors. PM₁₀ and PM_{2.5} are the result of vehicle emissions (diesel vehicles) and fugitive dust. Major sources of PM₁₀ include fugitive dust emissions from ground-disturbing activities such as construction [EPA, 2004]. PM_{2.5} can deposit deep in the lungs and contain substances that are particularly harmful to human health. The NAAQS and the California Ambient Air Quality Standards (CAAQS) establish limits for these criteria pollutants.

The FCAA and the CCAA set deadlines for attainment of NAAQS and CAAQS. Areas of the State are classified by EPA and CARB as attainment, non-attainment, maintenance, or unclassified for the various criteria pollutants. An attainment designation for an area indicates that the

area has met the standard for the given pollutant. A non-attainment designation indicates that a measured pollutant concentration violated the standard. Maintenance areas are those that were recently in violation but are now in attainment. An unclassified designation indicates that the data are incomplete and do not support designation of either attainment or non-attainment. The NAAQS attainment status designations for the SDAPCD are shown in Table 7. San Diego County is classified as being in non-attainment of NAAQS for O₃ (eight hours) and in attainment or unclassified for all other NAAQS [SDAPCD, 2005]. The clean air strategy of the SDAPCD includes, but is not limited to, preparing plans for the attainment of ambient air quality standards.

**Table 7
EPA Thresholds for Conformity Determination**

Criteria Pollutant	Status of San Diego County	Tons per Year
PM _{2.5}	Attainment	n/a*
PM ₁₀	Unclassifiable	n/a
Ozone (8 hour)	Serious -Basic/Moderate Non-attainment	50
Lead	Attainment	n/a
SO ₂	Attainment	n/a
CO	Attainment	n/a
NO _x	Attainment	n/a

*n/a (not applicable)

EPA regulations at 40 CFR 51.853, *Applicability*, require a conformity determination for Federal transit and highway projects and other Federal actions located in designated non-attainment areas if they exceed thresholds for amount of emissions established by EPA. Construction and operation of the new SWFSC is a Federal action subject to conformity requirements. The attainment status of San Diego County for NAAQS is shown above in Table 7. Areas that comply with national standards but fail to meet more stringent State of California air quality standards are not subject to Federal conformity requirements [CARB, 2005].

For a number of air pollutants, the State of California has adopted CAAQS, which differ from the NAAQS. For some pollutants, the CAAQS are more stringent than the corresponding Federal standards. In addition, CAAQS cover air pollutants not included in the NAAQS, including sulfates, hydrogen sulfide, and visibility-reducing particulates. San Diego County is classified as in attainment or unclassified in regard to CAAQS for CO, nitrogen dioxide, SO₂, lead, sulfates, hydrogen sulfide, and visibility-reducing particulates. The County is in serious non-attainment of State standards for O₃ (one hour), and non-attainment of State standards for PM_{2.5} and PM₁₀ [SDAPCD, 2005; CARB, 2008].

Existing Sources of Air Emissions. The existing SWFSC generates air emissions primarily from operation of Government and commute vehicles. Vehicle emissions include PM_{2.5}, PM₁₀, NO_x, CO, and SO₂. In addition, the existing SWFSC has a backup diesel generator with capacity of 175 kilowatts (kW), which supplies electric power in case of failure of primary power. The generator burns natural gas and operates infrequently for backup and maintenance purposes only. Air pollutants emitted by the standby generator during its infrequent operation include PM_{2.5},

PM₁₀, NO_x, CO, and SO₂. The existing SWFSC site is completely covered by buildings, paved parking lots and walkways, and landscaping. There is very little exposed soil, and fugitive dust emissions are minimal.

Other than fugitive dust stirred up by wind, there are no sources of air emissions at the preferred site.

Greenhouse Gases Global Climate Change. Global climate change is an important environmental concern. Scientific studies have recorded a trend of steadily increased average temperatures at the earth's surface over the last few decades. While climatic oscillations (that is, the ice age) have occurred on earth in the past, the current warming trend has been correlated with changes in the composition of the earth's atmosphere. Emissions of greenhouse gases (GHGs) from anthropogenic (man-made) sources have increased greatly since the start of the industrial revolution about 400 years ago. As a result, concentrations of GHGs in the atmosphere have increased dramatically.

Carbon dioxide (CO₂), CO, NO_x, PM, methane, and water vapor, are considered to be GHGs. Burning of fossil fuels created by the transportation and energy sectors of the economy are the largest sources of GHG emissions in California [CEC, 2005]. GHGs remain in the atmosphere and block the radiation of heat from the earth to space, trapping that energy in the lower atmosphere and earth's surface. As a result, the earth's surface is warming, resulting in a number of adverse consequences. The United Nations Intergovernmental Panel on Climate Change projects that a concentration of GHGs of 400 to 450 parts per million carbon-dioxide equivalent would cause a rise in average global temperature of 2 °C. Higher concentrations of GHGs would result in greater global warming. Potential impacts of global warming include melting of polar ice caps and mountain glaciers, rising sea level, increased incidence of severe weather, spread of tropical diseases to temperate areas, worsened air quality, and stress on ecosystems. In California, the potential for decreased snow pack in the Sierra Nevada Mountains and faster melting of the snow pack could threaten water supplies, which are heavily dependent on the meltwater from the Sierra snowpack.

EPA Region 9 submitted a scoping letter recommending that the EIS/EIR identify the potential impacts to and from climate change and any specific mitigation measures needed to (1) protect the project from the effects of climate change, (2) reduce the project's adverse air quality effects, and (3) promote pollution prevention or environmental stewardship [EPA, 2008a]. Further, the Federal Energy Independence and Security Act of 2007, State of California Global Warming Solutions Act of 2006 (AB 32), and the State of California E.O. S-3-05 [EPA, 2008a] also require consideration of impacts of the project regarding emissions of GHGs and climate change.

CEQA regulations require analysis of climate change. Senate Bill 97 requires the Governor's Office of Planning and Research (OPR) to draft CEQA guidelines for the mitigation of GHG emissions or the effects of GHG emissions by 2009 and to adopt these guidelines by 2010. OPR is currently drafting these guidelines.

CARB is in charge of monitoring and regulating sources of GHG emissions that cause global warming pursuant to the AB 32. Under Assembly Bill 32, CARB is required to set regulations designed to reduce California GHG emissions to 1990 rates by 2020. To date, CARB and SDAPCD have not established policies, procedures, or thresholds for analysis of impacts from emissions of GHG in CEQA documents [CAPCOA, 2008]. One approach for decreasing

emissions of GHGs is the design and construction of new buildings in conformance with stringent energy efficiency standards. LEED is a certification program for design and operation of green buildings for sustainable site development, emphasizing water and energy savings.

Standards of Significance. Would implementation of the proposed action or no-action alternative result in a conflict with or obstruct implementation of an applicable air quality plan?

Would implementation of the proposed action or no-action alternative violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Would implementation of the proposed action or no-action alternative have the potential to expose sensitive receptors to minimal increases in both carcinogenic and non-carcinogenic pollutant increases?

Would implementation of the proposed action or no-action alternative produce objectionable odors affecting a substantial number of people?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative air quality impact considering past, present, and probable future projects?

Does the project impede or conflict with the emissions reduction targets and strategies prescribed in or developed to implement AB 32?

Does the project result in GHG emissions that would hinder or delay the ability of the campus to meet the UC climate change goals contained in the UC Policy on Sustainable Practices?

4.8.2 Impact—Proposed Action

Impact 1—Emissions of Air Pollutants during Construction of the Proposed SWFSC.

Construction would involve site preparation (including excavation and removal of about 127,000 cubic yards of soil from the preferred site), pouring of concrete, and erection and finishing of the new SWFSC building and grounds. During the site preparation and concrete pour phases, about 64 trips by heavy trucks and equipment and 40 trips by workers' private vehicles are expected daily. During the building erection and finishing phases, 40 truck trips and 200 trips by worker vehicles would occur each day [LLG, 2008]. Trucks, equipment, and vehicles would emit air pollutants including criteria pollutants (that is, NO_x [an ozone precursor], PM_{2.5}, and PM₁₀) and GHGs. Earthmoving activities, dirt/debris pushing operations, grading, storage pile creation, truck dumping, and wind entrainment of dust from temporary dirt piles and exposed soil would add to PM_{2.5} and PM₁₀ emitted by internal combustion engines in vehicles and equipment.

Construction is anticipated to occur during ~~2010~~ 2009 through ~~2012~~ 2011. Construction emissions of criteria pollutants (PM₁₀, PM_{2.5}, and NO_x) and GHGs would vary during each phase of construction. Table 8 shows the estimated air emissions from all sources (vehicle operations and fugitive dust) during each year of SWFSC construction activity. Since Construction Staging Areas 3 and 4 are cleared of vegetation or have minimal vegetation, there is a potential for fugitive dust to be stirred up from staging activities and movements of construction vehicles at Area 3 or 4. Table 8 includes fugitive dust that would be generated at either Staging Area 3 or 4. CARB's *EMission FACTors (EMFAC) 2007 model* was used to quantify exhaust emissions from vehicles and EPA's AB-42 Methodology was used to calculate fugitive dust emissions.

**Table 8
Criteria Pollutants and GHG Emissions during Construction**

Pollutant	Emissions (tons/year)
PM _{2.5}	10.9194 to 28.6657
PM ₁₀	40.415.22 to 32.434.39
NO _x (Ozone Precursor)	265.82 to 349.36349.3
CO ₂	2.61 to 5.34

Emissions of NO_x during the construction period would exceed EPA threshold of 50 tons/year, triggering the need for a Federal conformity determination. NOAA would prepare the Federal conformity determination and submit it to EPA. NOAA will be responsible for ensuring that the proposed action conforms to air quality requirements of the SDAPCD. Construction-period emissions of substantial amounts of NO_x, an ozone precursor, in an ozone non-attainment area would be a significant impact. Additional NO_x emissions would cumulatively add to formation of ozone, making it more difficult for San Diego County to meet NAAQS for ozone. This would be a significant impact.

Emissions of PM during construction activities would contribute to overall PM emission in the San Diego County air basin. The County is classified as in attainment of Federal NAAQS for PM_{2.5} and PM₁₀, but is in non-attainment of the stricter State CAAQS for PM_{2.5} and PM₁₀. Construction-period emissions of PM_{2.5} and PM₁₀ could add to the violation of State PM_{2.5} and PM₁₀ standards and would make it more difficult for the County to meet those standards in the near future (that is, during the roughly 2.5-year construction period). To minimize emissions of PM during construction of the new SWFSC, NOAA would prepare and implement a Construction Emissions Management Plan (CEMP). The CEMP would describe BMPs to reduce emissions of air pollutants, including PM. With application of the BMPs contained in the CEMP, construction-period emissions of PM would be less than significant.

Impact 2—Emissions of Air Pollutants During SWFSC Operation. Staff will be moved into the new SWFSC in ~~2012~~ 2011 with no substantial change in staffing. In the long-term, the new SWFSC building may accommodate up to 17 additional staff (a 6% increase over existing staffing). During operation of the new SWFSC, up to 17 additional employees would be commuting to and from work at the new facility, generating a minor increase in vehicle trips attributable to SWFSC. Those additional trips would result in a slight increase in emissions of criteria pollutants and GHGs. The slight increase in GHG emissions would be offset by the measures to be implemented pursuant to California Executive Order S01-07, issued by the Office of the Governor on January 18, 2007. This order establishes a Statewide goal of reducing the carbon intensity of California transportation fuels by 10% by 2020 and requires development of a low carbon fuel standard for California.

The new SWFSC would contain a standby generator with a capacity of up to 1,000 kW, which would be larger than the existing 175 kW standby generator at SWFSC. The new generator would be fueled by either natural gas or diesel. The standby generator would operate only during failure of primary power and for maintenance purposes. Total hours of operation for the existing and proposed standby generator are estimated at 200 per year. Given the relatively small size of the generator and its limited hours of operation, emissions of air pollutants would be minimal.

SDAPCD regulates the installation and operation of electric generators that have an engine capacity exceeding 50 brake-horsepower [SDAPCD, 2008]. The proposed standby generator at the SWFSC would exceed that threshold. NOAA would be required to obtain authority to install and an operating permit for the standby generator from SDAPCD. NOAA would obtain those approvals and abide by any permit conditions.

The proposed SWFSC would use green building techniques to reduce emissions of GHG during building operation. The proposed SWFSC would incorporate a number of design measures to increase energy efficiency and obtain LEED status (see Section 3.1). This approach is consistent with the goals of AB 32 and would comply with climate change goals established by UC and contained in the UC Policy on Sustainable Practices.

Climate change is a result of the cumulative effect of worldwide emissions of GHGs. The proposed GHG emission reduction strategy would minimize the GHG emissions from the project to levels that are not cumulatively considerable. The proposed action would not result in emissions of GHGs that are individually or cumulatively significant.

Fertilizers are high in nitrogen content and can release NO_x to the atmosphere. To reduce the need for fertilizers, the new SWFSC would be landscaped with native plants that are well adapted to the local climate and soil conditions.

SWFSC does not undertake activities that would produce objectionable odors. Emissions of criteria air pollutants and GHGs during operation of the new SWFSC would be less than significant.

Impact 3—Emissions of Air Pollutants during Demolition of Buildings B and C. Demolition of the existing SWFSC Buildings B and C would occur after the new SWFSC is fully occupied. During demolition of Buildings B and C, crews would operate equipment on-site and haul recyclable materials and debris to local waste handling centers and landfills. This would include stripping of ACMs from Buildings B and C prior to demolition of the two buildings. Demolition would require fewer trips and a smaller crew of workers than construction (60 vehicle trips per day are assumed). The demolition period is expected to last for three to six months. During that period, trucks would haul materials and debris to local landfills and material handling facilities, heavy equipment would operate on-site, and workers would use private vehicles to commute to and from the demolition site. These activities would emit criteria pollutants and GHGs. Table 9 shows the total quantity of air pollutants that would be emitted during the demolition period. CARB’s EMFAC 2007 model was used to quantify exhaust emissions from vehicles and EPA’s AB-42 Methodology was used to calculate fugitive dust emissions. NO_x emissions would not exceed the EPA thresholds and a Federal conformity determination would not be required for the demolition period. Demolition impacts on air quality would be less than significant.

**Table 9
Criteria Pollutants and GHG Emissions during Demolition**

Pollutant	Emissions (tons/year)
PM _{2.5}	0.02
PM ₁₀	0.02
NO _x (Ozone Precursor)	24.8
CO ₂	0.75

During demolition of Buildings B and C at the existing SWFSC, particulate matter would be generated during dismantling of the buildings and loading of materials into haul trucks. Additionally, operation of equipment and vehicles would generate criteria pollutants and GHGs. Demolition activities would generate small amounts of air pollutants. Except for emissions of GHGs, which would be cumulatively significant, air quality impacts would be less than significant.

4.8.3 Mitigation—Proposed Action

- Air-1 To comply with Federal regulations at 40 CFR Parts 51 and 93, NOAA would prepare a Federal conformity determination and submit it to EPA for approval. NOAA will ensure that the proposed action conforms to air quality requirements of the SDAPCD. (*Impact 1*)
- Air-2 NOAA would request that construction and demolition contractors implement *SmartWay Truck Efficiency* and anti-idling practices to reduce the amount and effects of GHG emissions during the construction and demolition periods. These practices include retrofitting heavy duty trucks (trucks/trailers) and vehicles used during construction with the best available “SmartWay Transport” and/or CARB-approved technology to reduce GHG. These technologies work by reducing aerodynamic drag and rolling resistance by using cab roof fairings, cab side gap fairings, cab side skirts, and on the trailer side, trailer side skirts, gap fairings, and trailer tail; and using single wide tires or low-rolling resistance tires and automatic tire inflation systems on both the tractor and the trailer. (*Impacts 1 and 3*)
- Air-3 NOAA would prepare and implement CEMP measures during the construction and demolition periods. The CEMP would identify detailed measures to minimize emissions of dust and other air pollutants, such as
- stabilization of unpaved roads at the construction and demolition sites using water, chemical dust suppressants, and/or other stabilization techniques;
 - pre-soaking and/or periodic sprinkling of areas to be cleared of vegetated and/or graded areas with water;
 - periodic sweeping of streets surrounding the construction and demolition sites, to minimize dust emissions;
 - limiting vehicle speeds on unpaved roads and areas to 15 mph;
 - prompt revegetation of areas of exposed soil as soon as construction/demolition activities are completed;
 - encouragement by NOAA for contractors to use alternate fuels and retrofit existing engines in construction equipment, to the extent that equipment is available and cost effective;
 - limiting idling time of construction and demolition equipment to 10 minutes when not in use; and
 - specify that contracts for construction of the new SWFSC facility and demolition of Buildings B and C at the existing facility will require medium- and large-size construction fleets to comply with CARB regulations for in-use off-road diesel

vehicles (California Code of Regulations, Title 13, Motor Vehicles, Article 4.8, Section 2449).

(Impacts 1 and 3)

- Air-4 NOAA would obtain authority to install and an operating permit from SDAPCD for the standby generator at the new SWFSC. The permits would include detailed conditions to ensure that the generator operates at peak efficiency, minimizing emissions of air pollutants. *(Impact 2)*
- Air-5 The new SWFSC would meet LEED Silver standards for energy efficiency and environmental sustainability. *(Impact 2)*
- Air-6 SWFSC would implement a Transportation Demand Management System (TDMS) to reduce the amount of vehicle trips by staff. The TDMS would identify opportunities (for example, vanpools, public transit, bicycling) for alternatives to single-occupancy cars and assist staff in employing those alternatives. *(Impact 2)*
- Air-7 SWFSC would include facilities to support bicycle commuters, including convenient racks for securing bicycles, and showers for use by bicycle-commuting staff. *(Impact 2)*

4.8.4 Impact—No-Action Alternative

Under the no-action alternative, the proposed construction of the new SWFSC building or demolition of Buildings B and C would not occur. Therefore, there would be no increase in emissions of air pollutants or impacts to air quality.

4.8.5 Mitigation—No-Action Alternative

None required.

4.9 NOISE AND VIBRATION

4.9.1 Setting

Noise. This section describes current noise levels at the existing and preferred sites for SWFSC, sources of noise in the vicinity of these sites, and guidelines and regulations for human exposure to noise. Noise varies in both frequency (pitch) and amplitude (loudness). Pitch is determined by the number of individual sound waves impinging on the receptor per period, generally measured in cycles per second. Deep pitch (bass) results from a lower number of cycles, and high pitch (treble) results from a higher number of cycles [UCSD, 2004a].

Loudness is a result of amplitude or the size of the noise waves. The standard unit used to measure noise amplitude is the decibel (dB). For purposes of measuring human perception and response to noise, the dBA is typically used because it assigns weights to different frequency bands based on the sensitivity of the human ear. Humans generally cannot perceive changes in noise levels less than 3 dBA. A 5 dBA change in noise level is perceptible by most people. A 10 dBA increase in noise level is perceived by humans as doubling in loudness [UCSD, 2004a]. The loudness or decibel level of sound decreases with increasing distance from the source of the noise. Sound from a point source (for example, a piece of construction equipment) decreases by 6 dBA for each doubling of distance from the source. Sound from a linear source (for example, a highway) decreases by 3 dBA with each doubling of distance. The nature of the environment affects the degree of attenuation, with relatively less attenuation occurring in a hard environment

where concrete and structures predominate, and greater attenuation occurring in a vegetated environment [UCSD, 2004a].

Noise descriptors are used to describe the effects of community noise on people. There are three commonly used noise descriptors:

- Equivalent Energy Noise Level (Leq)—the average acoustic energy content of noise
- Day Night Average Sound Level—24-hour average Leq with a 10 dBA penalty added to nighttime noise (occurring between 10:00 PM and 7:00 AM)
- Community Equivalent Noise Level (CNEL)—24-hour average Leq with 5 dBA penalty added to evening noise (7:00 to 10:00 PM) and a 10 dBA penalty added to nighttime noise (occurring between 10:00 PM and 7:00 AM)

The primary effects of noise on human activity come from interference with speech and sleep. According to EPA, an Leq of 45 dBA or below in the interior of a residence will not interfere with speech recognition. EPA, Federal Aviation Administration, and U.S. Department of Housing and Urban Development consider interior noise levels of 45 Leq suitable for residences. Typical residential construction provides 25 dBA of noise attenuation with windows closed, although the level of attenuation will vary with the type of building materials and quality of construction, and nature of the exterior noise [UCSD, 2004a].

Noise at the SIO campus is generated by human activities (for example, conversations, outdoor recreation, band practice), the ocean, building sources (for example, heating and ventilation equipment, water pumps), construction activity, movement of vehicles on local roads, and aircraft overflights. La Jolla Shores Drive is the primary source of surface transportation noise at the existing and preferred sites for SWFSC. Traffic noise levels were measured on the segment of La Jolla Shores Drive between La Jolla Farms Road and Downwind Way at 66 dBA CNEL in 2004. No airports are within two miles of the SIO campus and the existing and preferred sites are not within the 60 dBA CNEL contour for an airport. A heliport is located at Scripps Memorial Hospital, about 1.75 miles northeast of the preferred site. Aircraft occasionally fly overhead and generate minimal and sporadic noise at ground level [UCSD, 2004a].

Ambient sound levels were measured in 2003 at a location about 250 ft. southeast of the preferred SWFSC site and 1,000 ft. southeast of the existing site. The noise measurements, made at a distance of 50 ft. from La Jolla Shores Drive, are shown in Table 10.

Table 10
Ambient Noise Levels Measured 250 ft. Southeast of SWFSC Preferred Site

Time of Day	Leq Noise Level
1:00 to 2:00 PM	54.7 dBA
7:00 to 8:00 PM	53.9 dBA
11:10 PM to 12:00 Midnight	50.8 dBA

The Federal Noise Control Act of 1972 directed EPA to develop guidelines for human exposure to noise. EPA prepared guidelines for community noise levels based on land use category. For residential uses, exterior community noise levels of 55 dBA and interior levels of 45 dBA are considered acceptable. California Department of Health Services guidelines for acceptable community noise classify CNEL below 60 dBA acceptable for low-density residential use and below 65 dBA as acceptable for high-density residential use [UCSD, 2004a].

NOAA and UCSD are sovereign Federal and State agencies, respectively, and not subject to local ordinances. However, City of San Diego noise regulations are informative. Exterior noise levels of 65 dBA CNEL are considered compatible with residences, schools, and other noise-sensitive uses. City ordinance also covers construction noise. Construction or demolition activities that cause disturbing, excessive, or offensive noise are prohibited between the hours of 7:00 PM and 7:00 AM and on Sundays and legal holidays (except Columbus Day and Washington's Birthday). Construction activity cannot cause an average sound level at a residential property exceeding 75 dB during the 12-hour period from 7:00 AM to 7:00 PM [UCSD, 2004a].

Construction Staging Areas 3 and 4 are located 1.3 and 2.2 miles, respectively, from the SWFSC construction site. Noise levels of 67 CNEL were measured at monitoring location M8, which is close to the remote Construction Staging Area 3 [UCSD 2004b]. Noise levels of 51 CNEL were measured at monitoring location ML9, which is close to alternative Construction Staging Area 4 [UCSD 2004b].

Vibrations. Vibration results from movements of waves through solid material. Ground-borne vibrations propagate from the source through the ground to structures. Ground-borne vibrations can result from movement of large vehicles (for example, construction equipment, trains), earthquakes, operation of plate compacts and generators, and haul trucks emptying soil loads. Frequency measures the number of oscillations per unit of time. The normal frequency range of ground-borne vibrations is 1 to 200 hertz. Human perception of vibrations is measured by peak particle velocity (PPV) using units of inches per second. The California Department of Transportation considers the lower PPV threshold for human perception of vibration as 0.006 inch per second. Most people find continuous vibrations of 0.010 inch per second annoying. The Federal Transit Administration and the Federal Railway Administration published guidelines containing a lower threshold of 0.2 inch per second for vibrations that may cause architectural damage to conventional structures [UCSD, 2004a].

Standards of Significance. Would implementation of the proposed action or no-action alternative result in a substantial and permanent increase in ambient noise levels or expose people to noise in excess of standards?

Would implementation of the proposed action or no-action alternative result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity?

Would implementation of the proposed action or no-action alternative expose people residing or working in the project area to excessive noise levels resulting from aircraft?

Would implementation of the proposed action or no-action alternative result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative noise impact considering past, present, and probable future projects?

4.9.2 Impact—Proposed Action

Impact 1—Construction Noise. Construction of the new SWFSC at the preferred site would occur over a period of about two-and-a-half years. During that period, construction activities and equipment would generate noise. At a distance of 50 ft., earthmoving equipment (such as front-loaders, backhoes, tractors, scrapers, graders, pavers, trucks) would generate noise levels of 73 to 95 dBA. Equipment used to handle and move building materials (such as concrete mixers, concrete pumps, cranes) would generate noise levels of 75 to 88 dBA. Generators and compressors would generate noise levels of 71 to 85 dBA. Impact equipment (such as pneumatic wrenches, jack hammers, pile drivers) would generate the loudest noise levels of 81 to 104 dBA. Construction activities would occur primarily during normal working hours on weekdays and Saturdays. Limited off-hour work may occur.

Construction activities generating the loudest noise would occur sporadically during the construction period. The average noise level at the boundary of the construction site would not be expected to exceed 75 dB during the period from 7:00 AM to 7:00 PM on a given work day. The distance from the preferred site to the nearest sensitive receptor and the resulting attenuation of construction noise due to distance is given in Table 11.

**Table 11
Distance from Preferred Site to Noise Sensitive Receptors**

Receptor	Distance and Direction	Attenuation of Construction Noise with Distance
Private Residence	180 ft. north	18 dBA
Keck Center for Ocean Atmospheric Research	60 ft. south	6 dBA
Coast Apartments	850 ft. east	30 dBA

Based on typical noise levels produced by each type of construction activity and equipment and the amount of attenuation shown in Table 11, the expected level of exterior noise at each sensitive receptor can be calculated; Table 12 shows those levels. Table 13 shows interior noise levels, based on 25 dBA of structural attenuation. It is important to note that these are instantaneous noise levels that would occur sporadically while construction is in progress and are not comparable to CNEL.

Table 12
Exterior Construction Noise Levels at Sensitive Receptors
with Attenuation due to Distance from Source

Receptor	Earthmoving	Handling Building Materials	Generators and Compressors	Impact Equipment
Private Residence	55 to 77 dBA	57 to 70 dBA	53 to 67 dBA	63 to 86 dBA
Keck Center for Ocean Atmospheric Research	67 to 89 dBA	69 to 82 dBA	65 to 79 dBA	75 to 98 dBA
Coast Apartments	43 to 65 dBA	45 to 58 dBA	41 to 55 dBA	51 to 74 dBA

Table 13
Interior Construction Noise Levels at Sensitive Receptors
with Attenuation due to Distance from Source

Receptor	Earthmoving	Handling Building Materials	Generators and Compressors	Impact Equipment
Private Residence	30 to 52 dBA	32 to 45 dBA	28 to 42 dBA	38 to 61 dBA
Keck Center for Ocean Atmospheric Research	42 to 64 dBA	44 to 57 dBA	40 to 54 dBA	50 to 73 dBA
Coast Apartments	18 to 40 dBA	20 to 33 dBA	16 to 30 dBA	26 to 49 dBA

The projected level of noise generated by individual construction activities could interfere with interior and exterior activities at the private residence north of the preferred site and at the Keck Center for Ocean Atmospheric Research. Although construction noise events would be intermittent during the roughly two-year construction period, construction noise could be a significant impact. To reduce construction noise levels and mitigate impacts to sensitive receptors, NOAA would implement noise abatement measures set forth in the UCSD 2004 LRDP EIR, including limiting the time of day and days on which the loudest construction activities could occur and mandating use of noise control devices on construction vehicles and equipment. These measures would reduce this impact to a less than significant level.

Movement of trucks and vehicles and loading and unloading of vehicles would generate noise during construction staging activities. If remote Construction Staging Area 3 is chosen for construction staging, noises would be similar to noise generated by truck movements on the adjacent North Torrey Pines Road, which is a designated multi-lane truck route. Staging activities at alternative Construction Staging Area 4 (a portion of Torrey Pines Gliderport) would temporarily increase noise levels at the Torrey Pines Gliderport. However, no noise sensitive land uses are located in proximity to Area 4. Noise generated by staging activities at either Area 3 or 4 would be a less than significant impact.

Impact 2—Operational Noise. Activities at SWFSC would be typical of a university environment. Operation of the new SWFSC would not generate unusual or excessive noise. Noise levels would not change substantially from those measured on campus in 2004. The new SWFSC would generate a small increase in traffic due to the potential 6% increase in number of employees as compared with the existing SWFSC. Additionally, traffic would be redistributed on

streets in the vicinity of the preferred site. The increase in traffic volume on local streets due to cumulative build-out of the area and development of the new SWFSC would be no more than 17.6% on any affected roadways, which would not result in a perceptible increase in traffic noise levels. Noise impacts during operation of SWFSC would not be significant.

Impact 3—Demolition Noise. Demolition of Buildings B and C at the existing site would require use of heavy equipment and trucks. No use of explosives is proposed. Impact equipment would be used and would intermittently generate noise levels of 81 to 104 dBA. The nearest sensitive receptor is a private residence located 160 ft. north of Building B. At that distance, demolition noise would attenuate by about 9 dB, resulting in exterior noise levels of 72 to 95 dBA. The residential structure (with windows closed) would provide an additional 25 dBA of attenuation, reducing interior noise levels to 47 to 70 dBA. These noise levels could interfere with normal communication. Although demolition noise events would be intermittent during the roughly six-month demolition period, demolition noise could be a significant impact. To mitigate this potentially significant impact, construction noise abatement measures contained in the UCSD 2004 LRDP EIR would be applied to demolition of Buildings B and C at the existing SWFSC. These measures would reduce this impact to a less than significant level.

Impact 4—Construction Vibrations. The PPV of vibrations decreases with distance from the source. It is not expected that driving of piles or use of impact hammers or drop balls would be required to construct the new SWFSC. Therefore, operation of trucks and large bulldozers would generate the greatest vibrations. Vibrations generated by these sources would have an estimated intensity of 0.006 PPV at a distance of 200 ft. and persons within 200 ft. of the preferred site may notice the vibrations. Vibration intensity would be 0.01 PPV at 100 ft. from the source, and persons within this distance may be annoyed. Vibration intensity of 0.2 PPV, which could cause architectural damage, would be limited to within 20 ft. from the source [UCSD, 2004a].

The only occupied structures within the area potentially affected by construction vibrations are the closest residence to the preferred site, 180 ft. north, and the Keck Center for Ocean Atmospheric Research, 60 ft. south. The occupants of the residence may perceive vibrations but should not be annoyed. The Keck Center for Ocean Atmospheric Research is 60 ft. from the preferred site. Vibrations could annoy occupants of that building, but would not damage the building. However, scientific research performed at the Keck Center for Ocean Atmospheric Research could be sensitive to vibrations of lower intensities than those that annoy persons or cause structural damage. This impact could potentially be significant, depending on the nature of the affected scientific activities. To mitigate potential vibration impacts to Keck Center activities, NOAA would develop and implement a construction vibration minimization plan in collaboration with UCSD Environmental Planning and Facility Design and Construction Departments. The plan would include monitoring of construction vibration levels to ensure that they do not increase to harmful levels.

Impact 5—Demolition Vibrations. Demolition and removal of Buildings B and C at the existing SWFSC may require use of a pavement breaker and/or drop ball. Vibrations generated by these sources would have an estimated intensity of 0.2 PPV at 40 ft., 0.01 PPV at 300 ft., and 0.006 PPV at 400 ft. [UCSD, 2004a]. Other than Buildings A and D, which would not be demolished, the closest occupied structure is the residence located 160 ft. north of Building B. At that distance, vibrations would be of sufficient intensity to annoy occupants of the residence, but would not be expected to cause structural damage. Vibrations generated by demolition activities

would be less than significant. The existing site for SWFSC is located about 60 ft. from the Keck Center for Ocean Atmospheric Research, which houses a number of scientific research activities that may be more sensitive to vibrations than buildings or persons. The Keck Center for Ocean Atmospheric Research is located about 600 ft. from the demolition work area. Vibrations tend to dissipate rapidly with distance. Due to the distances involved, it is unlikely that vibrations would have an adverse effect on vibration-sensitive scientific activities at the Keck Center.

Impact 6—Operational Vibrations. SWFSC would not contain equipment or house activities that would generate significant vibrations. Operational traffic would intermittently cause minor short-lived vibrations that may be perceptible to occupants of SWFSC and nearby structures, but those vibrations would be similar to vibrations caused by existing traffic in the area and would not be harmful to persons or structures. No significant vibration effects would result during operation of SWFSC.

4.9.3 Mitigation—Proposed Action

Noi-1 NOAA would require construction and demolition contractors to comply with the construction noise abatement measures contained in the UCSD 2004 LRDP EIR, which are listed below.

- Construction or demolition activities would be implemented in a manner that prevents the 12-hour average sound level from exceeding 75 dBA between 7:00 AM and 7:00 PM on Monday through Saturday at the following noise sensitive land uses: residences located north of the existing and preferred SWFSC sites and the Keck Center for Ocean Atmospheric Research.
- Construction and demolition vehicles and equipment would be properly outfitted with manufacturer-recommended noise-reduction devices maintained in good working order.
- Stationary construction and demolition equipment, such as generators, pumps, and batch plants, would be located as far as possible (at least 100 ft.) from the residences located north of the existing and preferred SWFSC sites and the Keck Center for Ocean Atmospheric Research.
- Laydown and staging areas for construction and demolition activities would be located as far as feasible from the residences located north of the existing and preferred SWFSC site and the Keck Center for Ocean Atmospheric Research.
- Residents of houses located north of the existing and preferred SWFSC site and occupants of the Keck Center for Ocean Atmospheric Research would be informed at least two weeks prior to the start of SWFSC construction or demolition of Buildings B and C.
- Loud construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large-scale grading operations occurring within 100 ft. of an academic building will not be scheduled during any finals week of classes to the extent feasible.
- Loud construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large-scale grading operations occurring within 100 ft. of an academic building will be scheduled during holidays, class breaks, and/or summer session to the extent feasible.

- Loud construction activity located within 100 ft. of a residential building will be restricted to occur between the hours of 7:00 AM and 7:00 PM Monday through Friday.

(Impacts 1 and 3)

Noi-2 NOAA would have a person qualified in construction noise and vibration assessment prepare construction and demolition vibration mitigation plans, which would be reviewed for adequacy by the UCSD Environmental Planning and Facility Design and Construction Departments. The plans will describe measures to reduce construction and demolition vibrations to the maximum extent possible. Vibration monitoring will be performed during construction activities occurring in proximity to the Keck Center to establish the maximum level of vibration. If vibrations reach levels that disrupt research activities being performed at the Center, alternative work methods and/or equipment would be employed to reduce vibration levels to non-harmful levels. *(Impact 4)*

4.9.4 Impact—No-Action Alternative

No construction or demolition activities would occur and no new traffic would be generated. No changes in the existing noise or vibration environment would result.

4.9.5 Mitigation—No-Action Alternative

None required.

4.10 VISUAL AESTHETICS

4.10.1 Setting

The existing SWFSC facility consists of four three- to four-story buildings constructed in the mid 1960s. The buildings are connected and surround an interior courtyard. The buildings have bare concrete façades with prominent balconies and open-air walkways on each level on all sides of the buildings. These buildings are similar in height and bulk to other large buildings on the SIO campus.

Views of the buildings are available primarily from La Jolla Shores Drive, a two-lane paved arterial street located east of the buildings. La Jolla Shores Drive is fairly steep and climbs upward from south to north as it passes the existing SWFSC. The entrance drive to SWFSC curves sharply and descends into the NOAA site. SWFSC buildings are set back roughly 200 ft. from La Jolla Shores Drive. To the south of the SWFSC site, northbound motorists, bicyclists, and pedestrians on La Jolla Shores Drive obtain partially obstructed views of SWFSC buildings, due to intervening SIO buildings and mature trees and landscaping. Because of the sharp curve of the entrance drive, clear views of SWFSC buildings are generally not available from the intersection of the entrance drive with La Jolla Shores Drive. To the north of SWFSC, La Jolla Shores Drive continues to climb uphill and makes a broad “ess” curve, turning to the east, to the south, and then back east and northward. An earthen berm on the southern shoulder of the road prevents southbound travelers from seeing to the south and east until they clear the “ess” curve and are almost adjacent to SWFSC.

The existing SWFSC buildings are located at the crest of a 180 ft. high coastal bluff. Due to the steepness of the bluff, views of the buildings are difficult to obtain from the relatively narrow beach at the base of the bluff. Persons boating or surfing on the Pacific Ocean west of the

SWFSC site would see the existing SWFSC building at the crest of the bluff. Because the bluff is about three times taller than the buildings, the buildings would appear as subdued visual elements at the top of the bluff.

The preferred site is undeveloped and vegetated with a mixture of trees, brush, and low ground cover. The site is within a visually sensitive zone as sweeping views of the Pacific Ocean are available from the site and vicinity [UCSD, 2004b]. La Jolla Shores Drive curves around the site and abuts the northern and eastern site boundaries. The SIO campus and the Pacific Ocean are the dominant visual elements for southbound travelers on La Jolla Shores Drive as they pass the preferred site. Because the preferred site is lower in elevation than La Jolla Shores Drive, and blocked from view by roadside trees and an earthen berm, the preferred site is a minor visual element in these views. The preferred site is much more prominent to northbound travelers on La Jolla Shores Drive, who view it as an undeveloped and vegetated hillside rising to their right.

The LCP states that “La Jolla is a community of significant visual resources.” La Jolla Shores Drive in the vicinity of the SIO campus is classified as a road from which coastal waters are visible and the viewshed from this segment of road is considered an important visual resource [City of San Diego Planning Department, 2008].

The City and County of San Diego have adopted light pollution or “dark sky” policies to protect astronomical observations that occur in the area, UCSD has similarly developed outdoor lighting polices to prevent unnecessary nighttime lighting; UCSD lighting design guidelines recommend exterior lighting with emissions characteristics that allow filtering by astronomical observatories [UCSD, 2004b].

Standards of Significance. Would implementation of the proposed action or no-action alternative have a substantial adverse effect on a scenic vista or substantially degrade the existing visual character or quality of the site or surroundings?

Would implementation of the proposed action or no-action alternative create a new source of light or glare that would adversely affect day or nighttime views?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative aesthetic impact considering past, present, and probable future projects?

4.10.2 Impact—Proposed Action

Impact 1—Addition of New Visual Feature to Viewshed. Construction of a new SWFSC at the preferred site would add a prominent visual element to the viewshed of La Jolla Shores Drive. The existing undeveloped hillside at the preferred site would be replaced with a multi-story institutional building, continuing the existing line of development on the east side of La Jolla Shores Drive. Figures 10(a) and 10(b) show an aerial view of the new SWFSC viewed from the southwest and a ground-level view of SWFSC viewed looking to the east from La Jolla Shores Drive. The SWFSC facility will be highly visible to travelers on La Jolla Shores Drive. It would appear as a three-story institutional building abutting the roadway, with large windows and a covered open-air balcony as prominent features. The building would have a complex articulated appearance, adding visual interest. The entrance to the building would face southward and would be clearly visible from the road. Sidewalks along La Jolla Shores Drive would connect to a large plaza in front of the main building entrance, which would be adorned with a ground-level NOAA logo set in a low stone façade. Covered parking would be located underground and would not be visible from La Jolla Shores Drive. The existing drive providing access to the parking lot in front of the Keck Center for Ocean Atmospheric Research would be improved to provide vehicular access to the building. Native trees would be planted along La Jolla Shores Drive and will soften the view over time as they grow in size.

The new SWFSC would be a large institutional structure located on the campus of UCSD/SIO. The exterior design of the new facility would be consistent with design guidelines contained in the UCSD 2004LRDP. The SWFSC design is being reviewed by two UCSD committees to ensure conformance to the UCSD 2004 LRDP: MSPPC and C/CPC. NOAA is actively participating in the meetings of these two committees and will follow their design recommendations to the maximum extent possible. The new SWFSC would have a light-colored stone and glass exterior, which would differentiate it from the many buildings on the campus with dark or natural wood façades. Compared with the adjacent Keck Center building, it would be similar in height but wider and much closer to La Jolla Shores Drive. The building would be set into a relatively steep hillside, reducing its apparent bulk. The new SWFSC would be distinctive and visually prominent, but would not be excessive in size compared with other structures on campus, or appear out of place in this setting. These impacts would be less than significant.

Impact 2—Blocking of Ocean Views. The SWFSC building would be constructed into the hillside and the roof would be lower in elevation than La Jolla Shores Drive as it curves around the northern and eastern borders of the preferred site. The building would not block views of the Pacific Ocean from La Jolla Shores Drive (see Figures 11 and 12). A substantial percentage of the roof area would be a green roof covered by vegetation. This would soften the appearance of the building when viewed by travelers on La Jolla Shores Drive looking downward at the building. The proposed SWFSC would be consistent with policies of the LCP to protect ocean views. Effects on ocean views would be less than significant.



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 10(a) ARCHITECTURAL RENDERING OF PROPOSED SWFSC FACILITY — VIEW FROM SOUTHWEST



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 10(b) ARCHITECTURAL RENDERING OF PROPOSED SWFSC FACILITY — VIEW FROM WEST



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 11 VIEW (LOOKING WEST) OF THE PACIFIC OCEAN AND THE PROPOSED SWFSC FACILITY VIEWED FROM LA JOLLA SHORES DRIVE EAST OF THE PREFERRED SITE



Source: Delawie, Wilkes, Rodrigues, Barker Architects (June 2008)

FIGURE 12 BEFORE AND AFTER VIEWS (LOOKING WEST) FROM LA JOLLA SHORES DRIVE EAST OF THE PREFERRED SITE

Impact 3—Exterior Lighting. Exterior lighting at the new SWFSC would enhance security and safety. The lights would be visible primarily from La Jolla Shores Drive and the Keck Center and parking lot south of the preferred site, which are not considered light-sensitive. Residential properties to the north of the preferred site are uphill from the site and shielded by trees and brush at the site boundary, which would be preserved. Lighting pointed at La Jolla Shores Drive could be an irritant to motorists. Light emissions would not be expected to impinge on the segment of La Jolla Shores Drive and nearby residential properties north of the site. However, exterior lights would be pointed downward and/or shielded as necessary if excessive light does leave the property. Provided that exterior lights at the new SWFSC comply with UCSD Outdoor Lighting Policy and UCSD Outdoor Lighting Design Guidelines, impacts would be less than significant.

Impact 4—Removal of Existing Visual Features. Demolition and removal of Buildings B and C at the existing SWFSC would remove two large visual elements. However, when viewed from La Jolla Shores Drive, Buildings B and C are mostly behind Buildings A and D, which will be retained. Thus, removal of Buildings B and C would have little effect on views from La Jolla Shores Drive. In views from the Pacific Ocean, the removal of Buildings B and C from the bluff top would reduce the visual prominence of the existing SWFSC. Building A has its longitudinal axis perpendicular to the shoreline; therefore, only a relatively small end façade would be visible to ocean-going viewers. Of the four existing buildings, Building D is the farthest from the bluff crest and would generally not be visible to viewers on the ocean. Building D would also be screened by trees in the current interior courtyard, which would be opened to outside views by removal of Building B. Some of those trees may be removed during demolition of Buildings B and C, but NOAA would retain as many as possible. These impacts would be less than significant.

4.10.3 Mitigation—Proposed Action

- Vis-1 The proposed SWFSC would undergo design review by UCSD DRB and UCSD Physical Planning Department to ensure that the visual features of the new SWFSC are consistent with UCSD design policies. The design review process will evaluate building mass and form, building proportion, roof profile, architectural detail and fenestration, texture, color, type and quality of building materials, landscaping, and other elements as deemed necessary. (*Impact 1*)
- Vis -2 Existing large vegetation (that is, trees and large shrubs) at the preferred site would be retained as much as possible to provide visual screening for the new SWFSC building. (*Impact 1*)
- Vis-3 The proposed SWFSC would be located in a visually sensitive zone. To minimize glare generated by reflective building elements, exterior surfaces would be comprised of non-reflective materials to the maximum extent possible and windows would use non-mirrored window glass (that is, high technology and/or low emissivity glass). (*Impact 1*)
- Vis-4 Trees would be planted along the western boundary of the new SWFSC site, between the new building and La Jolla Shores Drive, providing visual screening of the new SWFSC building. (*Impact 1*)

- Vis-5 Exterior lights on the new building would be shielded and/or pointed downward as necessary to minimize the amount of light spilling onto residential properties to the north. Additionally, low intensity lighting would be used wherever possible and lights would be directed to illuminate the specific feature to be lit and shielded to prevent spillover of light onto unintended areas. SWFSC exterior lighting plans would be reviewed by the UCSD DRB to ensure that they comply with the UCSD Outdoor Lighting Policy and the UCSD Outdoor Lighting Design Guideline. (*Impact 3*)
- Vis-6 Existing mature trees at the existing SWFSC would be retained to the maximum extent feasible during demolition of Buildings B and C. (*Impact 4*)

4.10.4 Impact—No-Action Alternative

No construction or demolition of buildings would result. No changes in the visual setting would result.

4.10.5 Mitigation—No-Action Alternative

None required.

4.11 HISTORIC AND CULTURAL RESOURCES

4.11.1 Setting

Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) requires Federal agencies to consider the effects of their actions on historic places and to seek comments from the State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation. Section 106 requirements are set forth in 36 CFR Part 800, *Protection of Historic and Cultural Properties*. Additional NOAA compliance procedures for managing places of cultural, historical, and scientific importance are laid out in NAO 216-6. In consideration of NOAA's requirements under NHPA Section 106, places listed or eligible for listing on the National Register of Historic Places (NRHP) at or near the preferred and current SWFSC sites, were identified in a cultural survey [Hector, 2008a]. The State of California requires evaluations of the significance of prehistoric and historic resources within the State per California PRC Section 5020. The California Registry of Historical Resources (CRHR) is maintained by the SHPO and contains resources listed on the NRHP.

The preferred site is located on sloped terrain, reducing the potential for cultural resources to be found; however, UCSD determined in its 2004 LRDP EIR that there are known cultural resources within SIO property. Therefore, ASM Affiliates was contracted by SRI International to conduct a Phase I Cultural Survey for the preferred and existing sites. Phase I Cultural Survey results and historical database searches are outlined in *Cultural Resource Report for Proposed NOAA SWFSC Relocation* [Hector, 2008a] in conformance with NHPA, NEPA, and CEQA. A records search covering the area within 0.25 mi of the preferred and existing SWFSC sites was conducted at the National Register Information System (NRIS) and the South Coastal Information Center (SCIC). In addition, a Sacred Lands search request was submitted to the Native American Heritage Commission.

SIO was established in 1903 as the San Diego Marine Biological Institution at the Coronado Boat House. In 1905, the Institution purchased 170 acres at La Jolla Cove to be used for constructing a permanent facility. The George H. Scripps Laboratory, designed by noted San

Diego architect Irving Gill, was completed in 1910 and is listed on the NRHP. The laboratory building represents the first permanent structure of any of the shore side marine biological stations in the western hemisphere and is an architectural landmark—one of the first monolithic concrete buildings [Shor et al., 1979]. The UCSD 2004LRDP EIR identified several other structures at the UCSD/SIO campus that may be historic. The Director's House was built in 1914 by Prof. William E. Ritter, the first director of the SIO. Twelve wood-framed cottages were built in 1915 and 1916 and four of those cottages are still standing, located about 400 ft. southwest of the preferred site for the new SWFSC. Ritter Hall, the Driving Facility, and Service Yard Buildings were built between 1930 and 1950 and are still standing. These structures range in distance from 800 to 1,500 ft. from the preferred site [UCSD, 2004b].

Many archeological sites were identified near the preferred site and remain important evidence for the antiquity of the human occupation along the west coast of North America. A records search of the SCIC on January 10, 2007, found four listed cultural sites in the general vicinity of the preferred site: SDI-525, SDI-8471, SDI-11019, and SDI-11075. The SDI-525 site is the closest of the four to the preferred site across Torrey Pines Road. SDI-525 has been dated at 7,500 to 5,500 years before present and is strongly associated with early Archaic Period human occupation along the southern California coast. Human burials and postholes were identified at SDI-525 in previous cultural surveys.

Field investigations, consisting of above-ground surface inspections for archaeological features or artifacts, were conducted for the preferred and existing sites. ASM Affiliates concluded “no cultural artifacts or features were found” at the existing site. A 20 meter long by 5 meter wide archaeological site, CA-DI-18610, occurs at the northern portion of the preferred site. CA-DI-18610 is comprised of fire-affected sandstone and five pieces of weathered chione shell. Without further studies, there is insufficient information to make a recommendation concerning whether site CA-DI-18610 meets the National or California Register eligibility criteria [Hector, 2008a]. The Archaic Period is associated with chione shell found at this archaeological site. The archaeological site may meet criteria C and 4 for listing on the National and California Registers of Historic Places, respectively, however further evaluation will also be needed to make this determination [Hector, 2008a].

No excavations would occur at the construction staging areas and there would be no potential for impacts to archaeological resources. Alternative Constuction Staging Area 4 is located at the Torrey Pines Gliderport, which is listed on the California and National Register of Historic Places due to its local significance under Criterion A in the areas of Entertainment/Recreation, Invention, and Transportation [California Office of Historic Preservation, 2008]. The period of significance was 1928 to 1942 for technological achievements and inventions related to gliding [Fogel, 2008]. Construction staging activities would not affect the historic characteristics of the gliderport. Impacts to cultural environment at and near Construction Staging Areas 3 or 4 would be less than significant.

Standards of Significance. Would implementation of the proposed action or no-action alternative cause a substantial adverse change in the significance of a historical resource, or an archaeological resource?

Would implementation of the proposed action or no-action alternative disturb any human remains, including those interred outside of formal cemeteries?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative cultural resources impact considering past, present, and probable future projects?

4.11.2 Impact—Proposed Action

Impact 1—Impacts to Historic or Potentially Historic Structures. The area of potential effect (APE) to historic or cultural resources includes the existing and preferred SWFSC sites and lands within a 0.25 mi radius. No historic or potentially historic structures are located at the preferred or existing SWFSC sites. The closest off-site structures are the four cottages built between 1915 and 1916. Construction and operation of the SWFSC would not physically affect any of those cottages. Existing SIO building structures and mature trees are located between the preferred site and these cottages, and would completely or nearly completely block views of the new SWFSC facility from the cottages and vice versa. Indirect visual effects would be negligible. Scripps, Director’s House, Ritter Hall, and the Driving Facility and Service Yard Buildings are located farther from the preferred site and the existing SWFSC site than the cottages. Intervening buildings and trees would block views of these structures from the new SWFSC and vice versa. No effects to these historic or potentially historic structures would result. Although several structures listed or eligible for listing under the Federal and California Registers are located within the APE for the proposed action (that is, located within 0.25 mile), the proposed action will not directly or indirectly impact any of these structures. Existing Buildings B and C at the SWFSC would be demolished. These buildings were built less than 50 years ago and are not considered eligible for listing on the Federal or California Registers. Impacts to historic or potentially historic structures would be less than significant.

Impact 2—Impacts to Archaeological Resources. Construction of the new SWFSC, including grading and other ground-disturbing activities, at the preferred site has the potential to harm or destroy artifacts found at archaeological site CA-DI-18610, which may be eligible for listing in the Federal and California Registers under criteria C and 4, respectively. CA-DI-18610 is in the APE. CA-DI-18610 was discovered and identified for possible eligibility in the field survey conducted by ASM Affiliates. In order to determine eligibility, further studies need to be conducted to determine the “integrity, artifact quantity and diversity” [Hector, 2008a]. NOAA will have a qualified archaeologist fully investigate the archaeological features at the preferred site. It is unlikely, but not impossible, that human remains could be uncovered during excavation activities for the new SWFSC. If human remains are found, NOAA and UCSD would comply with State requirements contained in PRC 5097.98.

No archaeological sites are known to occur at the existing SWFSC site. Based on the developed nature of the site, it is unlikely that intact archaeological resources are present. No impacts to archaeological resources are expected to result from demolition of Buildings B and C.

4.11.3 Mitigation—Proposed Action

NOAA will implement the following mitigation measures suggested in the ASM Affiliates Cultural Resources Report [Hector, January 2008a]:

- Cul-1 To investigate the significance of archaeological site CA-DI-18610 at the preferred site, NOAA would hire a qualified archaeologist to prepare a treatment plan for archaeological testing. The treatment plan would be submitted to the California SHPO for review and approval prior to implementation. The treatment plan would identify the

APE, taking into consideration the horizontal and vertical extent of proposed ground-disturbing construction activities. The plan will describe how archaeological data would be scientifically collected and how these data will be used to address important research issues. A Native American would monitor subsurface excavation and grading activities. (*Impact 2*)

- Cul-2 NOAA would hire a qualified archaeologist to conduct testing of archaeological site CA-DI-18610. Testing would consist of systematic excavation of the sample area to determine the integrity and vertical and horizontal extent of the deposit, the quality and diversity of artifacts, and the potential for human remains. Standard hand-excavated 1 meter by 1 meter test units would be used during the archaeological test phase. These units would be excavated in 10-centimeter levels (unless cultural stratigraphy is identified). Hand tools would consist of shovels, picks, trowels, brushes, and probes. All soil would be passed through a 1/8-inch mesh screen (or a smaller screen if column samples are taken and processed), using a water screening technique. The units would be excavated until sterile soils or the underlying geological formation is reached. If sterile soils are encountered, an auger or bore would be used to excavate a hole in the middle of each unit to ensure that buried cultural deposits are located beneath the sterile soil. Following completion of the test excavation, all cultural materials will be washed, catalogued, and analyzed. Information from the test phase will be used to determine site integrity. A report describing the test phase would be prepared. (*Impact 2*)
- Cul-3 If archaeological site CA-DI-18610 is recommended as eligible for the NRHP or the CRHR, data recovery would occur. The data recovery phase would be based on results of the test phase, and will focus on recovering archaeological data sufficient to mitigate the destruction of all or a portion of the archaeological site within the APE. (*Impact 2*)
- Cul-4 NOAA and UCSD will comply with PRC 5097.98 in the case where human remains are found. Any uncovered human remains would be treated with respect. This code section requires that excavations cease if potential human remains are uncovered and the County Medical Examiner/Coroner be notified. The Coroner must contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will contact the most likely descendant to determine the appropriate manner of handling the remains. (*Impact 2*)
- Cul-5 NOAA would fund permanent curation at the San Diego Archaeological Center for the artifacts found at archaeological site CA-DI-18610. (*Impact 2*)
- Cul-6 Native American monitors would be on-site during all ground disturbing activities in the construction phase of the project, keeping daily logs and preparing a monitoring report at the conclusion of each phase. Ground-disturbing activities include installation of underground utility lines, landscaping, and paving. (*Impact 2*)
- Cul-7 If human remains are uncovered during any phase of the proposed action, soil associated with the remains should not be removed from the area. (*Impact 2*)

Therefore, with mitigation measures in place, there would be no impacts to site CA-DI-18610.

4.11.4 Impact—No-Action Alternative

Under the no-action alternative, proposed construction of the new SWFSC building would not occur. Therefore, there would be no impacts to historic and cultural resources.

4.11.5 Mitigation—No-Action Alternative

Under the no-action alternative, no ground disturbing activities (that is, construction) would occur. Therefore, no mitigation is warranted.

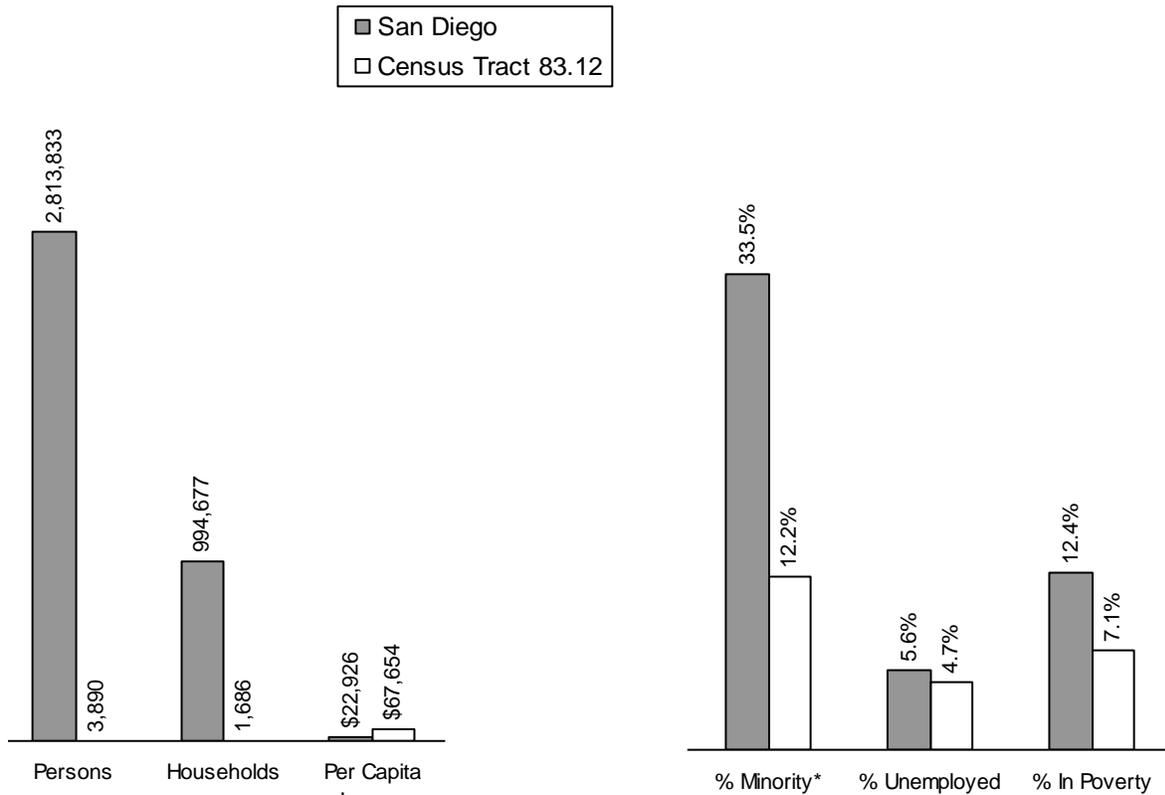
4.12 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.12.1 Setting

The existing and preferred SWFSC sites are located in Census Tract 83.12 in the community of La Jolla, which is part of the City of San Diego in San Diego County, California. According to 2000 U.S. Census, San Diego County had a population of about 2.8 million persons and Census Tract 83.12 had a population of 3,890 persons (see Chart 1). Average household sizes are 2.83 and 2.33 persons in the County and Tract, respectively. Census Tract 83.12 has a per capita that is nearly triple that of the County as a whole. The percentage of minorities, unemployed persons, and persons living in poverty are lower in Census Tract 83.12 than in the County as a whole [U.S. Census Bureau, 2004].

E.O. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse environmental or human health effects on minority populations and low income populations. Federal agencies, programs, and policies should not exclude people and populations of people based on race, color, or nationality from Federal activities or benefits of such activities. Minority communities and low income communities must also have access to public information on matters related to human health and the environment [President, 1994].

Chart 1. Year 2000 Census Data for Census Tract 83.12 San Diego, California



* Minority = persons of Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic or Latino, or other (non white) race.

4.12.2 Impact—Proposed Action

Impact 1—Impacts to Minority and Disadvantaged Populations and Environmental Justice. Construction of the new SWFSC would occur at an undeveloped site planned for academic use by UCSD/SIO. No dislocation of persons or businesses would occur. Scientific research activities conducted at the existing SWFSC would be moved to the new SWFSC and would continue; those activities would be compatible with nearby uses. No substantial increase in employment or change in the nature and intensity of SWFSC operations would result. Construction of the new SWFSC would not separate established neighborhoods, nor would it create barriers to movement of persons and goods. Substantial minority or low income populations are not located in the area and would not be subject to disproportionately high and adverse environmental effects.

Demolition of Buildings B and C would occur after the new SWFSC is occupied. These buildings would be stripped of potentially hazardous materials, such as ACMs and LBP, prior to final demolition. Explosives would not be used during the demolition, and creation of large amounts of dust is not expected. Demolition activities would not result in emissions of hazardous air pollutants that could adversely affect neighboring populations.

Socioeconomic impacts would not be significant.

4.12.3 Mitigation—Proposed Action

None required.

4.12.4 Impact—No-Action Alternative

No socioeconomic or environmental justice impacts would result.

4.12.5 Mitigation—No-Action Alternative

None required.

4.13 PUBLIC SERVICES AND UTILITIES

4.13.1 Setting

The UCSD Police Department provides law enforcement services for the UCSD campus. However, the City of San Diego Police Department provides law enforcement services for the existing SWFSC. The City Police Department also provides support to the UCSD Police upon request [UCSD, 2004a].

The City of San Diego Fire Department is responsible for fighting fires on the UCSD campus. UCSD has a Fire Marshal who implements fire safety, warning, and prevention programs, including building and plans inspections [UCSD, 2004a].

The San Diego Unified School District operates public elementary, middle, and secondary schools serving the La Jolla area. The school nearest to the existing and preferred sites is the Elkhorn Elementary School, located at 2235 Elkhorn Road, approximately two miles to the south [UCSD, 2004a].

San Diego Gas & Electric (SDG&E) provides electric and natural gas service to the existing SWFSC. SDG&E transmission grid also delivers electricity to the campus via 69 kilovolt (kV) transmission lines connecting to the east campus substation. From that substation, power steps down to 12 kV for distribution throughout the campus [UCSD, 2004a].

SWFSC consumed 986,000 kilowatt hours of electricity during 2007. The existing SWFSC is equipped with a standby generator fueled by natural gas. The standby generator provides electric power during loss of primary power. It is also operated periodically for maintenance purposes. The total hours of operation of the standby generator is estimated at less than 200 per year.

The existing SWFSC uses natural gas for space and water heating. SDG&E provides natural gas to the SWFSC from existing gas mains serving the local area.

The City of San Diego Water Utilities Service Department, a member of the San Diego County Water Authority (SDCWA), provides water service to SWFSC and UCSD. SDCWA receives approximately 90% of its water from the Colorado River via the Metropolitan Water District of Southern California. The remaining 10% of water is supplied by local resources of surface and groundwater. The Miramar Reservoir and filtration plant distributes water to the local distribution system via 16- and 18-inch water mains. Within SIO are two metered connections, the Upper Vault and the Lower Vault, which connect to the 30-inch City main [UCSD, 2004a].

The City of San Diego Metropolitan Wastewater Department provides wastewater treatment services for SWFSC and UCSD. Wastewater from the UCSD campus is collected by four major trunk sewer lines. Wastewater generated on the SIO campus flows into the Rose Canyon Trunk

Sewer through three on-campus connections, and is then transported for treatment at the Point Loma Wastewater Treatment Plant. The Point Loma Wastewater Treatment Plant uses chemically assisted primary treatment, which removes about 80% of solids before discharge of the treated wastewater to the Pacific Ocean. Sludge remaining after treatment is disposed of via aerobic and anaerobic digestion, and wet sludge is disposed of at landfills or is used for soil treatment. For irrigation purposes, UCSD uses recycled water that has undergone tertiary treatment [UCSD, 2004a] However, use of treated wastewater to irrigate landscaping can lead to potentially harmful accumulation of salts in soil. Therefore, the amount of irrigation needed at the SIO campus is being reduced through conversion of landscaping to plants with low water usage, including coastal sage scrub vegetation [Ingram, 2008].

The Energy Independence and Security Act of 2007 contains performance requirements for Federal buildings. The Act sets a goal of 30% reduction in energy use, compared with 2005 consumption, for Federal buildings. This goal is to be achieved by 2015. One method for reducing energy use and increasing energy efficiency is incorporation of LEED principles into building design.

Standards of Significance. Would implementation of the proposed action or no-action alternative result in a substantial impact to public services or compromise the ability of service providers to maintain acceptable service ratios, response times, or other performance objectives?

Would implementation of the proposed action or no-action alternative result in increased consumption of electricity, natural gas, or water, or increased generation of wastewater that would exceed the capacity of service providers or result in a need to expand or construct substantial new generation, transportation, or treatment facilities?

Would implementation of the proposed action or no-action alternative require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Would implementation of the proposed action or no-action alternative result in insufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Would implementation of the proposed action or no-action alternative result in failure to comply with Federal, State, and Local statutes and regulations related to solid waste?

Would implementation of the proposed action or no-action alternative require or result in construction or expansion of electrical, natural gas, chilled water, or steam facilities or result in wasteful, inefficient, or unnecessary use of energy?

Would implementation of the proposed action or no-action alternative require or result in the construction or expansion of the telecommunications facilities?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative public services impact considering past, present, and probable future projects?

4.13.2 Impact—Proposed Action

Impact 1—Increase in Employment and Effects on Demand for Schools, Water

Consumption, and Sewage Generation. The number of employees working at SWFSC would stay the same in the short-term and may increase by 17 employees, or 6%, in the long-term. SIO may occupy Buildings A and D at the existing SWFSC after NOAA relocates staff to the new SWFSC building. SIO staff occupying Buildings A and D would include staff relocated from elsewhere on the SIO campus to alleviate overcrowding and new SIO hires representing a slight increase (for example, 22 new SIO staff) in overall campus employment or population. A modest economic stimulus to the local economy would result from construction and demolition expenditures, which would be temporary and small compared with the size of the local economy. Little change in the local population would result, and changes in demand for police services and enrollment in local public schools would be negligible. Similarly,

Consumption of water would be unchanged and generation of wastewater would be unchanged/minimal. The SWFSC would generate wastewater from domestic uses (for example, toilets and sinks) and from ACTT operations. The number of staff working at the SWFSC would not change significantly from existing; therefore the amount of domestic wastewater generated and discharged to the city sewage system would not change significantly from existing. The ACTT would be a new feature and discharges of seawater from the tank would represent a new flow to the city sewage system. To comply with requirements of the City of San Diego Metropolitan Wastewater Department, NOAA would meter the volume and flow rate of wastewater discharged from the ACTT to the city sewage system and pay the appropriate sewage fees based on amount of flow. NOAA would also time ACTT discharges to avoid periods of peak flow to the city sewage system. Effects on public services, water supplies, and wastewater treatment capacity would be less than significant.

Impact 2—Effects on Demand for Police and Fire Protection Services. The City of San Diego would be expected to provide police and fire protection services for the new SWFSC. Relocation of SWFSC to the preferred site would result in a modest increase in floor space compared with the existing SWFSC. About 100,000 sq. ft. of floor space is present at the existing SWFSC and the new SWFSC would have about 124,000 sq. ft. of floor space. About 40,000 sq. ft. of floor space would be removed by demolition of Buildings B and C, resulting in a net increase of about 84,000 sq. ft. of floor space requiring police and fire protection services. However, the new SWFSC would conform to current life safety, seismic safety, and fire protection codes contained in the 2007 California Building Code, which would be an improvement over the structures to be replaced. Increase in demand for police and fire services would be mitigated by adherence to the current codes, which contain requirements for fire prevention, notification of occupants, and fire resistant design and construction measures. According to the UCSD 2004 LRDP EIR, proposed campus-wide improvements are not expected to increase demand at the multiple fire stations that serve the campus to a level that would require new facilities or substantial alterations to existing facilities [UCSD, 2004a]. The minor increase in floor space resulting from construction of the new SWFSC would be a small fraction of the amount of floor space envisioned in the LRDP and would not result in a need to construct new police or fire stations, expand existing stations, or add police or fire-protection staff. The proposed action would not contribute to a cumulatively considerable impact to public services.

Impact 3—Consumption of Energy and Fuels. SDG&E would provide electric and gas service to the new SWFSC, which would be designed in conformance with LEED principles to increase energy efficiency and reduce consumption of electricity and natural gas. The building would be designed and constructed to achieve LEED Silver status, which would help in meeting the goal contained in the Energy Independence and Security Act of 2007. Because electric and gas consumption are expected to be no greater compared with existing consumption, there would be no need to increase electric generation capacity or expand natural gas transmission capacity. Impacts to energy supplies would be less than significant.

4.13.3 Mitigation—Proposed Action

Ser-1 NOAA would submit design plans for the new SWFSC to the UCSD Fire Marshal for review and comment, and would revise the plans if feasible to address comments received from the Fire Marshal. (*Impact 2*)

Ser-2 NOAA would install a meter measuring volume and flow rate on the sewage line conveying wastewater discharged from the ACTT to the city sewage system and pay appropriate fees to the City. NOAA would coordinate with the Metropolitan Wastewater Department concerning the timing of discharges of wastewater from the ACTT to avoid periods of peak flow to the city sewage system.

4.13.4 Impact—No-Action Alternative

No construction or demolition would occur. No change in population or demand for public services, including education, police, and fire protection services, would result. Consumption of water, electricity, and natural gas and generation of wastewater would be unchanged. Impacts to public services and utilities would be less than significant.

4.13.5 Mitigation—No-Action Alternative

None required.

4.14 POPULATION AND HOUSING

4.14.1 Setting

The existing SWFSC site and the preferred site for relocation of SWFSC are both on the campus of UCSD/SIO, within the community of La Jolla, which is part of the City of San Diego. San Diego is within San Diego County. Based on the 2000 U.S. Census, San Diego County has a total population of 2,813,833 persons living in 994,677 households. The existing and preferred sites are in Census Tract 83.12, which includes the UCSD/SIO campus and residential areas to the north and south of the campus. The Tract had a population of 3,890 persons residing in 473 households in Year 2000. There are no housing units at the existing SWFSC site or the preferred site. Total employment in the County and Tract were 1,328,893 and 1,719, respectively, in Year 2000.

Standards of Significance. Would implementation of the proposed action or no-action alternative directly or indirectly induce substantial population growth in the area?

Would implementation of the proposed action or no-action alternative displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere?

Would implementation of the proposed action or no-action alternative have a cumulatively considerable contribution to a cumulative population and housing impact, considering past, present, and probable future projects?

Would implementation of the proposed action or no-action alternative impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

4.14.2 Impact—Proposed Action

Impact 1—Impacts to Population Growth and Housing Demand. Relocation of SWFSC to the preferred site would not result in removal of existing housing units or creation of new housing. Employment at SWFSC would be unchanged as a result of the relocation. The new SWFSC would be designed to accommodate up to 17 additional employees, which would result in a 6% increase in employment at SWFSC. This increase in employment would occur in the long-term and would be insignificant compared with total employment in the County and Tract.

The existing and preferred sites are very close to one another and current SWFSC employees would not have to change their residence to work at the new SWFSC. Based on average household size in the County of 2.83, 17 new employees would have families comprising 48 persons. Even if all of these employees and their families were new to the area, the influx of 48 persons would not significantly affect the population of La Jolla, San Diego City, or the County. Increased demand for housing would be less than significant.

The proposed action would relocate the work spaces for about 283 existing SWFSC workers about 400 ft. across La Jolla Shores Drive to a new building and potentially accommodate a 6% increase in workers in the long-term. No substantial change in the population of the area would result. Construction of the new SWFSC facility would not be expected to obstruct local evacuation routes or interfere with the ability of emergency service providers to respond to incidents. However, it is possible that closures of roads or travel lanes may be required for short periods during construction of the new SWFSC. The UCSD Fire Marshal would be notified in advance of the road or lane closure to ensure that it does not hinder access by emergency service providers. Impacts to population and housing would be less than significant.

4.14.3 Mitigation—Proposed Action

Pop-1 In the event that the construction of the SWFSC requires closure of a road or traffic lane, NOAA would notify the UCSD Fire Marshal of the planned closure. If determined necessary by the UCSD Fire Marshal, local emergency service providers would be notified by the Fire Marshal of the closure. (*Impact 1*)

4.14.4 Impact—No-Action Alternative

SWFSC would not be relocated to the preferred site. SWFSC operations would continue to occur at the existing site in La Jolla. The number of employees working at SWFSC would not be expected to change. No impacts to population or local demand for housing would result.

4.14.5 Mitigation—No-Action Alternative

None required.

4.15 SOLID WASTE AND HAZARDOUS MATERIALS

4.15.1 Setting

SWFSC stores and uses a variety of hazardous materials in its operations, including compressed air, carbon dioxide, diesel fuel, helium gas, isopropyl alcohol, nitrogen, oxygen, photo processing fixer, ethidium bromide waste, and laboratory waste chemicals. San Diego County monitors the use, storage, disposal, or recycling of these materials and conducts periodic inspection of SWFSC. One underground storage tank for oil, with a capacity of 2,500 gallons, is present at the existing SWFSC. Solid waste at the existing SWFSC site is collected for off-site disposal. SRI International prepared a Phase 1 Environmental Site Assessment of the existing and preferred sites in conformance with American Society for Testing and Materials Standard 1527-05 [SRI International, 2006].

A professional inspection was performed at the existing SWFSC site to determine the presence of ACMs, LBP, and polychlorinated biphenyls (PCBs). The findings and recommendations are summarized below.

- ACMs were identified in various building components at the existing SWFSC.
- Several surfaces within buildings at the existing SWFSC site were found to contain LBP with lead concentrations exceeding thresholds adopted by the Department of Housing and Urban Development and California Department of Health Services.
- PCBs were not found at the existing SWFSC site.

No evidence was uncovered of current or past disposal of hazardous or solid wastes at the preferred SWFSC site. No buildings or other structures are present at the preferred site and there is little potential for ACMs, LBP, PCBs, or other hazardous materials to be present at the site. Therefore, contaminated soil or groundwater or deposits of solid or hazardous waste does not exist at the proposed site.

Standards of Significance. Would implementation of the proposed action or no-action alternative result in a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials?

Would implementation of the proposed action or no-action alternative result in the release of hazardous materials into the environment through reasonably foreseeable accidents?

Would implementation of the proposed action or no-action alternative emit hazardous emissions or handle hazardous materials within one-quarter mile of an existing or proposed school?

Would implementation of the proposed action or no-action alternative result in activities on a listed hazardous materials site creating a significant hazard to the public or environment?

Would implementation of the proposed action or no-action alternative impair implementation of or physically impair an adopted emergency response plan or emergency evacuation plan?

Would implementation of the proposed action or no-action alternative expose people or structures to a significant risk of loss, injury, or death involving wildland fires?

Would implementation of the proposed action or no-action alternative be served by a landfill with insufficient capacity to accommodate solid waste disposal needs?

Would implementation of the proposed action or no-action alternative have cumulatively considerable contribution to cumulative hazards and hazardous materials impact considering past, present, and probable future projects?

4.15.2 Impact—Proposed Action

Impact 1—Generation of Solid/Hazardous Waste by Construction Activities. Construction of the new SWFSC would generate solid wastes typical of commercial or institutional construction, including scraps of lumber, piping, wiring, sheetrock, glass, metal, and so on. Waste materials will be collected for off-site transport and recycling or disposal. Impacts to solid waste and hazardous materials during SWFSC operations would be less than significant.

Impact 2—Generation of Solid/Hazardous Waste during SWFSC Operation. Operation of the new SWFSC would generate solid and hazardous wastes that are similar in composition and volume to the waste stream currently generated by the existing SWFSC. Like today's waste, future waste would be removed from the site for recycling or proper disposal. The facility will dispose of hazardous materials, such as those generated from the facility's laboratories, following regulations of U.S. EPA and California Department of Toxic Substances Control (see Appendix A in Volume II). Impacts to solid waste and hazardous materials during SWFSC operations would be less than significant.

Impact 3—Generation of Solid/Hazardous Waste by Demolition Activities. The Casper Company prepared a Demolition Work Plan for dismantling and removal of Buildings B and C at SWFSC [Casper Company, 2005]. Demolition of the two SWFSC buildings would proceed in stages. ACM and LBP would be identified and removed prior to dismantlement of Buildings B and C. These hazardous materials would be transported off-site for recycling or proper disposal. The demolition work plan specifies the following phases:

1. Soft Interior Demolition—Remove carpets, tiles, ceiling systems, and millwork; remove and separate insulation and air ducts.
2. Soft Exterior Demolition—Remove air conditioning units, exterior metal grating, and roofing materials; remove and process organic materials and glass.
3. Hazardous Material Abatement Interior—Remove ACM and LBP.
4. Hard Demolition Interior—Remove and separate interior materials down to shell and establish unobstructed access.
5. Hard Demolition Exterior—Demolish buildings and foundations; separate rebar for recycling and process concrete to 2 ft. maximum pieces; excavate and remove caissons to 5 ft. below grade; use spoils to backfill excavations.

Large amounts of solid waste would also be generated during demolition activities. Those wastes will be transported to the following landfills and recycling centers:

- Vulcan Materials San Diego
- Lakeside Landfill
- Pacific Steel
- Miramar Landfill
- Miramar Recycling

Solid wastes would be recycled to the maximum extent practical and hazardous wastes would be removed for off-site disposal at a licensed disposal facility. The existing and preferred sites are not designated as hazardous material sites. There are no public schools or airports within two miles of the sites. The hazard of wildland fire exists at both the preferred and existing sites. Relocation of SWFSC to the preferred site would not increase wildland fire hazards or impair emergency evacuations or response plans. Impacts to solid waste and hazardous materials during demolition activities would be less than significant.

4.15.3 Mitigation—Proposed Action

- SW-1 Removal of ACMs during demolition of Buildings B and C would be performed by an asbestos abatement contractor licensed by the California Division of Safety and Health. Removal of ACMs conforms to applicable regulations of the Division. (*Impact 3*)
- SW-2 Loose and peeling LBP of Buildings B and C would be removed and remaining paint stabilized prior to demolition activity. (*Impact 3*)

4.15.4 Impact—No-Action Alternative

No construction or demolition activities would occur. No new waste streams would be created and no change in the rate of solid and hazardous waste generation during operation of SWFSC would result.

4.15.5 Mitigation—No-Action Alternative

None required.

4.16 WILD AND SCENIC RIVERS

4.16.1 Setting

The Wild and Scenic Rivers Act of 1968 protects free flowing rivers of the U.S. These rivers are protected under the Act by prohibiting water resource projects from adversely impacting values of the river: protecting outstanding natural, cultural, or recreational values; maintaining water quality; and implementing river management plans for these specific rivers. The nearest river protected under the Wild and Scenic Rivers Act of 1968 is Sespe Creek, located approximately 160 miles north from the proposed project [National Wild and Scenic Rivers System, 2008].

4.16.2 Impact—Proposed Action

Due to its distance to Sespe Creek, implementation of the proposed project will have no impact on Sespe Creek or any other designated wild and scenic rivers.

4.16.3 Mitigation—Proposed Action

Since there are no impacts to Sespe Creek or any other wild and scenic rivers, no mitigation measures are warranted.

4.16.4 Impact—No-Action Alternative

Under the no-action alternative, proposed construction of the new SWFSC building would not occur. Therefore, there would be no impacts to wild and scenic rivers from the no-action alternative.

4.16.5 Mitigation—No-Action Alternative

None required.

5 OTHER CEQA AND NEPA CONSIDERATIONS

5.1 GROWTH-INDUCING IMPACTS

5.1.1 Proposed Action

Construction of the new SWFSC and demolition of Buildings B and C at the existing SWFSC site would not increase the demand for construction or demolition workers in the area. Many construction projects already occur on the University (and are planned to occur in the future, as anticipated in the UCSD 2004 LRDP) and within the County of San Diego. Therefore, the proposed action's construction and demolition phases would not foster population growth.

Relocation of SWFSC to the preferred site would have little direct economic impact. The cost to construct and furnish the new SWFSC facility, move SWFSC occupants and equipment into the new building, and demolish and remove Buildings B and C at the existing site are estimated at \$78.9 million in current dollars [Feiner, 2008]. These expenditures would provide an economic boost to the local economy. The expenditures would be spread over a period of at least three years; therefore, average annual expenditures during the construction and demolition periods would be about \$26.3 million per year in current dollars. Based on U.S. Census statistics for 2000, the annual gross domestic product of San Diego County was about \$62.7 billion. Thus, the new economic activity generated by relocation of SWFSC to the preferred site would represent a 0.04% increase in economic activity in the County. The multiplier effect would increase the level of benefit as suppliers and workers would respense their revenues and salaries at local businesses. Even considering the multiplier effect, expenditures by NOAA for constructing and furnishing the new SWFSC, moving into the new structure, and demolition of Buildings B and C, would be less than significant.

The new SWFSC, if constructed at the preferred site, would be located a short distance from the existing SWFSC and would operate with about the same number of employees. With a small increase in staff (17 new staff) at the new SWFSC projected in the future, impacts to population growth from the operation of the new SWFSC would be less than significant.

Operation of the new Center would not generate new demand (that is, in addition to ongoing existing expenditures) for ancillary and support services and would not be expected to change the patterns of expenditures by the Government or employees. The new SWFSC would continue to perform the same scientific research activities as it currently does, and operation at the preferred site would not result in increased economic stimulus or induce substantial economic growth in the local area.

UCSD/SIO and SWFSC collaborate in performing scientific research. The synergy provided by the cooperation between the two organizations promotes the conduct of fisheries and oceanographic science in the San Diego area. Undoubtedly, the local economy benefits from the presence of a robust scientific community, which attracts highly educated and skilled persons to the area and promotes development of new businesses. This cooperation would continue and the indirect benefits to the local economy from a scientific nucleus would continue into the future.

5.1.2 No-Action Alternative

Under the no-action alternative, no construction or demolition would occur and construction/demolition expenditures would not boost the local economy. Buildings B and C at the existing site are being vacated and the staff and operations moved to temporary leased space in La Jolla. If the entire operations of SWFSC were moved to leased space for 30 years, the net present value of lease payments is estimated at \$243.11 million [Feiner, 2008], an average of \$8.1 million per year. These lease payments would represent less than 0.02% of the annual gross domestic product of San Diego County. The resulting economic boost would be insignificant and would not induce substantial growth in the local area.

5.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

The following environmental impacts would result from implementation of the proposed action or no-action alternative and would be significant, even after application of mitigation measures identified in this EIS/EIR.

5.2.1 Proposed Action

During the construction of the new SWSFC, equipment and vehicles would emit significant amounts of NO_x (an ozone precursor) within a Federally designated ozone non-attainment area, requiring preparation of a Federal conformity determination

5.2.2 No-Action Alternative

Buildings B and C would remain at the existing SWFSC and would represent a hazard to persons in the vicinity due to the potential for catastrophic failure of the coastal bluff on which these buildings are situated.

5.3 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

5.3.1 Proposed Action

Construction of the new SWFSC would use a considerable amount of building materials. Construction equipment, supply trucks, and the like, would consume gasoline and diesel fuels. These resources would be irreversibly consumed during the construction of the new SWFSC.

Demolition of Buildings B and C at the existing site would also irreversibly consume gasoline and diesel fuel. To the maximum extent possible, materials removed during demolition action would be recycled. The demolition plan calls for separation from general debris and recycling of the following materials: steel, glass, ceramics, and organic material.

The preferred site is a 3.3-acre undeveloped parcel containing 1.63 acres of coastal sage scrub vegetation and 0.73 acre of disturbed habitat. Construction of SWFSC would result in permanent removal of this undisturbed and disturbed habitat. To mitigate this habitat loss, NOAA and UCSD will implement the requirement of the UCSD 2004 LRDP EIR and preserve an area of coastal scrub shrub vegetation on campus equal to twice the area of habitat removed. The ecological value of the preserved area will replace the lost value at the SWFSC preferred site, thereby mitigating the irreversible removal of habitat.

The new SWFSC would be about 24% larger in gross floor space than the existing Center. However, it would be designed and constructed in conformance with LEED principles to promote efficiency in energy and water use. It is expected that the new SWFSC will consume

less energy and domestic water than the existing Center. ~~The new SWFSC would also generate less wastewater.~~ BMPs would be incorporated to retain storm runoff water on-site, mitigating the increase in runoff rates caused by development of the 3.3-acre site. Because the new Center would be very near the existing Center, the length of commute, delivery, and visitor vehicle trips would not change compared with the present. The staff employed at the Center would remain about the same, therefore the number of vehicle trips would not change. Compared with current use, consumption of gasoline and diesel fuel for transportation uses would not change during operation of the new SWFSC.

5.3.2 No-Action Alternative

The no-action alternative would not result in commitment of resources (for example, building materials and fuel) for construction of a new SWFSC. However, the existing Center will not be usable in the long-term; thus, SWFSC operation would either be moved to leased space or collocated with other NOAA facilities on the west coast of the U.S. In either case, SWFSC staff would be located farther from UCSD and the research ships docked at SIO. It is likely that SWFSC would occupy floor space similar to current floor space, and consumption of building energy and domestic water would be similar to current consumption. However, travel by SWFSC staff may increase, with a resulting increase in transportation fuel use.

5.4 SHORT-TERM AND LONG-TERM ENVIRONMENTAL GOALS

5.4.1 Proposed Action

The proposed action would further the short-term environmental goals of both NOAA and UCSD by providing a replacement facility for the existing SWFSC that is not subject to the geologic hazards threatening the existing facility. Less than significant environmental effects in the areas of traffic, noise, vibration, and air emissions would result in the short-term (that is, during the construction period for the new facility and demolition of Buildings B and C). The effects would be mitigated through application of measures consistent with the UCSD 2004 LRDP EIR. In the long-term, the proposed action would incorporate LEED design standards and sustainability features to minimize energy consumption and environmental impacts on the surrounding environment. Examples of sustainability features include a partial green roof, solar panels, and storm water retention areas on-site. The sustainability features built into the proposed SWFSC facility would be consistent with long-range environmental goals of NOAA and UCSD. Thus, the proposed action would achieve both long-term and short-term environmental goals and would not achieve one at the expense of the other.

5.4.2 No-Action Alternative

The no-action alternative would not achieve the purposes and objectives of NOAA and UCSD. Buildings B and C at the existing SWFSC would not be demolished and would remain unoccupied. In the short-term, southwest fisheries research conducted by NOAA would suffer from the division of staff among Buildings A and D and relatively distant leased office and research space. This arrangement is inefficient and hinders the ability of NOAA to conduct fisheries research and to collaborate with UCSD/SIO researchers. Compared with the proposed action, the no-action alternative would avoid the short-term environmental effects that would result from construction of the new SWFSC facility and demolition of Buildings B and C. However, those impacts would be mitigated to less than significant levels if the proposed action

is implemented. In the long-term, Buildings B and C would remain a threat to the beach at the base of the bluff, which could be impacted by slope failure causing structural materials to slide onto the beach. Additionally, continued use of Buildings A and D at the existing SWFSC facility (without seismic and code upgrades) would not further the long-range goal of environmentally sustainable development and work places established by NOAA and UCSD. Thus, the no-action alternative would not achieve long-term environmental goals.

6 CUMULATIVE IMPACTS

6.1 PROPOSED ACTION

Cumulative impacts are changes in the environment that result from the combined effects of the proposed action or alternatives and other past, present, and reasonably foreseeable future (that is, probable) actions, no matter which agencies implement the action. For purposes of this EIS/EIR, the environmental setting describes the environmental effects of past human actions. In most topic areas addressed in this EIS/EIR, build-out of the UCSD 2004 LRDP is the basis for identifying foreseeable future development activity within the local area which would be affected by implementation of the proposed action or alternatives. For the transportation analysis, cumulative traffic levels are derived by adding traffic generated by the proposed action to projections of local traffic levels in 2030 prepared by the Association of San Diego Area Governments. Cumulative impacts are addressed in each topic area in Section 4 herein. The proposed action would result in the following considerable environmental effects that would be cumulatively significant:

- Emissions of NO_x, an ozone precursor, in a Federally designated non-attainment area for ozone during construction of the new SWFSC

This EIS/EIR includes measures that would mitigate this cumulative effect, but those measures would not be expected to reduce impact levels below standards of significance.

6.2 NO-ACTION ALTERNATIVE

Implementation of the no-action alternative would result in minimal environmental effects. The most substantial impact would be the ongoing hazard to the beach west of the existing SWFSC site due to the presence of Buildings B and C at the crest of the unstable, eroding bluff. That hazard would be a potentially significant individual impact, but it would not add to a cumulative significant impact caused by past, present, or probable future projects.

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7 CONCLUSION

This section lists significant environmental impacts that would result from implementation of the proposed action or no-action alternative and would be either unavoidable or irreversible. NEPA and CEQA regulations require this consideration.

7.1 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS—PROPOSED ACTION

- Construction-period emissions of significant amounts of NO_x (an ozone precursor) within a Federally designated ozone non-attainment area, requiring preparation of a Federal conformity determination.

7.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS—PROPOSED ACTION

- Removal of 1.71 acres of undisturbed and disturbed Diegan scrub shrub vegetation at the preferred site, which will add to cumulative reduction of this vegetation community in the San Diego area. The cumulative effect would be offset by the permanent preservation of Diegan scrub shrub habitat at Skeleton Canyon on the UCSD campus.
- Consumption of building materials and fuels during construction of the new SWFSC and demolition of existing Buildings B and C.

7.3 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS—NO-ACTION ALTERNATIVE

- Ongoing potential for catastrophic slope failure to deposit debris from Buildings B and C onto the beach.

7.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS—NO-ACTION ALTERNATIVE

- None.

7.5 ENVIRONMENTALLY SUPERIOR ACTION

Based on the impact analysis contained in this EIS/EIR, the no-action alternative is the environmentally superior alternative. Considering alternatives other than the no-action alternative, the proposed action is the environmentally superior alternative.

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