

CHAPTER 5

MITIGATION MONITORING PROGRAM

CEQA requires that a Lead Agency establish a program to monitor and report on measures adopted as part of the environmental review process to mitigate or avoid significant effects on the environment. This Mitigation Monitoring Program (MMP) is designed to ensure implementation of the mitigation measures identified in the UC Santa Cruz Marine Science Campus CLRDP EIR and measures included in the CLRDP to avoid or minimize environmental effects of the development envisioned in the CLRDP.

The CLRDP MMP, as outlined in Table 5-1, describes monitoring and reporting procedures, monitoring responsibilities, and monitoring schedules for mitigation measures identified in the EIR analysis of the environmental effects of the CLRDP as a whole, as well as the measures included in the CLRDP to avoid or minimize environmental effects. Table 5-1 is divided into two sections: Part A describes procedures for the EIR mitigation measures; Part B covers the CLRDP measures.

Table 5-2 presents the MMP for the Shared Campus Warehouse and Laydown Facility and lists the project-level mitigation measures identified in the EIR for this project along with the monitoring and reporting procedures, monitoring responsibilities, and monitoring schedules. Table 5-3 presents the MMP for the USGS Western Coastal and Marine Geology Facility. The 42 Apartment/Townhouse Units, the SORACC, and the Center for Ocean Health Phase II projects do not require project-level mitigation measures therefore no MMPs for these projects are included. Note that many of the measures listed in Table 5-1 are applicable to all of the five near-term projects. These measures are not listed in the project-level MMPs but will be implemented and monitored during development of these projects.

A variety of campus entities have been assigned monitoring responsibilities under this MMP. All monitoring actions, once completed, would be reported (in writing) to UC Santa Cruz Physical Planning and Construction, which would maintain mitigation monitoring records for the proposed project. The MMP will be considered by The Regents in conjunction with project review and will be included as a condition of project approval.

The components of this table are addressed briefly below:

Mitigation Measures: The mitigation measures in the MMPs are taken verbatim from the Final EIR, and the numbers assigned the mitigation measures are the same as those presented in the Final EIR.

CLRDP Measures: Individual CLRDP policies and implementation measures in the MMP are taken verbatim from the CLRDP, and the numbers assigned the mitigation measures are the same as those presented in the CLRDP. Other CLRDP measures in the MMP, such as the Stormwater Concept Plan, Resource Management Plan, and the Design Guidelines, are summarized.

General versus Project-Specific Measures: Specifies whether the mitigation measure or CLRDP element applies to the development of the Marine Science Campus under the CLRDP as a whole, or to the development of individual projects.

Mitigation Timing: Identifies the timing for implementation of each action. Each entry in the table begins with a two-letter code. These codes indicate when the mitigation measure must be implemented in the typical project cycle in order to effectively accomplish the intended outcome. The meaning of these codes is as follow:

SS – During site selection

DE – During detailed project planning or project design prior to project approval

CO – Prior to or during construction

OC – Prior to occupancy

OP – During operation

OT – Other

Monitoring and Reporting Responsibility: Identifies the UCSC office responsible for undertaking the required action and monitoring the measure.

**TABLE 5-1
COASTAL LONG RANGE DEVELOPMENT PLAN
MITIGATION MONITORING PROGRAM
PART A: EIR MITIGATIONS**

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²	Monitoring and Reporting Responsibility	
<i>Agricultural Resources</i>						
4.2-1	G	<ul style="list-style-type: none"> UCSC will install a four-foot-high landscaped fence along the Younger Ranch property line that will extend from the bend in the existing access road, northward along the property line. The fence will be sited and constructed to have a uniform gap of 16 inches between a smooth wire defining the bottom of the fence and the ground. This will assure that wildlife passage can continue to occur through the fence. UCSC will install tree and shrub landscaping approximately 25 feet inside the fence (to minimize shading effects on Younger Ranch crops), consisting of an indigenous, drought-resistant mosaic of mid-level shrubs and taller trees to help dissipate dust generation from the west. Tree and shrub choices will be made in conjunction with the landscape architect experienced in the use of native plants and vegetation. Trees and shrubs will be selected for non-invasive character. Native blackberries are recommended, as they would serve as an access barrier. UCSC will install the fence and landscaping prior to groundbreaking of any CLRDP project components. 	<p>Install fence and landscaping.</p> <p>Document that fence and landscaping have been installed consistent with requirements in the mitigation measure.</p>	<p>CO</p> <p>CO</p>	<p>Prior to ground-breaking of any CLRDP project components</p> <p>Prior to construction</p>	<p>Physical Planning and Construction</p> <p>Physical Planning and Construction</p>

¹ G = general campus measure; not tied to individual projects; PS = project-specific

² Project stage at which implementation of the measure is required: PP = project planning; SS = during site selection; DE = during detailed project planning or project design prior to project approval; CO = prior to or during construction; OC = prior to occupancy; OP = during operation; OT = other

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
<i>Air Quality</i>						
4.3-1	PS	<p>The University shall require construction contractors to implement a dust abatement program to reduce the contribution of project construction to local respirable particulate matter concentrations. Elements of this program shall include the following as appropriate for each project:</p> <ul style="list-style-type: none"> • Water all active construction areas at least twice daily. Frequency shall be based on the type of operation, soil, and wind exposure. • Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). • Pave, apply water two times daily, or apply non-toxic soil stabilizers to all unpaved access roads, parking areas, and construction staging areas. • Sweep daily with water sweepers any paved access roads, parking areas, and staging areas at construction sites. • Sweep streets daily with water sweepers if visible soil material is carried onto adjacent public streets. • Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas or previously graded areas left inactive for ten days or more. • Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.). • Limit traffic speeds on unpaved roads to 15 miles per hour. 	<p>Include standard dust control measures as part of every construction project contract.</p> <p>Inspect construction site at regular intervals during construction to verify compliance with specified dust control measures.</p>	DE	Prior to construction	Physical Planning and Construction
				CO	Weekly during construction	Physical Planning and Construction

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		<ul style="list-style-type: none"> • Install sandbags or other erosion control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible. • In the event that grading and excavation at two or more large project sites is proposed to occur concurrently (large sites defined as involving more than 2 acres), install wheel washers at the entrance of the construction sites. • Phase construction projects in such a manner that minimizes the area of surface disturbance (e.g., grading, excavation) and the number of vehicle trips on unpaved surfaces. 				
Biological Resources						
4.4-1	PS	<p>For all projects proposed in the upper terrace under the CLRDP, the University will implement the following:</p> <ul style="list-style-type: none"> • A preconstruction survey for CRLF will be conducted of all areas proposed for grading and construction by a qualified biologist, approved by the USFWS. If CRLF are observed, grading activities shall be postponed and USFWS shall be consulted to determine appropriate actions to avoid impact. Consultation with the USFWS will result in either a determination of the need to obtain a permit or in the identification of measures to avoid take of the individual(s). <p>The biological monitor shall also conduct meetings with the contractor(s) and other key construction personnel to describe the importance of the species, the need to restrict work to designated areas, and to discuss procedures for avoiding harm or harassment of wildlife encountered during construction.</p>	<p>Conduct survey. Document results.</p> <p>If CRLF are observed, consult with USFWS.</p> <p>Conduct meetings with contractor(s) and construction personnel. Include mitigation specifications in construction contract.</p>	CO	<p>Prior to construction, of projects in upper terrace</p> <p>Prior to construction, if CRLF are observed</p> <p>Before beginning construction</p>	<p>Physical Planning and Construction</p> <p>Physical Planning and Construction</p> <p>Physical Planning and Construction</p>

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
4.4-2 ³	PS	<p>UCSC shall ensure that construction activities avoid disturbing nests of raptors (and other special-status birds). If ground-disturbing activities are scheduled to occur during the breeding season (February 1 through August 31), the following measures are required to avoid potential adverse effects on nesting special-status raptors and other birds:</p> <ul style="list-style-type: none"> • A qualified wildlife biologist will conduct preconstruction surveys of all potential nesting habitat. For burrowing owls, such surveys will follow the most recent CDFG <i>Burrowing Owl Survey Protocol and Mitigation Guidelines</i>. • If active raptor nests are found during preconstruction surveys, a no-disturbance buffer acceptable in size to CDFG will be created around active raptor nests and nests of any other special-status birds during the breeding season, and maintained until it is determined that all young have fledged. Raptor or other bird nests initiated during construction are presumed to be unaffected, and no buffer is necessary. However, the “take” of any individuals will be prohibited. • If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction/restoration period, no further mitigation is required. Trees and shrubs that have been determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed. 	<p>Conduct survey. Document results.</p> <p>Create no-disturbance buffer in consultation with qualified biologist. Include mitigation specifications in construction contract.</p>	CO	<p>Before beginning construction on each project</p> <p>Before beginning construction, if active raptor nests are found</p>	<p>Physical Planning and Construction</p> <p>Physical Planning and Construction</p>

³ Applicable in upper, middle and lower terrace areas.

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
4.4-3 ⁴	PS	<p>UCSC will ensure that construction/operation activities avoid disturbing nests of black swift. If construction activities are scheduled to occur during the breeding season (June 1 through September 30), the following measures will be implemented to avoid potential adverse effects:</p> <ul style="list-style-type: none"> UCSC will conduct pre-construction surveys to determine presence of active black swift nests within the project area. Published literature suggests that the optimal survey time is the final two hours of daylight, when chick provisioning rates may increase and adults are returning to the colony to roost. Targeting surveys for the last hours of daylight should also maximize the probability of counting breeding as opposed to nonresident foraging individuals. If active nests are found during preconstruction surveys, UCSC will delay construction until after fledging occurs. If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied, no further mitigation is required. 	<p>Conduct survey. Document results.</p> <p>Delay construction until after fledging occurs.</p>	CO	Before beginning construction of seawater system facilities, if construction scheduled during breeding season	Physical Planning and Construction
Cultural Resources						
4.5-1	PS	<p>If human remains are discovered during the construction of a development project under the CLRDP, the University and/or its employees shall notify the Santa Cruz County Coroner's Office immediately. Upon determination by the County Coroner that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission, pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and the County Coordinator of Indian Affairs and appropriate Native American consultation shall be conducted, as outlined by PRC 5097.98. Implementation</p>	<p>Include in construction contract the requirement that the University be notified if suspected human bone is discovered.</p> <p>Contact archaeologist and County Coroner in the event of discovery of suspected human bone. Contact California Native American Heritage Commission and</p>	CO	Before beginning construction	Physical Planning and Construction
				CO	During construction	Physical Planning and Construction

⁴ Applicable only in lower terrace area.

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		Measure 3.9.1, Construction Monitoring, as identified in the CLRDP, shall also apply. UCSC will be responsible for implementing this mitigation measure.	conduct Native American consultation if Coroner determines the remains are Native American.			
Hazards and Hazardous Materials						
4.7-1	PS	<p>For projects proposed by non-UC entities on campus that involve laboratories, non-UC entities shall be required, through contracts and agreements, to implement programs and controls that provide the same level of protection required of campus laboratories and departments.</p> <ul style="list-style-type: none"> • Non-UC entities shall provide to campus EH&S copies of all required environmental reports to local, state, and federal environmental and safety regulators. • Non-UC entities shall submit the qualifications of designated laboratory directors to UC Santa Cruz EH&S Office prior to commencing laboratory operations. Such documentation shall be in the form of educational and professional qualifications/ experience. • Non-UC entities shall submit a copy of applicable regulatory environmental documents prior to commencing on-site research. Applicable documents may include a Hazardous Materials Business Plan, an EPA Hazardous Waste Generator ID Number, a Wastewater Discharge Permit, and air permits regulating fume hood exhaust or emissions from other equipment. Copies of revisions or updates to regulatory documents shall be submitted to EH&S in a timely manner. • Non-UC entities shall submit certification of compliance with NIH biosafety principles to the UC Santa Cruz EH&S Office prior to commencing on-site research or pilot plant manufacturing activities. Non-UC entities shall submit copies of 	<p>Include stipulated requirements in contract or agreement.</p> <p>Require and verify receipt of required documentation.</p> <p>Request revised or updated documents.</p>	DE	Prior to project approval	Business and Administrative Services, and Environmental Health and Safety
				OP	Annually, during occupancy	Environmental Health and Safety

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		completed medical waste management plans, biosafety management plans, inventories of infectious or genetically modified agents, applicable permits and updates.				
<i>Noise</i>						
4.11-1	PS	Prior to developing marine research and education facilities on the middle terrace east of McAllister Way, or additional support housing on the upper terrace, the University shall conduct a project-specific noise analysis. Project-level mitigation measures shall be incorporated into the design of these facilities to reduce potentially significant noise impacts, if necessary.	Conduct noise analysis. Incorporate project-level mitigation measures into project design.	SS DE	During site selection During project design	Physical Planning and Construction Physical Planning and Construction
4.11-4	G/PS	Prior to the initiation of construction, the University shall approve a construction noise mitigation program including but not limited to the following: <ul style="list-style-type: none"> The University shall require that construction activities be limited to a schedule that minimizes disruption to noise-sensitive uses on the project site and in the vicinity through implementation of the following: <ul style="list-style-type: none"> Construction activities during daytime and evening hours (7:00 AM to 10:00 PM) shall not occur within 150 feet of sensitive receptors, when feasible. Construction activities within 500 feet of sensitive receptors activities shall not occur during nighttime hours (10:00 PM to 7:00 AM). Whenever possible, academic and administrative staff, as well as residents who will be subject to construction noise, shall be informed one week before the start of each construction project. Loud construction activity as described above within 150 feet of an academic or residential use shall, to the extent feasible, be scheduled during holidays, spring break, or summer break. 	Develop construction noise mitigation program and adopt as part of standard construction contract specifications Inspect construction site to verify that measures are being implemented.	DE, CO CO	Prior to initiation of construction under the CLRDP During construction	Physical Planning and Construction Physical Planning and Construction

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		<ul style="list-style-type: none"> - To reduce noise impacts from construction, the University shall require that construction contractors muffle or otherwise control noise from construction equipment through implementation of the measures below. The effectiveness of these measures is quantified in Table 4.11-4 above. - Internal combustion engines used for any purpose at the construction sites shall be equipped with a muffler of a type recommended by the manufacturer. - Equipment used for construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds, wherever feasible); - Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. Such mufflers can lower noise levels from the exhaust as much as 10 dBA. External jackets on the tools themselves shall be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures such as using drilling equipment rather than impact equipment shall be implemented whenever feasible. - Stationary noise sources shall be located as far from sensitive receptors as feasible. If they must be located near sensitive receptors, they shall be muffled to the extent feasible and/or, where practicable, enclosed within temporary sheds. 				

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		<ul style="list-style-type: none"> • To reduce noise impacts from construction, the University shall require that construction contractors muffle or otherwise control noise from construction equipment through implementation of the measures below. The effectiveness of these measures is quantified in Table 4.11-4 above. <ul style="list-style-type: none"> – Internal combustion engines used for any purpose at the construction sites shall be equipped with a muffler of a type recommended by the manufacturer. – Equipment used for construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds, wherever feasible); – Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. Such mufflers can lower noise levels from the exhaust as much as 10 dBA. External jackets on the tools themselves shall be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures such as using drilling equipment rather than impact equipment shall be implemented whenever feasible. – Stationary noise sources shall be located as far from sensitive receptors as feasible. If they must be located near sensitive receptors, they shall be muffled to the extent feasible and/or, where practicable, enclosed within temporary sheds. 				

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		<ul style="list-style-type: none"> The University shall require that a temporary wooden wall be placed around construction activity areas that are within 150 feet of sensitive receptors to provide additional noise attenuation, where feasible. The wall should impede the direct line of site between the noise sources and sensitive receptors. The University shall require that construction-related material haul trips access the campus via Natural Bridges Drive and Delaware Avenue in order to minimize noise exposure to residential land uses. The University shall identify potential noise impacts related to construction of long-term projects proposed under the CLRDP, and develop project-specific noise mitigation measures as may be necessary. The University shall take into account the location of the five campus facilities that will have been developed in the near-term as well as off-campus developments nearby. The analysis shall also take into account the sequence in which long-term projects are to be constructed and shall identify appropriate mitigation, as may be required. These future facilities may be sensitive receptors or may act as barriers to noise approaching other sensitive receptors. 	<p>Conduct project-specific noise analysis and develop appropriate mitigation measures, as necessary.</p>	<p>DE</p>	<p>During CEQA process for long-term projects</p>	<p>Physical Planning and Construction</p>
Transportation and Traffic						
<p>4.15-1</p>	<p>G</p>	<p>University shall contribute its fair share (see definition of fair share on page 4.15-33) toward the cost of improvements to the intersection of Mission and Bay Street which would include re-striping the southbound Bay Street approach (which currently includes a left-turn and shared left-turn/through/right lane) to provide a separate right-turn lane, a shared through-left lane, and a left-turn lane. With this improvement, intersection operations would improve to LOS D with 37.7 second of delay in the peak hour.</p>	<p>For each project proposed under the CLRDP, analyze number of peak hour trips added to this intersection by the project.</p> <p>Negotiate with City and Caltrans to determine an appropriate fair share contribution towards necessary road improvements.</p>	<p>DE</p> <p>CO</p>	<p>During project-level environmental review</p> <p>When City and/or Caltrans proposes improvement at this intersection</p>	<p>Physical Planning and Construction</p> <p>Physical Planning and Construction</p>

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
4.15-2	G	UCSC will contribute its fair-share (see page 4.15-33 for definition of fair share) towards construction of a separate pedestrian path on the north side of Delaware Avenue from Shaffer Road to the existing sidewalk west of Natural Bridges Drive. This improvement could be as simple as installing a raised asphalt curb approximately five to six feet away from the existing curb or edge of pavement with openings to maintain existing drainage. Design and construction of this improvement to close the existing gap in pedestrian facilities in this area can and should be completed by the City of Santa Cruz since Delaware Avenue is under its jurisdiction.	Negotiate with City to determine an appropriate fair share contribution towards necessary road improvements.	OC	Prior to occupancy of first project	Physical Planning and Construction
4.15-3	G	Implement General Mitigation Measure 4.15-1.	No additional procedure required.	--	--	--
4.15-4		The University shall contribute its fair share (see page 4.15-33 for definition of fair share) toward the cost of improvements to the Mission Street/Chestnut Street intersection, which would involve the following modifications: (1) convert the southbound dual right-turn lanes on Mission Street to a single-lane “free” right-turn lane and widen of the west leg of the intersection to accommodate a new 500-foot-long, third lane for merging; or (2) install a triple southbound right-turn lane, which would also require the new merge lane. In both cases, the modifications would require major reconstruction of the intersection, and possibly right-of-way acquisition and building modification/relocation.	For each project proposed under the CLRDP, analyze number of peak hour trips added to this intersection by the project. Negotiate with City and Caltrans to determine an appropriate fair share contribution towards necessary road improvements.	DE	During project-level environmental review	Physical Planning and Construction
4.15-5	G	Implement General Mitigation Measure 4.15-1.	No additional procedure required.	--	--	--
4.15-6	G	Implement General Mitigation Measures 4.15-1 and 4.15-4. In addition, the University shall contribute its fair share (as defined on page 4.15-33) toward the cost of improvements to the intersections at High Street/Western Drive, Empire Grade/Heller Drive, and State Route 1/River Street (SR 9). Mitigation measures include traffic signals at the High	For each project proposed under CLRDP, analyze number of peak hour trips added to these intersections by each project.	DE	During project-level environmental review	Physical Planning and Construction

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		Street/Western Drive and Empire Grade/Heller Drive intersections. Potential improvements for the State Route 1/River Street (SR 9) intersection will be identified by the City of Santa Cruz.	Negotiate with appropriate jurisdiction to determine an appropriate fair share contribution towards necessary road improvements.	CO	When appropriate jurisdiction proposes improvements at the affected intersection	Physical Planning and Construction
<i>Utilities, Service Systems, and Energy</i>						
4.16-1a	G	All toilets, urinals, showers, and washing machines installed as part of this project shall be specified as low-flush and low-flow in order to reduce onsite water consumption. The University shall install low-flow toilets and urinals that are 1.6 gallon/flush or less and low-flow showers that are 2 gallons per minute (gpm) or less in new development. Further, in all new residential uses washing machines must be certified by the Consortium on Energy Efficiency (CEE) to be water- and energy-efficient (such as those with the Energy Star® label).	Include in construction contracts the requirement for low-flush and low-flow equipment.	CO	Prior to construction	Physical Planning and Construction
4.16-1b	G	If and when the City adopts policies requiring all projects (or all similar institutional or commercial projects) within the water system to offset new water demand or any other water demand reduction policies, the University will consider voluntary compliance with the policy, with appropriate credit being given to account for UCSC’s previous water conservation activities (in excess of that accomplished by the similar institutional and/or commercial entities covered by the City policy).	To be determined, based on City policy.	OT	Following the adoption of pertinent policies by the City of Santa Cruz	Physical Planning and Construction
4.16-1c	G	For projects proposed by non-UC entities on the campus, non-UC entities shall be required, through contracts and agreements, to implement General Mitigation Measure 4.16-1a to minimize water usage.	Include stipulated requirements in contract or agreement.	OC	Prior to occupancy	Business and Administrative Services
4.16-1d	N/A	The City can and should identify and develop new water supplies to reliably accommodate increases in water supply due to UCSC Marine Science Campus CLRDP-related growth and other background growth during normal and drought conditions.	Outside the jurisdiction of UCSC.	--	--	City of Santa Cruz

**TABLE 5-1 (Continued)
COASTAL LONG RANGE DEVELOPMENT PLAN
MITIGATION MONITORING PROGRAM
PART B: CLRDP MEASURES**

CLRDP Measure	Applicability¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing²		Monitoring and Reporting Responsibility
<i>Aesthetics</i>						
Siting and Design Guidelines	PS	Review project siting and design for consistency with on Land Use Diagram in Figure 5.2, Design Guidelines in Chapter 6, Prototypes in Chapter 7, and Implementation Measures under Policies 4.1 through 4.4.	Develop checklist for siting and design review.	OT	Prior to design of first project planned under CLRDP	Physical Planning and Construction
			Review project siting and design for conformance with checklist. Revise plans as necessary to conform to guidelines.	SS, DE	Prior to final design approval	Physical Planning and Construction
<i>Agricultural Resources</i>						
Oversizing of Utility Lines Prohibited	PS	IM 2.1.1: The University will limit utilities on the campus to the size necessary to serve only the projected needs of the campus. IM 2.2.3: The University will limit utility capacity as set forth in Implementation Measure 2.1.1 in order to assure that public service and facility expansions and non-agricultural development do not impair agricultural viability.	Review project plans for sizing of utilities. Revise plans if necessary to limit size to projected needs of campus.	SS, DE	Prior to final design approval	Physical Planning and Construction

¹ PS = project-specific; G = general campus measure, not tied to individual projects; IM = CLRDP Implementation Measure

² Project stage at which implementation of the measure is required: PP = project planning; SS = during site selection; DE = during detailed project planning or project design prior to project approval; CO = prior to or during construction; OC = prior to occupancy; OP = during operation; OT = other

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
Utility Prohibition Zone	G/PS	IM 2.1.2: The University will establish and maintain a one-foot utility prohibition zone at the western edge of the site wherein no new sewer or water utility lines will be allowed.	Record utility prohibition zone on campus planning maps. Review project plans for compliance with utility prohibition zone. Revise plans, if necessary, so that project is compliant.	OT	Before beginning construction under CLRDP	Business and Administrative Services
Setbacks from Adjacent Agricultural Uses (Policy 2.2)	PS	Siting in relation to setbacks from agricultural uses will conform to Policy 2.2 (300 feet for non-residential uses north of the California Department of Fish and Game Marine Wildlife Center, 200 feet for non-residential uses at and south of the Marine Wildlife Center, and 500 feet for residential development)	Review project plans for consistency with setbacks. Revise plans, if necessary, to comply with setbacks.	SS, DE	Prior to final design approval	Physical Planning and Construction
Agreement with Younger Ranch Owners	G	IM 3.8.2: Prior to start of construction of any CLRDP facilities located north of the existing National Marine Fisheries Service Laboratory, the University will offer to enter into an agreement with the owners of the Younger Ranch, adjacent to the Marine Science Campus, to indemnify and hold harmless the owners, lessees, and operators of the ranch from liability and costs resulting from the effect of normal and necessary farm operations upon the Marine Science Campus and its employees, students, agents, and invitees.	Initiate negotiations with owners of Younger Ranch to enter into agreement.	OT	Before construction of facilities located north of existing NMFS facility	Physical Planning and Construction
Air Quality						
Transportation Demand Management	TDM	Implement TDM measures as described in Policies 5.2 through 5.8.	(Refer to Traffic/Circulation measures, below. No additional procedures required)	--	--	--

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²	Monitoring and Reporting Responsibility
<i>Biological Resources</i>					
Resource Management Plan	G/PS	Implement Resource Management Plan.	Implement monitoring procedures specified in Tables 1, 4, 5, 6, 7, 8, 11, and 12 of the Resource Management Plan. Document results and include documentation in annual mitigation monitoring report.	OT As specified in Table 13 of the Resource Management Plan	Physical Plant
Stormwater Concept Plan	G/PS	Implement Stormwater Concept Plan.	Refer to Hydrology and Water Quality measures, below. No additional procedures required.	-- --	--
Protection of YLR and Terrace ESHA from Visual Intrusion, Lighting	PS	Implement Policies 4.3 and 4.4 and the Implementation Measures under these policies, concerning protection of wildlife from visual intrusion and lighting.	These measures will be included in the siting and design checklist developed under Siting and Design Guidelines (see Aesthetics, above). No additional procedures required.	-- --	--
Noise Protection for Sensitive Habitats	PS	IM 3.4.2: Buildings and parking lots will be designed so that noise sources are at least 100 feet from ESHA located in the terrace portion of the Marine Science Campus. IM 3.4.3: YLR will not be exposed to noise generated by human activity on the terrace portion of the Marine Science Campus in excess of 60 dBA CNEL, as measured at the boundary of the YLR.	Review project design for location of noise sources relative to terrace ESHAs (see IM 3.4.1). As part of environmental review, estimate project noise levels at YLR and impose mitigation measures as appropriate.	SS, DE During environmental review	Physical Planning and Construction

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
Protection and Enhancement of YLR Habitats	G	IM 3.5.1: The University will protect and enhance native plant and animal habitats of Younger Lagoon Reserve by controlling and removing weeds, promoting the abundance and diversity of native plant species through small-scale plantings and re-vegetation of areas where exotics have been removed, implementing the Stormwater Concept Plan, maintaining the existing security fencing and providing additional fencing as needed to control trespass from the terrace portion of the site into YLR, and limiting access by humans and domestic pets.	Implement Resource Management Plan (see above for procedures). Implement Stormwater Concept Plan (see Hydrology and Water Quality, below, for procedures). Control and remove weeds, plant native plants	--	--	--
Protection of Special Status Species in YLR	G	IM 3.5.2: The University will protect and enhance habitats for special status animal species that use Younger Lagoon Reserve.	Implement Resource Management Plan (see above for procedures). Implement EIR Mitigations PS 4.4.1, PS 4.4.2 and PS 4.4.3 (see Table 5-1, Part A)	--	--	--
Protection of Stream and Riparian Resources	G	IM 3.5.2: The University will protect the biological productivity and quality of stream and riparian areas by minimizing the effects of storm water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies, maintaining natural vegetation buffer areas and minimizing alteration of natural streams.	Implement Stormwater Concept Plan (see Hydrology and Water Quality, below, for procedures). Implement Resource Management Plan (see above for procedures).	--	--	--
Controlled Public Access to YLR	G	IM 3.6.1: The University will provide visual access to Younger Lagoon Reserve for the general public (overlooks) and limited physical access by authorized management, emergency, research, or student personnel, consistent with the public access and recreation diagram and policies contained in this CLRDP and with illustrative plans for overlooks contained in Appendix C.	See Implementation Measure 6.2.1 under Recreation, below. No additional procedures required.	--	--	--

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²	Monitoring and Reporting Responsibility	
<i>Cultural Resources</i>						
Conservation of Cultural Resources	PS	IM 3.9.1: Should archaeological resources be disclosed during any construction on the Marine Science Campus, all activity that could damage or destroy these resources will be temporarily suspended until the site has been examined by a qualified archaeologist and mitigation measures have been developed that address the impacts of the project on archaeological resources.	Include in construction contract the requirement that work be suspended if archaeological resources are disclosed.	CO	Before beginning construction	Physical Planning and Construction
			Contract with qualified archaeologist to develop appropriate mitigation measures.	OT	If archaeological resources are disclosed	Physical Planning and Construction
<i>Geology and Soils</i>						
Coastal Bluff Protection	PS	IM 3.7.1: A setback of 100 feet will be maintained for buildings and facilities along the coastal bluff in recognition of potential geologic coastal cliff erosion and to minimize the risk to human life. Development in the cliff setback will be limited to existing streets, existing and proposed pedestrian and bicycle pathways, and infrastructure improvements such as seawater system facilities that are consistent with the CLRDP.	Review project plans and design for conformance with setback. Revise project plans and design if necessary for conformance.	SS, DE	Prior to final design approval	Physical Planning and Construction
<i>Hazards and Hazardous Materials</i>						
Hazardous Materials Management	G	IM 3.10.1: The University, through the Office of Environmental Health and Safety, will manage the use, and in the event of spillage, the containment and cleanup of, hazardous materials and petroleum on the UCSC Marine Science Campus in compliance with federal and state regulations related to the storage, disposal, and transportation of hazardous substances.	For UC entities, continue to implement UCSC Environmental Health and Safety programs involving oversight of individual units' compliance efforts and advising on improvements in procedures related to storage, disposal, and transportation of hazardous substances.	OP	Ongoing, frequency varies with the type and quantity of hazardous materials	Environmental Health and Safety

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
			Document activity of relevant Environmental Health and Safety programs. For non-UC entities, see EIR Mitigation PS 4.7-1 (see Table 5-1, Part A)	OP --	Annually --	Environmental Health and Safety --
Protective Measures for Maintenance and Laydown Area	PS	IM 3.10.2: The University will install appropriate features around the perimeter of maintenance and laydown areas to ensure that accidental spills of hazardous materials does not enter the storm water drainage system or groundwater.	Review project plans and design for appropriate features. Revise project plans and design if necessary to contain spills.	DE	Prior to final design approval	Physical Planning and Construction
Hydrology and Water Quality						
Stormwater Concept Plan	G/PS	The University will design the storm water system on the Marine Science Campus using a combination of good site planning, source control and treatment best management practices, and engineered storm water treatment systems to achieve water quality objectives, as discussed in the Stormwater Concept Plan (Appendix D). Storm water ponds constructed on the Marine Science Campus will be sized for water quality, and where feasible these ponds will be supplemented with vegetated filter strips and swales to further improve water quality. The drainage systems for parking lots will also include an engineered storm water treatment system or equivalent system designed to treat urban contaminant runoff. Implement Best Management Practices (BMPs) as specified in the Stormwater Concept Plan.	Incorporate drainage improvements and engineered stormwater treatment systems into project plans as specified in the concept drainage plans in the Stormwater Concept Plan and in Section 9.4 of the CLRDP.	DE	During project design phase	Physical Planning and Construction
			Review project design for consistency of drainage features with criteria and performance standards in Stormwater Concept Plan. Revise project design as necessary to conform to Stormwater Concept Plan.	DE	Prior to final design approval	Physical Planning and Construction
			Document implementation of best management practices.	OP	Annually	Physical Plant and EH&S

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		<p>The University will sample storm water discharges on the Marine Science Campus during at least one storm event each winter. Storm water will be tested to ensure that it meets the Regional Water Quality Control Board’s water quality objectives as specified in the Stormwater Concept Plan.</p> <p>The University will undertake maintenance activities on the Marine Science Campus for all components of the storm water system, as specified in the Stormwater Concept Plan.</p>	<p>Prepare stormwater monitoring and maintenance plan.</p> <p>Conduct water quality sampling and testing</p> <p>If changes are noted relative to baseline conditions, take action to identify the cause. Modify BMPs where warranted and necessary to address the identified water quality issue.</p> <p>Conduct maintenance of engineered treatment systems, stormwater ponds, vegetated swales, and vegetated filter strips according to guidelines included in Stormwater Concept Plan.</p> <p>Document maintenance activities.</p>	<p>CO</p> <p>CO, OP</p> <p>OP</p> <p>OP</p> <p>OP</p>	<p>Before occupancy of any project under the CLRDP</p> <p>Before beginning construction on any project under the CLRDP. Then annually or as required by stormwater monitoring and maintenance plan</p> <p>Immediately after receiving laboratory results</p> <p>During occupancy, on schedule specified in Stormwater Concept Plan or specific drainage plan</p> <p>Annually, during occupancy</p>	<p>EH&S</p> <p>EH&S</p> <p>Physical Plant</p> <p>Physical Plant</p> <p>Physical Plant</p>

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
Seawater System	G/PS	IM 7.1.8: The University will ensure that seawater pumped onto the site is contained and discharged so as not to impact freshwater resources and upland habitats on the Marine Science Campus.	For sites with seawater use, review project plans and design for facilities using seawater. Revise plans and design as necessary to provide adequate containment and discharge facilities as well as spillage prevention features.	DE	Prior to final design approval	Physical Planning and Construction
Irrigation and Use of Chemicals for Landscaping	G	IM 7.1.9: The University will ensure that any water used for the irrigation of landscaping on the Marine Science Campus does not cause significant erosion and that any chemicals used for fertilizer and weed and pest control do not enter habitat areas or the ocean in sufficient concentrations to harm wildlife or degrade their habitat.	Establish policies for irrigation and use of chemicals in landscaping to minimize erosion potential and runoff into habitat areas or the ocean.	OC	Before occupancy of first project developed under the CLRDP	Physical Plant
Inspections after Storm Events	G	IM 7.2.1: The University will inspect the Marine Science Campus after major storm events to ensure that the integrity of the drainage system is maintained.	Conduct and document inspections.	OP	After major storm events, during occupancy	Physical Plant
Discharge to YLR	PS	IM 7.3.1: Storm water discharge facilities that discharge into YLR will be designed to accommodate the 100-year storm event.	Review project plans and design for discharge into YLR. Review plan and design as necessary to accommodate the 100-year event.	DE	Before final design approval	Physical Planning and Construction
Land Use						
Impervious Coverage	PS	IM 2.3.2: The University will maintain at least 30 percent of land area within each of the three development clusters designated for Research Education Mixed Use (i.e., the Lower, Middle, and Upper Terrace) free of impervious surfaces.	Review project plans and design for impervious surface. Revise plans if necessary to keep impervious surface within the limit.	DE	Before final design approval	Physical Planning and Construction

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²	Monitoring and Reporting Responsibility	
Recreation						
Trail Construction	PS	The University will improve existing public and controlled access trails and construct new public trails on the Marine Science Campus consistent with CLRDP Section 5.6 and Figures 9.1 and 9.2.	Include trail construction in project plans consistent with the timing of trail improvements shown on Figure 9.2.	PP	During project planning	Physical Planning and Construction
			Review design of trails for consistency with Design Guidelines (Section 6.4). Revise design if necessary to conform with guidelines.	DE	Prior to final design approval	Physical Planning and construction
			Document completion of trail improvements.	OC	Prior to occupancy	Physical Planning and construction
Accommodation of Coastal Access Visitors	G	IM 6.1.1: The University will establish procedures consistent with Policy 6.1 that provide for admission of members of the public to the Marine Science Campus for purposes of viewing the scenic coastal vistas and overlooks and participating in educational programs and docent-led tours of the site.	Document consistency of procedures with Policy 6.1.	OP	Annually, following approval of the CLRDP	Seymour Discovery Center
Overlooks for Public Visual Access	PS	IM 6.1.3: The University will construct and maintain overlooks to provide the public with visual access of natural resources on and adjacent to the Marine Science Campus such as YLR and the ocean. The location of overlooks will be as specified in Figure 5.5, and the University will be guided by the illustrations contained in Appendix C of this CLRDP as it designs the overlooks.	Include construction of and improvements to overlooks A, D and E in project plans (for first new building constructed on Lower or Middle Terrace).	PP	During project planning	Physical Planning and Construction
			Review location and design of overlooks for consistency with CLRDP Figure 5.5 and Appendix C. Revise design if necessary to conform to CLRDP.	DE	Prior to final design approval	Physical Planning and Construction
			Document completion of overlook construction.	OC	Prior to occupancy	Physical Planning and Construction

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
Docent-Led Tours and Education Programs for the Public	G	IM 6.1.4: The University will seek to support and enhance public appreciation of coastal resource values through educational programs and docent-led tours of the site. The Seymour Center will continue as the site of educational programs on the marine environment for school groups and other members of the public. As resources are available, these programs will continue to include docent-led tours of the coastal terrace and bluff and the Younger Lagoon Reserve overlooks.	Document continued educational programs and docent-led tours.	OP	Annually	Seymour Discovery Center
Access to Resource Protection Areas	G	IM 6.2.1: Public access to identified Resource Protection Areas will be managed to protect against disruption of habitat values. Only authorized personnel will be allowed in such areas, except that public access may be gained with the University’s written authorization. Authorization will be granted only on a temporary basis and only for personnel necessary for activities consistent with uses allowed by the Land Use Plan. The University may use any combination of devices it deems necessary to protect natural resources in Resource Protection Areas, including fences, walls, berms, and vegetation.	Document access policies and procedures. Enforce access policies.	OP	Annually	Physical Plant
Bicycles on Marine Science Campus	G	IM 6.2.6: The University will allow the use of bicycles on the Marine Science Campus, except on “Controlled Access Trails.”	Document access policies and procedures.	OP	Annually	UCSC Police Department
Domestic Pets	PS/G	IM 6.2.7: Cats and dogs and other domestic pets will not be kept or brought temporarily onto the Marine Science Campus.	Include prohibition on pets in lease agreement for on-site housing. Use signs and other media to inform public that pets are not permitted on the campus.	OC	Prior to occupancy	College and University Housing Services
				OT	Within one year of approval of CLRDP	Physical Plant

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
Public Access Signage	G	IM 6.2.8: Signage and other media will be used to provide visitors with information about coastal resources, identify the location of public trails, and warn of dangers in the environment. Signage will also be provided to identify Controlled Access Trails, with information about supervised tours.	Maintain existing signs and provide new signage and other media. Document their content and distribution.	OT	As new trails are developed	Physical Plant and Seymour Discovery Center
Transportation Demand Management	G	Implement Transportation Demand Management (TDM) measures as detailed in Policies 5.3 through 5.8, including provision of a limited number of parking spaces, requiring permits for parking, provision of facilities for bicyclists and pedestrians, working with SCMTD to increase frequency of transit service, increased frequency of shuttle service to the UCSC main campus as warranted by demand, development of bus turnarounds and covered transit stops, and services and programs to promote carpools and vanpools.	Document implementation of TDM measures	OP	Annually	TAPS
Utilities, Service Systems, and Energy						
Oversizing of Utility Lines Prohibited	PS	IM 8.1.1: The University will size utilities and services to the Marine Science Campus, including water, sanitary sewer service, storm water systems, and electrical and communication lines, consistent with and limited to accommodating the building program set forth in this CLRDP. The capacity of these utilities will be consistent with the utilities program described in Subsection 5.8.1 of this CLRDP.	Refer to procedures for IMs 2.1.1 and 2.2.3, under Agricultural Resources, above. No additional procedure required.			
Installation of New Utility Lines and Facilities	PS	IM 8.2.1: The University will install new underground utility lines and facilities through wetlands and riparian corridors only when there is no feasible less environmentally damaging alternative and where feasible mitigation measures have been provided to minimize adverse environmental effects.	Review project plans and design for underground utilities through wetlands and riparian corridors. Revise plans if necessary to provide a less environmentally damaging alternative.	DE	Prior to final design review	Physical Planning and Construction

CLRDP Measure	Applicability ¹	Description of CLRDP Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
			If a less damaging alternative is not feasible, include mitigation measures as part of project design.			
Seawater System	G	IM 8.2.2: The University will operate the seawater system in a manner that will protect against spillage and that will sustain the biological productivity and quality of coastal waters, streams, and wetlands.	Refer to procedures for IM 7.1.8 under Hydrology and Water Quality, above. No additional procedures required.	--	--	--

**TABLE 5-2
SHARED CAMPUS WAREHOUSE AND LAYDOWN FACILITY
MITIGATION MONITORING PROGRAM**

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
4.11-3	PS	<p>As part of the design of the Shared Campus Warehouse and Laydown Facility, the University shall implement noise control measures to reduce the resulting noise levels to 65 DNL or lower at future campus housing planned for the upper terrace development area. Control measures incorporated into the design and location of the Shared Campus Warehouse and Laydown Facility may include but not be limited to the following:</p> <ul style="list-style-type: none"> • The University shall orient the warehouse so as to shield noise generated by activity at the Shared Campus Warehouse and Laydown Facility, from potential sites of future campus housing on the upper terrace development area. • The University shall incorporate an easy turn-around for trucks such that they can avoid maneuvering in reverse and thus minimize back-up alarm noise. • Once the future campus housing planned for the upper terrace becomes inhabited, the University shall limit noisy outdoor activities (such as those involving the use of heavy equipment) at the warehouse and laydown area from 10:00 PM to 6:00 AM all days of the week. • The University shall construct a wall around the laydown area, consistent with CLRDP guidelines, to attenuate noise levels at future campus housing planned for the upper terrace development area. The wall shall be completed before the future campus housing planned for the upper terrace is occupied. 	<p>Review noise control measures included in project design. Revise control measures if necessary.</p> <p>Develop and implement policy limiting noisy outdoor activities.</p> <p>Construct wall around laydown area.</p>	DE	During design of warehouse and laydown facility	Physical Planning and Construction
				OC	Prior to occupancy of campus housing	College and University Housing Services
				OC	Prior to occupancy of campus housing	Physical Planning and Construction

¹ PS = project-specific; G = general campus measure, not tied to individual projects; IM = CLRDP Implementation Measure

² Project stage at which implementation of the measure is required: PP = project planning; SS = during site selection; DE = during detailed project planning or project design prior to project approval; CO = prior to or during construction; OC = prior to occupancy; OP = during operation; OT = other

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
4.11-5	PS	The University shall require that construction contractors limit construction activity for the Shared Campus Warehouse and Laydown Facility to the hours between 7:00 AM and 10:00 PM all days of the week.	Include time limit in contractor specifications for project.	CO	Prior to construction of Shared Campus Warehouse and Laydown Facility	Physical Planning and Construction

**TABLE 5-3
USGS WESTERN COASTAL AND MARINE GEOLOGY FACILITY
MITIGATION MONITORING PROGRAM**

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
4-11-2	PS	As part of the design of USGS Western Coastal and Marine Geology Facility, the University shall implement noise control measures in the design of the HVAC systems to reduce the resulting noise levels to 65 DNL or lower at the 42 Apartment/Townhouse units. Control measures for HVAC noise could include, but would not be limited to, the following: use of quiet HVAC models, use of sound barriers around the equipment, and/or orientation of HVAC systems away from sensitive receptors.	Review project plans and design for noise control measures. Revise plans if necessary to include noise control measures.	DE	Before final design approval	Physical Planning and Construction
4-11-6	PS	<p>If the 42 Apartment/Townhouse Units are developed and occupied before construction of the USGS Western Coastal and Marine Geology facility, the University shall require that construction contractors implement the following measures:</p> <ul style="list-style-type: none"> Contractors shall notify all residents of the 42 Apartment/Townhouse Units that will be subject to construction noise from the development of the USGS facility one week before the start of construction activity. To the extent feasible, loud construction activity (i.e., jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) within 150 feet of the 42 Apartment/Townhouse Units shall occur during daytime hours (7:00 AM to 5:00 PM). To reduce noise impacts from construction, contractors shall muffle or otherwise control noise from construction equipment through implementation of the measures below. 	Include the required measures in the contractor specifications for the USGS facility.	CO	Before construction of the USGS facility begins	Physical Planning and Construction
			Inspect construction site to verify the measures are being implemented.	CO	Weekly during construction	Physical Planning and Construction

¹ PS = project-specific; G = general campus measure, not tied to individual projects; IM = CLRDP Implementation Measure

² Project stage at which implementation of the measure is required: PP = project planning; SS = during site selection; DE = during detailed project planning or project design prior to project approval; CO = prior to or during construction; OC = prior to occupancy; OP = during operation; OT = other

Mitigation Measure	Applicability ¹	Description of Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing ²		Monitoring and Reporting Responsibility
		<ul style="list-style-type: none"> - Internal combustion engines used for any purpose at the construction sites shall be equipped with a muffler of a type recommended by the manufacturer. - Equipment used for construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds, wherever feasible); - Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. Such mufflers can lower noise levels from the exhaust as much as 10 dBA. External jackets on the tools themselves shall be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures such as using drilling equipment rather than impact equipment shall be implemented whenever feasible. - Stationary noise sources shall be located as far from sensitive receptors as feasible. If they must be located near sensitive receptors, they shall be muffled to the extent feasible and/or, where practicable, enclosed within temporary sheds. • The University shall require contractors to install a temporary wooden wall around construction activity areas that are within 150 feet of inhabited residences to provide additional noise attenuation, where feasible. The wall should impede the direct line of site between the noise sources and first floor sensitive receptors. 				