



UCSB Audit and Advisory Services  
Internal Audit Report

**Construction Activities**

April 19, 2012

**Performed by:**  
Raphaella Nau, Staff Auditor  
Benjamin Wong, Systemwide Auditor

**Approved by:**  
Robert Tarsia, Acting Director

Report No. 08-12-0014

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AUDIT AND ADVISORY SERVICES  
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April 19, 2012

To: Senior Associate Vice Chancellor Marc Fisher  
Administrative Services

Re: **Construction Activities**  
**Audit Report No. 08-12-0014**

As part of the 2011-12 annual audit plan and in conjunction with a systemwide effort, Audit and Advisory Services has completed an audit of Construction Activities. Enclosed is the audit report detailing the results of our review.

The primary purpose of the audit was to assess the effectiveness of University of California Santa Barbara (UCSB) construction management policies, procedures, internal controls, and processes related to selected construction activities in the areas of bidding, change orders, and funding requirements.

The scope of the review included construction projects currently in progress, or in progress during fiscal years 2008-09, 2009-10, and/or 2010-11.

The scope of our review included:

- Bidding and contracting – The bidding process, construction documents, contractor pre-qualification, and contract award.
- Change orders – Project management review and evaluation processes, change order volume, and change order pricing and compliance with base contracts.
- Construction funding – Analysis of construction funding sources and restrictions, and monitoring responsibilities and practices.

The audit found no critical weaknesses in the areas included in the scope of our review. The audit also found a high level of compliance with University policies and procedures, including the University of California Facilities Manual.

Our work did identify opportunities for improvement in some campus practices for reviewing the costs of change orders and ensuring compliance with construction funding restrictions and requirements.

Detailed observations and management corrective actions are included in the following sections of the report. The management corrective actions provided indicate that each audit observation

was given thoughtful consideration and that positive measures have been taken or planned to implement the management corrective actions. The cooperation and assistance provided during the review by Campus Design and Facilities personnel in Design and Construction Services, Contracting Services, and Financial Services was greatly appreciated. If you have any questions, please feel free to contact me.

Respectfully submitted,

A handwritten signature in black ink that reads "Robert Tarsia". The signature is written in a cursive style with a long horizontal stroke extending to the right.

Robert Tarsia  
Acting Director  
Audit and Advisory Services

Enclosure

cc: Chancellor Henry Yang  
Associate Vice Chancellor Ron Cortez  
UCSB Audit Committee  
Senior Vice President and Chief Compliance and Audit Officer Sheryl Vacca  
Jack Wolever, Director of Design and Construction Services  
Paul Gawronik, Associate Director of Design and Construction Services  
Greg Moore, Associate Director of Contracting Services  
Telli Foster, Project Manager, Design and Construction Services  
Cheryle Leckie, Associate Manager of Financial Services

**UCSB Audit and Advisory Services  
Construction Activities  
Audit Report No. 08-12-0014**

**PURPOSE**

The primary purpose of the audit was to assess the effectiveness of University of California Santa Barbara (UCSB) construction management policies, procedures, internal controls, and processes related to selected construction activities in the areas of bidding, change orders, and funding requirements. This audit is part of UCSB's 2011-12 annual audit plan and was performed in conjunction with a systemwide effort.

**SCOPE, OBJECTIVES AND METHODOLOGY**

The scope of the review included construction projects currently in progress, or in progress during fiscal years 2008-09, 2009-10, and/or 2010-11.

The scope of our review included:

- Bidding and contracting – The bidding process, construction documents, contractor pre-qualification, and contract award.
- Change orders – Project management review and evaluation processes, change order volume, and change order pricing and compliance with base contracts.
- Construction funding – Analysis of construction funding sources and restrictions, and monitoring responsibilities and practices.

The audit objectives, which are outlined in detail in Table 1, included:

- Gaining and documenting an understanding of campus processes in the areas included in the audit scope.
- Determining whether campus processes in those areas comply with sound business practices and University policies, including the University's Facilities Manual.

To accomplish our objectives, we reviewed:

- University and campus policies, procedures, and practices, including relevant sections of the University of California Facilities Manual. The Facilities Manual incorporates key policies, procedures, and guidelines for facilities management and operation; the sections that address funding of capital projects, bidding, and contract modifications were particularly relevant to the areas in the audit scope.
- External guidance and legal and regulatory requirements, including the State of California Public Contract Code and Labor Code, and the Contractors License Law & Reference Book published by the California Contractors State License Board.
- Campus reports and general ledger data that include details of UCSB's construction program, its funding sources, and the status and costs of individual projects.

We also:

- Interviewed personnel from campus departments involved in various facets of capital improvement and construction, including Design and Construction, Budget and Planning, and Accounting Services and Controls.
- For a sample project, the North Hall Data Center (NHDC), reviewed and evaluated the documentation of the bidding and award process and contract/construction documents.
- For the same sample project, performed detailed testing of change orders for proper approvals; appropriate costing, including labor and labor burden rates, material pricing, etc.; and determination of whether change order scope of work represented legitimate changes in scope.
- Analyzed and summarized campus construction funding sources and associated requirements and restrictions, and assessed processes in place to monitor and ensure compliance.

UCSB Audit and Advisory Services  
Construction Activities

<b>Table 1</b>	
<b>Audit Objectives</b>	
<b>Review Area</b>	<b>Objectives</b>
<p><b>Bidding and Contracting</b></p> <ul style="list-style-type: none"> <li>• Bidding Process</li> <li>• Construction Documents</li> <li>• Contractor Pre-Qualification</li> <li>• Contract Award</li> </ul>	<ul style="list-style-type: none"> <li>• Gain and document an understanding of the bidding process for the various types of construction projects and contracts.</li> <li>• Identify trends or patterns in the award of projects to contractors and subcontractors in the past 3 years, and determine whether trends or patterns are appropriate and reasonable.</li> <li>• Determine whether bidding processes comply with the University Facilities Manual.</li> <li>• Through review of construction documents for a sample project, determine whether designs, scope, building requirements, etc. are appropriately documented, reviewed, and approved as required by the Facilities Manual.</li> <li>• Determine whether there is an appropriate contractor prequalification process, including proper advertisement for prequalified bidders, issuance of bidding documents only to prequalified bidders, appropriate prequalification evaluation of potential bidders, and acceptance of bids only from prequalified bidders.</li> <li>• Through review of a sample project, determine whether the contract award process includes proper advertisement of an invitation for bids; bids collected are received on or before the bid deadline and are opened publicly; required items are submitted; contractor selection is appropriate and based on evaluation method prescribed; and whether selected contractors meet the minimum responsibility requirements of licensing, bonding, and insurance.</li> </ul>
<p><b>Change Orders</b></p> <ul style="list-style-type: none"> <li>• Project Management Review and Evaluation</li> <li>• Change Order Volume</li> <li>• Pricing</li> <li>• Compliance With Base Contract</li> </ul>	<ul style="list-style-type: none"> <li>• Gain and document an understanding of change order procedures, including thresholds for change orders being treated as a new contract, routing and review processes, and required supporting documentation.</li> <li>• Through review of a sample project, determine whether any change orders exceeding \$100,000 are competitively bid, or that the justification for not competitively bidding is properly documented; and whether change orders based on agreed-upon lump sum amounts are supported by a detailed cost breakdown.</li> <li>• Determine whether change orders have been properly approved, and whether change order costs are in accordance with contract terms and conditions, including labor and labor burden rates, material pricing, etc.</li> <li>• Determine whether change order scope of work represents legitimate changes in scope, and (if possible) whether the work was properly executed.</li> </ul>
<p><b>Construction Funding</b></p> <ul style="list-style-type: none"> <li>• Analysis of Construction Funding Sources and Restrictions</li> <li>• Monitoring Responsibilities and Practices</li> </ul>	<ul style="list-style-type: none"> <li>• Gain and document an understanding of the sources of funding for construction projects over the past three years, and the benefits and/or challenges of particular funding sources; identify the top 3-5 funding sources.</li> <li>• Categorize funding restrictions and requirements by source, determine the most common types of restrictions, and gain an understanding of the more frequently applied types.</li> <li>• Determine whether funding restrictions and requirements are being interpreted and applied correctly, and identify those that appear to have the most significant risk or negative implications if compliance is not maintained.</li> <li>• Evaluate the adequacy of departmental and staff accountability for ensuring compliance with funding requirements, and the adequacy of departmental practices, procedures, and control structure to monitor compliance with funding restrictions and requirements.</li> </ul>

Source: Auditor Analysis

## **BACKGROUND**

Design and Construction Services (DCS), a unit of Campus Design and Facilities in the Administrative Services Division, is responsible for the delivery of UCSB's major and minor capital improvement program. During fiscal year 2011-12, DCS is managing approximately 36 major and 34 minor active capital improvement projects, with total costs estimated at \$683 million.<sup>1</sup> Project funding comes from various sources, including state, federal, gift, grant, and University funds.

DCS staffing includes 20 project managers, 7 inspectors, and other support staff. The work of DCS is directly supported by two other Campus Design and Facilities units: Contracting Services, which provides contract administration and other administrative oversight for capital improvement projects, and Financial and Administrative Services, which provides financial, information systems, and personnel and payroll services.

UCSB's Capital Development Office, which is part of the Office of Budget and Planning, assists the campus in maximizing the utilization of its existing physical facilities and acquiring the physical resources necessary to meet its instruction, research, and public service goals. As part of this mission, the Capital Development Office has primary responsibility for ensuring that there is adequate, appropriate funding in place for all construction projects. Through the Campus Planning Committee, the Capital Development Office advises the Chancellor on all matters relating to major capital developments on campus, including proposals and progress of capital projects, to ensure consistency with approved campus objectives. All new capital improvement projects, prior to being managed by Design and Construction Services, are also reviewed by the Chancellor. When the Chancellor approves new projects, he directs the Office of Budget and Planning to include those projects in the Campus State and Non-State Funded Capital Improvement Programs.

### *North Hall Data Center*

The North Hall Data Center (NHDC) project involves the renovation and expansion of an existing, outdated data center containing enterprise computing and campus network connections. The new data center will have nearly double the raised floor space, and will be able to support the latest in high performance research computing, with approximately 4,500 square feet of space available for the placement of up to 110 racks and associated support infrastructure. The NHDC project was originally bid at \$3.4 million, and work was started in September 2010. The project is now nearing completion.

The NHDC project was selected as the sample project for detailed testing in the areas of Bidding and Contracting and Change Orders. Although not one of the largest campus projects, it was selected for detailed review because it is considered a critical project and has been subject to schedule delays and cost increases of approximately \$500 thousand (15%), with 19 change orders to date.

## **SUMMARY OPINION**

The audit found no critical weaknesses in the areas included in the scope of our review. The audit also found a high level of compliance with University policies and procedures, including the University of California Facilities Manual. Our work did identify opportunities for improvement in some campus practices for reviewing the costs of change orders and ensuring compliance with construction funding restrictions and requirements.

Audit observations and management corrective actions are detailed in the remainder of the audit report.

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<sup>1</sup> The count of projects includes all projects considered active at this time, including those substantially completed and in litigation.

**DETAILED OBSERVATIONS AND MANAGEMENT CORRECTIVE ACTIONS**

**A. Bidding and Contracting**

**1. Distribution of Construction Contract Awards**

Our work in this area included an analysis to identify trends or patterns in the award of construction contracts, and determining whether any identified trends or patterns appear appropriate and reasonable. To complete this analysis, we summarized by contractor the 104 construction contracts awarded during the period July 2008 through June 2011, including:

- Number of contracts, and percentage of the count of all contracts.
- Value of contracts, and percentage of \$ value of all contracts.

The results of this analysis indicate that UCSB awards its construction contracts to a fairly diverse pool of contractors:

- 59 different contractors were awarded the 104 contracts entered during the period.
- The highest number of contracts awarded to one contractor was 13; however, these contracts represented only 6.2% of the \$ value of contracts awarded.
- The highest percentage of total \$ value awarded to one contractor was 19%; however, this amount represented only 3 contracts.

**2. Bidding and Contracting**

As stated in the Background section of this report, we selected the North Hall Data Center (NHDC) as our sample project for our assessment of UCSB compliance with Facilities Manual requirements pertaining to the bidding and contract award process, and for our review of contract/construction documents. Under California Public Contract Code and Facilities Manual requirements, all projects with a total budget above \$100 thousand should be formally and competitively bid. The NHDC project was awarded at \$3.4 million, and therefore met that threshold.

Our review of the bidding and contract award process (including review of all related documents) for the NHDC found that the bidding and contract award process followed by Design and Construction Services and Contracting Services fully complied with the Facilities Manual. The project was advertised twice in one general circulation publication and one trade paper; all sealed bids were received prior to the bid deadline and opened publicly during the bid opening conference; and all required documents were submitted. A bid summary was prepared and the project was awarded to the lowest responsible bidder, Newton Construction Management with a bid of \$3,374,000. We also reviewed the licensing, insurance and bond documentation submitted by the selected contractor, and found that Newton Construction Management met the minimum licensing and insurance requirements, and submitted an adequate bid bond.

Although there was not a prequalification process for the contractors wishing to bid on this project, contractors were only allowed to bid on the NHDC if they attended both the pre-bid conference and the pre-bid job walk, as stated in the advertisement for bids. A contractor not arriving on time to the pre-bid event was immediately disqualified. We reviewed the attendance documentation for the pre-bid events, including attendee business cards and sign-

in sheets, and determined that all bidders did attend the pre-bid events and therefore qualified to bid on the NHDC project.

Our review of contract and construction documents for the NHDC project found that all documents, including designs, scope, building requirements, etc., were appropriately documented, reviewed, and approved as required by the Facilities Manual.

## **B. Change Orders**

The NHDC project was also selected as our sample project for detailed review and testing of change orders. This project met our criteria for selection; contract retention had not yet been released, and there had been several change orders processed. As discussed in the Background section of the report, the NHDC is considered a critical project and has been subject to schedule delays and cost increases of approximately \$500 thousand (15%), with 19 change orders to date.

One of our audit objectives was to determine whether any change orders exceeding \$100 thousand were competitively bid, or that the justification for not competitively bidding was properly documented, as required by the Facilities Manual. We found that none of the 19 change orders for the NHDC project met the \$100 thousand threshold.

We reviewed all 19 change orders for the NHDC project and found that:

- All change orders were properly approved in accordance with the contract terms and conditions.
- There were only minor math or calculation errors that were not material to the change orders or the project as a whole.
- Change order costs were allowable under contract terms and conditions, and were supported by adequate backup documentation.
- Material quantities appeared reasonable, based on our understanding of the project and our discussions with the project manager.
- Material pricing (which we tested on a sample basis) also appeared reasonable, based on our understanding of the project and in comparison to prices found through internet research.

We also reviewed a sample of five change orders to determine whether change order scope of work represented legitimate changes in scope, and whether the work was properly executed. Our work in this area, which included discussions with the project manager and visual inspection of the change order work, did not disclose any concerns.

### **1. Change Order Labor Pricing**

Our review of change order labor pricing found that:

- Design and Construction Services did not consistently receive and review a detailed enough cost breakdown to support the labor cost component of change orders priced as agreed-upon lump sum amounts. There was no detailed breakdown of labor classifications, hours, and labor and burden rates; this level of detail is needed to adequately review cost estimates before agreeing to the price of a lump sum change order.

- For change orders priced on a time and materials basis, labor classifications were listed, but the labor rates reflected were not always consistent with the contract rates for the specific classifications. In some cases, the contractor apparently combined the labor and burden rates for different classifications, which meant that we could not determine that individual labor and burden rates, and therefore the total costs, were consistent with the contract. We found that Design and Construction Services (including Contracting and Financial Services) was not adequately reviewing the change order costs because it did not receive this breakdown.

To ensure that lump sum change orders are properly priced, and that amounts billed under time and materials change orders are correct, Design and Construction Services should require and review detailed cost breakdowns that specify labor classifications, hours, and pay and labor burden rates.

### Management Corrective Actions

While the change orders examined all conform to both construction contract requirements and the Facilities Manual, we understand that good business practices dictate that DCS should obtain and review detailed breakdowns of labor classifications, hours, and labor and burden rates before agreeing to the price of a lump sum change order. DCS should also ensure that labor rates are consistent with the contract rates for time and materials change orders. DCS will conduct training for project managers to ensure that they understand these issues and that they conduct reviews of contractor change order pricing in a consistent fashion. Training will be complete by June 30, 2012.

## C. Construction Funding

### 1. Funding Sources

UCSB's construction program is funded by various sources, including state appropriations, University funds, gifts and private grants, bonds issued by the UC Office of the President, and federal grants. State appropriations have been one of the largest funding sources for construction in the past, and are considered to have a greater net impact because they represent new money to the campus, above and beyond operating funds. University funds include campus-based fees, auxiliary fund reserves, and Garamendi funds.<sup>2</sup> Although campus-based fees are also new funds to the campus, they result in higher costs of attendance for students. All funding sources contribute to the University's mission through the development of instructional, research, housing, parking and other general facilities to accommodate present and future growth. Table 2 summarizes the top six sources of funding for UCSB's construction program during the previous three fiscal years.

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<sup>2</sup> Garamendi funds are federal indirect cost recovery funds used for the acquisition, construction, renovation, equipping, financing, and maintenance of certain research facilities.

UCSB Audit and Advisory Services  
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<b>Table 2</b>		<b>UCSB Construction Program Top 6 Funding Sources FY 2008-09 Through FY 2010-11</b>		
<b>Funding Source</b>	<b>Appropriations FY 2008-09 Through FY 2010-11</b>	<b>Funded Projects in Progress <sup>1</sup></b>		
		<b>FY 2008-09</b>	<b>FY 2009-10</b>	<b>FY 2010-11</b>
State Appropriations	\$173,607,236	20	19	16
University Funds	163,776,820	115	124	127
Commercial Paper <sup>2</sup>	57,518,701	10	14	8
Gifts and Private Grants	41,284,153	24	27	25
Bonds	27,063,696	17	17	11
Federal Grants	24,772,642	3	2	2
<b>Total</b>	<b>\$488,023,248</b>			

Source: Auditor Analysis of General Ledger Data

<sup>1</sup> The count of projects includes all projects considered active, including those substantially completed and in litigation.

<sup>2</sup> Used for short term financing.

## 2. Funding Restrictions and Requirements

Restrictions and requirements are usually placed on specific sources of funding provided to the campus for construction projects. State funds are mainly used for the construction and maintenance of instructional facilities; state funds provided as *general operating funds* can account for a maximum of \$100,000 of the cost of smaller projects with a total cost of \$750,000 or less. Campus-based fees may only be used for the project specified in the ballot language for the related student election that approved the fees, although any remaining funds (after construction costs) may be used for capital debt repayment, operation and maintenance, and programming within the building. Gift restrictions are usually specific to the gift and may be rigid, although they can be easily identified via the donor letters. Table 3 highlights common requirements and restrictions that come with UCSB's top funding sources for construction.

The audit documented and evaluated the adequacy of departmental and staff accountability for ensuring compliance with funding requirements, and the adequacy of departmental practices, procedures, and controls for monitoring compliance. Several campus departments and units play a role in this area:

- The Office of Research is responsible for submission of faculty research proposals, specifically for preparing, interpreting, negotiating, and accepting agreements on behalf of the Regents for projects funded by federal and state agencies, foundations, and other public and private sources.
- The Office of Budget and Planning generally monitors restrictions and requirements on funding sources it distributes to Design and Construction Services.
- Extramural Funds Accounting performs financial reporting, gift processing, billing, and other support to departments in managing extramural funds.

UCSB Audit and Advisory Services  
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Based on the work performed in the scope of this audit, we found that the Financial and Administrative Services unit of Campus Design and Facilities bears the overall responsibility for ensuring compliance with most restrictions and requirements of construction funding. However, Extramural Funds Accounting is responsible for filing the financial reports required by the agencies that fund construction.

Table 3	Funding Requirements & Restrictions Highlights
<b>State Appropriations</b>	<ul style="list-style-type: none"> <li>✓ Mainly used for the construction and maintenance of instructional facilities.</li> <li>✓ State funds provided as general operating funds can account for a maximum of \$100,000 of the cost of smaller projects with a total cost of \$750,000 or less.</li> </ul>
<b>University Funds: Campus Based Fees</b>	<ul style="list-style-type: none"> <li>✓ Funding approved by students and can only be used for the proposed project.</li> <li>✓ Further restrictions are included in the ballot language.</li> <li>✓ Funds remaining after completion of construction may be used for capital debt repayment, operation and maintenance, and programming within the building.</li> </ul>
<b>Gifts</b>	<ul style="list-style-type: none"> <li>✓ Restrictions are specific to the gift.</li> </ul>
<b>Bonds</b>	<ul style="list-style-type: none"> <li>✓ Bond covenants, as written in the bond indenture.</li> </ul>
<b>Grants</b>	<ul style="list-style-type: none"> <li>✓ Generally do not support project manager salaries.</li> <li>✓ Will only fund up to eighty (80%) percent of the total construction costs.</li> <li>✓ Reports must be received during the mandated timeframe.</li> </ul>
<b>Garamendi Funds*</b>	<ul style="list-style-type: none"> <li>✓ Support a specific project scope</li> <li>✓ If change orders are necessary, new funding source(s) has to be identified.</li> </ul>

Source: Auditor Analysis

\* Garamendi funds are federal indirect cost recovery funds used for the acquisition, construction, renovation, equipping, financing, and maintenance of certain research facilities.

### 3. Ensuring Compliance with Funding Restrictions and Requirements

Our discussions with campus personnel and other audit work suggest that grant funds used for construction may pose the highest risk for non-compliance with funding restrictions and requirements. Because grant funds are not the most common source of campus construction funding, campus personnel may be less familiar with common restrictions and requirements, such as special reporting requirements, related to construction. In addition, sponsoring agencies have strict deadlines for financial, performance and/or progress reports; not reporting within the mandated timeframes may cause the agency to withhold payment and, in the most severe cases, disallow all or part of the cost.

We selected five federal grants for construction projects that were open during our review period, identified reporting and other requirements, and determined whether the campus complied with them. The audit found that:

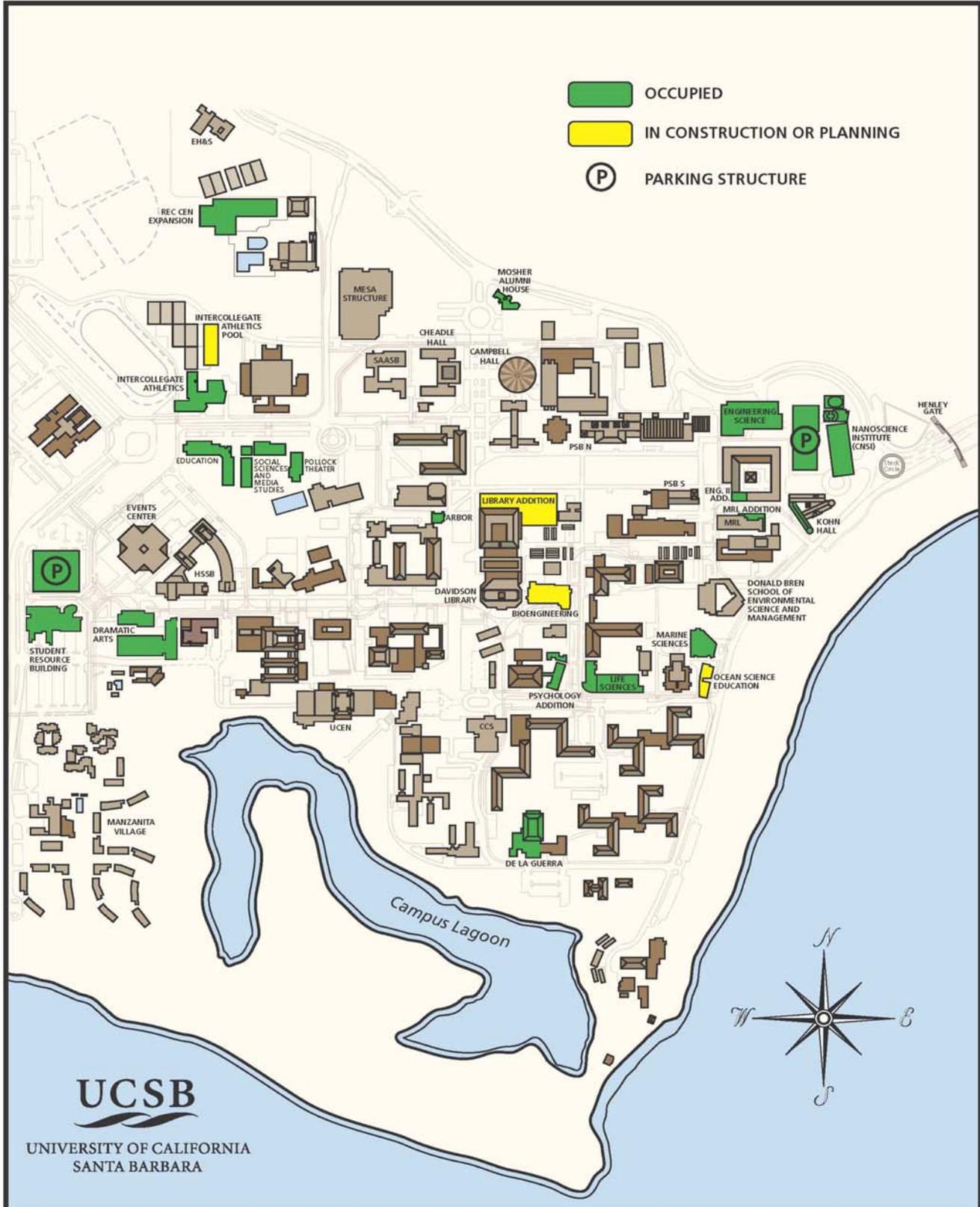
- The campus did not comply with key agency requirements related to an \$11 million project for a research facility, \$6.5 million of which was funded by the United States Department of Commerce/National Oceanic and Atmospheric Administration (NOAA). For this award, the campus missed by five months the filing deadlines for the Financial Status Report and Federal Cash Transaction Report. The award letter for this award clearly states that failure to file reports jeopardizes future NOAA grant funding.
- Design and Construction Services was not in possession of the award documents for at least three of the five grants tested. Design and Construction Services personnel stated that they do not routinely receive all award documents, and do not always adequately monitor to ensure compliance with restrictions and requirements.

To ensure compliance with all construction-related funding restrictions and requirements, Design and Construction Services should obtain all award documents and monitor compliance.

#### **Management Corrective Actions**

While the audit suggests that DCS is responsible for compliance with all construction-related funding restrictions and requirements related to federal grants, such responsibility has never been made explicit to DCS. Furthermore, DCS does not have access to the information needed to discharge that responsibility. We will coordinate a working group (with the assistance of Audit and Advisory Services) that includes Budget and Planning, Office of Research, Accounting, FM Fiscal and Audit, to determine how best to ensure compliance and, to the extent that some responsibilities fall logically with DCS, to develop a structure with appropriate policies and procedures to enable DCS to discharge its responsibilities in this regard. This working group should be prepared to implement policies and procedures by July 30, 2012.

Appendix: UCSB Building Program



APRIL 2010

**UCSB Building Program 2005-2012**

Source: UCSB Website