UNIVERSITY OF CALIFORNIA

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

EXECUTIVE VICE PRESIDENT—
CHIEF FINANCIAL OFFICER

OFFICE OF THE PRESIDENT
1111 Franklin Street, 6th Floor
Oakland, California 94607-5200
510/987-9029

January 13, 2020

The Honorable Holly J. Mitchell
Chair, Senate Budget and Fiscal Review Committee
State Capitol
Sacramento, CA 95814

The Honorable Phil Ting
Chair, Assembly Committee on Budget
State Capitol
Sacramento, CA 95814

Ms. Keely Bosler
Director of Finance
State Capitol, Room 1145
Sacramento, CA 95814

Dear Senator Mitchell, Assemblymember Ting, and Director Bosler:

On August 30, 2019 in accordance with Sections 92493 through 92496 of the Education Code, the University of California submitted for your review and approval the University's 2020-21 State Capital Outlay proposal totaling $551 million. This proposal includes $300 million for the 2020-21 UC Seismic Program Supported by State Resources (2020-21 UC State Seismic Program).

As indicated in the 2020-21 UC Seismic State Program, the first grouping of seismic evaluations were just being completed last August and as a result, information on budget, scope, and schedule for the related capital projects would be submitted in January 2020, the earliest these details would be available, for projects UC proposes to finance under the provisions of the Education Code. Referring to the table below, the University has identified 13 buildings with a seismic performance level of VI and a structurally deficient road bridge that are proposed to be retrofitted or replaced with this program's allocation. I understand that submitting this information at this time places a burden on the legislature and the Department of Finance to review and consider this material; however these projects are key facilities that need seismic retrofits and with your approval of these projects and the passage of the State Budget Act, the work to correct these structures could start as early as July 1 of this year.

Attached to this cover letter are Capital Outlay Budget Change Proposals for each of these projects.

	State General Funds Financed ($000s)
Berkeley - Durant Hall Seismic Corrections	$20,010
Berkeley - Moffitt Library Seismic Corrections	$5,327
Berkeley - Stephens Hall Seismic Corrections	$46,870
Berkeley - Wellman Hall Seismic Corrections	$43,793
Davis – Jungerman Hall Seismic Corrections	$12,200
Davis - Mann Laboratory Seismic Corrections	$5,800
Davis - Social Sciences and Humanities Building Seismic Corrections	$33,400
Davis - Voohries Hall Seismic Corrections	$24,200
Davis - Young Hall Seismic Corrections	$23,800
Irvine - Social Science Lecture Hall Seismic Corrections	$2,261
San Diego - Revelle College Seismic Corrections (Mayer Hall and York Hall)	$52,158
Santa Barbara - Music Building Unit 1 Seismic Corrections	$15,000
Berkeley and Lawrence Berkeley National Laboratory - Centennial Bridge Improvement Seismic Corrections	$15,181
TOTAL STATE FUNDS FINANCED	**$300,000**

Your consideration of the 2020-21 UC Seismic State program and the rest of the University's 2020-21 State Capital Outlay request is appreciated and I look forward to discussing this proposal with you. Please let me know if you have any questions.

Sincerely,

Paul Jenny
Interim Executive Vice President-Chief Financial Officer

Attachment

cc: Vice Chair and Members, Senate Budget and Fiscal Review Committee
Vice Chair and Members, Assembly Committee on Budget
The Honorable Anthony Rendon, Speaker of the Assembly
The Honorable Toni Atkins, President pro Tempore of the Senate
The Honorable Marie Waldron, Assembly Minority Leader
The Honorable Shannon Grove, Senate Minority Leader
Mr. Petek, Legislative Analyst
Mr. Constantouros, Principal Fiscal and Policy Analyst, Legislative Analyst's Office
Ms. McGee, Executive Secretary, Legislative Analyst's Office
Mr. Almy, Program Budget Manager, Department of Finance *(electronic attachment only)*
Mr. Lief, Assistant Program Manager, Department of Finance
Ms. Lukenbill, Principal Program Analyst, Department of Finance
Mr. Katz, Finance Budget Analyst, Department of Finance
Ms. Contreras, Secretary of the Senate
Interim Chief Clerk of the Assembly
Ms. Leach, Office of the Chief Clerk of the Assembly
Mr. Martin, Assembly Budget
Ms. Lee, Senate Budget
Ms. McKinney, Senate Republican Fiscal
Ms. Nealon, Assembly Republican Caucus
Indexing Division, Office of Legislative Counsel

President Napolitano *(electronic attachment only)*
Executive Vice President – Chief Operating Office & Chief of Staff to the President Nava *(electronic attachment only)*
Chief Policy Advisor to the President Kao
Associate Vice President & Systemwide Controller Arrivas
Associate Vice President Alcocer *(electronic attachment only)*
Associate Vice President Flaherty
Executive Director Stimpson
Director Friedman

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Berkeley – Durant Hall Seismic Safety Project	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$20,010	PWC	$20,010

Budget Request Summary

Durant Hall Seismic Safety Project - $20,010,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections and some deferred maintenance. The project will reinforce the building to improve its resistance to seismic forces and provide life safety protection to its occupants during a large earthquake. Durant Hall is a four-story, 22,210 gross-square-foot structure serving as an academic administrative office building for the College of Letters & Science. Durant Hall has a Seismic Performance Rating (SPR) of VI and on completion of the work, would be upgraded to SPR IV. The total project costs are estimated at $20,010,000, including Preliminary Plans ($300,000), Working Drawings ($1,607,000), and Construction ($18,103,000). The construction amount includes $15,434,000 for the construction contract, $899,000 for contingency, and $1,770,000 for architectural and engineering services. Preliminary Plans are scheduled to begin in July 2020 and complete in September 2020. Working Drawings are scheduled to begin October 2020 and complete in March 2021. Construction is scheduled to begin in July 2021 and complete in February 2023.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**6924**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Colleen Connor	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

Berkeley Capital Strategies
UNIVERSITY OF CALIFORNIA

PROJECT PLANNING GUIDE

for

DURANT HALL

SEISMIC SAFETY PROJECT

#912782

Approved:

Rosemarie Rae

01/06/2020
Date

Rosemarie Rae
Vice Chancellor-Finance and Chief Financial Officer
University of California, Berkeley

Table of Contents

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
BERKELEY CAMPUS

Durant Hall Seismic Safety Project	912782	1227	CCCI: 6924 EPI: XXX
Project Title:	Project Number:	CAAN:	Cost Indexes:

A FUNDING SCHEDULE — Univ. Priority No.

Totals (000's)	Prefunded	2020-2021	2021-2022	2022-2023	2023-2024
P 300		P 300			
W 1,607		W 1,607			
C 18,103		C 18,103			
E		E			
(Tot. Proj.) $ 20,010	0	20,010	0	0	0

B FUNDING REFERENCES

	Column (1)	Column (2)	Column (3)	Total all Sources (4)	
Account No:					
Source:					

C COSTS

						%
0	Site Clearance	$	$	$	$	0.0
1	Construction				15434	77.1
2	Exterior Utilities					0.0
4	Site Development					0.0
5	Fees				1684	8.4
6	A&E/PP&C				989	4.9
7	Surveys, Tests, Plans, Specs					
					170	0.9
8	Special Items				834	4.2
	SUBTOTAL	$	$	$	$ 19111	95.5
9	Contingency 5.8%				899	4.5
	TOTAL P-W-C	$	$	$	$ 20010	100.0
3	Group 2&3 Equipment					0.0
	TOTAL PROJECT	$	$	$	$ 20010	
	Available Funding					
	Anticipated Surplus (Deficit)	$	$	$	$	

D FINANCING

State Funds (AB94)	**$20,010,000**
TOTAL	$ **20,010,000**

E STATUS OF PROJECT:

Name:	Shannon Holloway	Signature:		Budget No.	1
Title:	Director	Title: Director, Capital Projects		Date	
Prepared By:	C. Tsang	Approved for Campus, Date: 01/06/2020		Orig Date	12/13/2019
Program:	Fiscal:	Signature:		Revised	
Cost:		Title:			
		Approved AVP-PPC, Date:			

CAPITAL IMPROVEMENT BUDGET
ANALYTICAL DATA

UNIVERSITY OF CALIFORNIA

BERKELEY CAMPUS

Project Title:	Project Number:	CAAN:	Cost Indexes:
Durant Hall Seismic Safety Project	**912782**	**1227**	CCCI: **6924** EPI: **XXX**

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources (4)	
ASF per PPG **12/19**	ASF	ASF	ASF	**11,539**	ASF
ASF Current	ASF	ASF	ASF	**11,539**	ASF
OGSF	OGSF	OGSF	OGSF	**22,038**	OGSF
Ratio (ASF Current/OGSF)	to 1.00	to 1.00	to 1.00	**0.52**	to 1.00
Construction Cost per ASF	/ASF	/ASF	/ASF	**$1,337.54**	/ASF
Construction Cost/ OGSF	/OGSF	/OGSF	/OGSF	**$700.33**	/OGSF
Total PWC Cost per ASF	/ASF	/ASF	/ASF	**$1,734.15**	/ASF
Total PWC Cost per OGSF	/OGSF	/OGSF	/OGSF	**$907.99**	/OGSF
Gr. 2&3 Equip. Cost/ ASF	/ASF	/ASF	/ASF	**$0.00**	/ASF

G CONSTRUCTION COST ANALYSIS

	COSTS	UNIT COSTS $/ASF	UNIT COSTS $/OGSF	%	REMARKS
• Concrete & Structure	$				
• Closing -in					
• Finishing					
• Group 1 Equipment					
a. SUBTOTAL-Gen Constr.	$	$	$		
b. HVAC					
c. Plumbing					
d. Electrical					
e. Elevators					
f. Other					• Identify
TOTAL BUILDING					
COST ONLY	$	$	$	**0.0**	
g. Additional Bldg. Costs					• Identify
TOTAL BUILDING +					
ADD'L COSTS	$	$	$		
h. Other Construction		Identify			
i. Other Construction		Identify			
TOTAL CONSTRUCTION COST	$	Same as Schedule C, Item1 (line 24) Page 1			

H NOTES:

Items included under 8.0 Special Items:

Advanced Planning Expenses	325
Special Consultants	115
Hazardous Materials Assessments	10
Preconstruction Services	75
Project Reviews	210
Code Compliance Fees	99
TOTAL	834

Budget No.	
Date	
Orig Date	**12/13/2019**
Revised	

Prepared By: C. Tsang

2. EXECUTIVE SUMMARY

The proposed Durant Hall Seismic Safety project will reinforce the building to improve its resistance to seismic forces and provide life safety protection to its occupants during a large earthquake. In addition, these reinforcements will maintain use of an important supply of well-located space critically needed to support campus programs. Durant Hall has a Seismic Performance Rating of VI.

Durant Hall Seismic Safety project will implement seismic improvements to achieve a seismic performance Level IV compliance with the UC Seismic Safety Policy requirements. Seismic Tier 1 and Tier 2 analyses were conducted for the building. The main lateral force resisting elements of this structure are the perimeter concrete shear walls. The walls are stiff and brittle due to the lack of steel reinforcing. The walls will attract effectively all of the seismic load but with little to no ability to effectively dissipate the demands through ductility. This represents the main seismic deficiency. There are two retrofits schemes that have been developed to address the seismic conditions differently. To carry out the seismic retrofit work, Durant Hall will be closed for the duration of the project.

Durant Hall serves as the College of Letters and Sciences (L&S) dean's office, housing many administrative functions of the college. Accordingly, space types are all office-related. Durant Hall is a good match for the long-term needs of the college because its location in the central portion of the campus provides better proximity to all the departments it serves; the central campus location continues to facilitate daily intensive access by students to L&S services. See Location map Attachment 1.

3. PROBLEM STATEMENT

a. Existing Building Description

Durant Hall is a four story, 22,210 gross–square-foot (gsf) structure. It was designed by John Galen Howard for the Department of Jurisprudence (now the School of Law) and completed in 1911. The building was originally named Boalt Hall, in honor of San Francisco attorney, John H. Boalt, whose widow donated most of the construction cost. The building acquired the name of Durant Hall in 1951 when the School of Law moved to its current facility. The name honors Henry Durant, the first president of the University of California.

Durant Hall is on the National Register of Historic Places and is listed on the State Historic Resources Inventory. The building is a remarkable example of the classicist design principles which distinguish the work of John Galen Howard. See Figure 1. Durant Hall was renovated in 2010 and included improvements to mechanical, electrical, and fire alarm and protection systems and provisions for universal access to meet current standards. The structure was considered to be compliant with the UC Seismic Safety Policy requirements at that time.

Figure 1 - Durant Hall

Durant Hall is a four story building and is approximately 52 feet tall, rectangular in shape with a footprint of about 82 feet by 72 feet. The roof is a hip roof with a 7:12 slope. The top portion of the hip has a glass skylight that exposes the second floor through a large opening at the center of the third floor. The classical exterior is clad in Raymond Sierra granite ashlar blocks and the roof is of unglazed red earthenware Mission tiles. See Figure 2.

The gravity load structural system consists of reinforced concrete slabs on steel I beams framing into steel plate girders. The first floor is a concrete slab-on-grade. The steel girders frame into concrete encased, built-up steel columns. The lateral load system consists of a perimeter, unreinforced concrete shear wall. The concrete slab serves as horizontal diaphragms and the concrete shear walls as the vertical elements. The walls and the columns are founded on reinforced concrete spread footings.

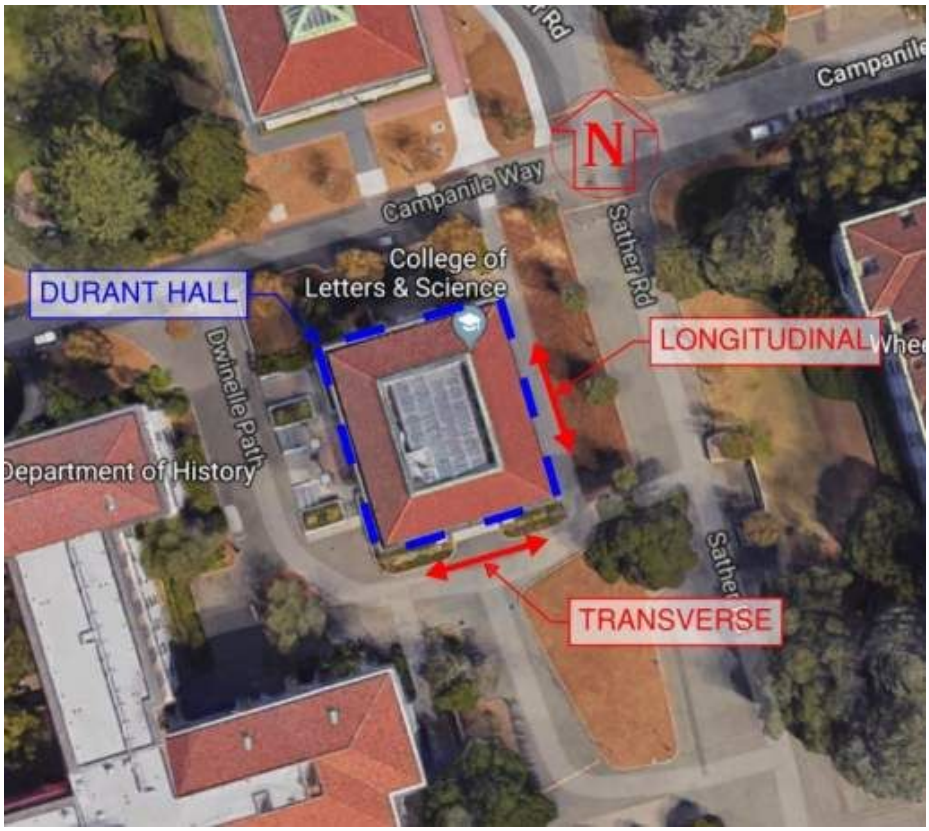


Figure 2- Building geometry

b. Occupancy Information

Durant Hall is an academic administrative office building for the College of Letters & Science, the largest and most diverse of UC Berkeley's colleges and schools. The ground floor houses the L&S Budget Office as well as various meeting spaces, some of which are used for scheduled courses when needed. There is a large conference room on the first floor, and the second floor atrium is used for events such as parties, memorial services, award ceremonies, fundraising events/dinners, and lecture series. The upper floors house the L&S Deans Offices, including the deans of Mathematical and Physical Sciences, Biological Sciences, Arts and Humanities, Social Science, and the Executive Dean for the College of Letters & Science. Other staff in the building include those in academic personnel and fundraising for each division. There are approximately 50 campus staff and student employees housed in Durant Hall.

c. Seismic Condition

Durant Hall has a Seismic Performance Rating of VI and will be retrofitted to attain Seismic Performance Rating IV by 2030 in order to meet the UC Seismic Safety Policy.

The following deficiencies have been identified for this structure:

- Wall Shear Stress: The wall shear stresses for this building are high when considering it as a concrete shear wall building. The existing drawings indicate that the concrete walls do not contain rebar and as a result they would have a low ductility capacity. This deficiency poses a substantial falling hazard and large loss of the lateral systems strength and stiffness.

- Reinforcing Steel: Reinforcement is only shown in locations which require reinforcement for gravity demands. No typical concrete reinforcing is specified for the thick perimeter walls. These walls have significant stiffness due to their thickness, but limited strength and ductility due to the lack of reinforcement. These walls likely result in a potential falling hazard and may contribute to the significant loss of lateral system strength and stiffness.

- Foundation Dowels: Deficient due to the lack of wall reinforcement. This deficiency limits the walls' ability to transfer inertial forces to the foundation.

- Load Path: The concrete slab is not positively connected to the steel framing nor does it contain additional bars for chord reinforcement. This is a lapse in the load path and may result in increased diaphragm deformations and limit the diaphragms ability to transfer inertial forces to the concrete perimeter walls.

- Overturning: The height to width dimensions indicate that this building is susceptible to overturning. This puts increased demands on the soil below the foundation and increased deformation demand in the building's structural elements. These increased deformations will strain the non-ductile system and may increase the deformation demands on the structure.

d. Deferred Maintenance, Life Safety, and Accessibility

The deferred maintenance (DM) for Durant Hall is very minor, since the building was renovated in 2010, and DM work will be included in the project. This includes repair/paint of the steel gutter, parapet wall painting, carpet replacement, skylight repair and replacement of the fire alarm control panel. With respect to code-required Fire Life Safety and Accessibility upgrades, the 2010 renovations provided fire sprinklers and upgraded the elevator system, and the code-required work is anticipated to be minimal.

4. ALTERNATIVES CONSIDERED

Durant Hall functions well in its role as a central location for administrative and leadership functions for the College of Letters and Sciences. Three alternatives to the project were considered.

a. "Do Nothing" Option:

One way to address the exposure to seismic risk is to vacate, or de-populate the building such that the level of use is reduced to the extent that the risk to building occupants is minimized. To accomplish this in Durant Hall, not only would critical programs and resources need to be relocated, but core functions would as well. This alternative is infeasible because the building is robustly used, and no alternative space is available for the critical programs and functions that currently occupy Durant Hall.

b. Demolition and Replacement Option:

Durant Hall is a significant historical resource and is one of the most significant resources on the campus. The building is a remarkable example of the classicist design principles which distinguish the work of John Galen Howard, and its demolition is not practical or in keeping with University practice. The lack of campus space for the current occupants, and limited funds for investment in a new structure render this option infeasible. The cost of the seismic improvement is a fraction of the cost to expand and rebuild.

c. Retrofit to a Level III Option:

To increase the resilience and longevity of the University's capital assets, the project will consider designing to a Level III rating. This would exceed the minimum requirement but may permit the building to perform better in a large magnitude earthquake. However, the cost of achieving a Level III may not be within the budget. During the design process, the campus will explore engineering options with the project structural team in order to understand the opportunities and constraints associated with retrofitting to a III rating instead of a IV rating, as currently planned. Should a III rating be feasible within the project budget, the building would be improved to III.

5. PROJECT DESCRIPTION.

a. Seismic Retrofit

The Durant Hall Seismic Safety project will be designed and implemented in accordance with the current University of California Seismic Safety Policy and California Building Code to achieve a Performance Level IV. The seismic evaluation of the structure identified wall shear stress, lack of wall reinforcement, and that the building is susceptible to overturning. The main lateral force resisting elements of this structure are the perimeter concrete shear walls. The walls lack steel reinforcing. The walls will attract effectively all of the seismic load but with little to no ability to effectively dissipate the demands through ductility. This represents the main seismic deficiency.

Two retrofits schemes have been developed to address this differently:

Retrofit Scheme A: This retrofit scheme employs base isolation to focus the structural deformations in an isolation plane and limit the forces that are transmitted to the superstructure. In order to achieve this, the structure would need to be shored up at each of the columns so the isolators can be installed below them. The isolators will bear on the existing spread footings which need to be strengthened and tied together with new grade beams. The existing slab on grade would be demolished, and a suspended slab would be installed utilizing a typical steel framing system. Utility services to the building that pass through this plane will need to also be modified with joints to accommodate the large lateral movement. Similarly, the elevator rails that are currently founded at grade, in a pit, will need to be suspended from the new 1st floor to move laterally with the superstructure.

Retrofit Scheme B: This scheme focuses on strengthening the existing system to meet the expected demands. This retrofit scheme strengthens the existing brittle elements and introduces ductility into the system. This is done by strengthening and widening the existing foundations at the corners of the structure and installing new 14” shotcrete walls up the height of structure. Providing steel in-plane diaphragm braces will allow the existing shafts to remain. Strengthening the existing perimeter shear walls by using various techniques are elaborated upon below:

a. Center coring: This technique drills through the unreinforced shear wall and fills the cores with reinforcement and grout to improve the strength and ductility of the wall segments.

b. Fiberglass Reinforced Panel (FRP) layers can be applied to the walls and bonded to the existing concrete to improve the strength and ductility of the existing system.

c. New reinforced concrete walls can be added to the back face of the existing concrete walls and attached to the perimeter concrete walls with dowels. In addition to strengthening the vertical components, the diaphragm can be addressed by providing chord reinforcement in the diaphragm either through shear connections to the existing steel beams or adding in chord reinforcement to the existing diaphragm. It is also recommended to provide façade anchors back to the existing structure.

The seismic project will move forward with the retrofit scheme B as the preferred option due to the higher cost of Retrofit Scheme A.

Information regarding existing building materials and soil bearing capacity etc. is unknown at this point and reasonable assumptions per ASCE 41-17 have been made to develop a retrofit scheme. Further investigation will need to include material testing primarily to confirm concrete strengths and to validate the anchorage of the exterior granite.

b. Required Code Upgrades

The project will be reviewed by the California Division of the State Architect (DSA) for compliance with path of travel accessibility per California Building Code (CBC) Section 11B-202.4.

6. DELIVERY METHOD AND PROJECT SCHEDULE

a. Delivery Method:

The proposed project will be delivered by the Berkeley campus and the anticipated delivery method is construction manager at risk (CMAR). The seismic upgrade will be completed in one phase. Durant Hall would be closed for the majority of the project.

b. Project Schedule:

Design selection for the project work will begin in July 2020; construction schedule is anticipated to commence on July 2021 and be completed in April 2023. See Attachment 2 for project schedule.

7. FUNDING PLAN

The proposed Durant Hall Seismic Safety project will be funded by $20,010,000 in external financing supported by State General Funds (California Education Code Sections 92495 et seq.).

8. COST BASIS

The campus has completed a Tier 2 seismic analysis, a Facility Condition Assessment, and an initial cost analysis by an external consultant. Project costs will be further refined during detailed programming.

Temporary occupant relocation costs associated with the implementation of the project will be funded separately by the campus.

9. SUSTAINABLE PRACTICES

The project will comply with the University of California Policy on Sustainable Practices. As required by policy and campus goals for carbon-neutrality, the project will adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

10. RELATIONSHIP WITH UNIVERSITY MISSION AND OBJECTIVES

The project supports the instruction and research mission of the University of California by providing seismically safe facilities for teaching and research.

Attachments:

Attachment 1: Project Location
Attachment 2: Project Schedule
Attachment 3. Environmental Impact Classification

Attachment 1: Project Location

PROJECT SCHEDULE
UNIVERSITY OF CALIFORNIA, BERKELEY

PROJECT: Durant Hall Seismic Safety Project

ACCOUNT NO: 912782

DATE: 1/6/2020

ACTIVITY	No. of Months	% Complete	FISCAL YEAR: July 2020-21 (J A S O N D J F M A M J)	July 2021-22 (J A S O N D J F M A M J)	July 2022-2023 (J A S O N D J F M A M J)	July 2023-2024 (J A S O N D J F M A M J)	July 2024-2025 (J A S O N D J F M A M J)	July
Preliminary Plans	3							
Preliminary Plans Review	1							
Working Drawings	6							
Agency Review	2							
Working Drawings Review	1							
Bid/Award	2							
Construction	20							
Final Completion/Occupancy	2							
Cumulative Calendar Months	34							

Approved:
Title: Director - Capital Projects

UNIVERSITY OF CALIFORNIA -- ENVIRONMENTAL IMPACT CLASSIFICATION

Campus: Berkeley **Project Account:** 912782

Project Title: Durant Hall Seismic Safety Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map.

☐ **I** **EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970**
When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA.

General/Statutory Exemption: §

☑ **II** **CATEGORICALLY EXEMPT* --** This project falls under the indicated Class(es) of Exemption(s), none of the exeptions to the exemption apply (15300.2), and there is no significant effect on the environment. (For complete list see CEQA Guidelines Section 15300):

- ☑ Class 1: Existing facilities
- ☐ Class 2: Replacement or Reconstruction
- ☐ Class 3: New Construction of Small Structures
- ☐ Class 4: Minor Alterations to Land
- ☐ Class 6: Information Collection
- ☐ Class 11: Accessory Structures
- ☐ Class 13: Acquisitions for Conservation
- ☐ Class 16: Transfer of Ownership of Land in Order to Create Parks
- ☐ Class 17: Open Space Contracts
- ☐ Class 23: Normal Operations
- ☐ Class 25: Transfer of Ownership of Land to Preserve Open Space
- ☐ Class 30: Minor Actions to Prevent Release of Hazardous Substances
- ☑ Class 31: Historical Resource Restoration/Rehabilitation
- ☐ Class 32: Infill Projects
- ☐ Class 33: Small Habitat Restoration Projects
- ☐ Other:

***Exemptions should be supported by a memorandum to the file documenting project compliance with the specific exemption conditions and exceptions to ensure CEQA defensibility.**

☐ **III** **INITIAL STUDY --** This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.
☐ Stand-Alone Checklist ☐ Tiered Initial Study (15152):

☐ **IV** **ENVIRONMENTAL IMPACT REPORT (EIR) --** It is known that the project will have a significant effect on the environment and an EIR will be/has been prepared.
☐ Programmatic ☐ Stand-Alone (Project-Specific)
Additional project analysis:
☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR

Real Estate Transaction Type: ☐ Acquisition ☐ Sale ☐ Lease ☐ Easement ☐ License

Project Description: *[Insert brief project description, provide supporting documentation as appropriate]*

The Durant Hall Seismic Safety project will implement seismic improvements to achieve compliance with the UC Seismic Safety Policy requirements as updated in 2017. In addition, these reinforcements will maintain use of space that is critically needed to support campus teaching and research programs. Durant Hall is rated Seismic Performance Level VI, and significant structural damage is anticipated in the event of a moderate to large earthquake. Durant Hall has a backlog of deferred maintenance. Durant Hall is listed on the National Register of Historic Places. The project will not result in a significant increase in square footage. The action is categorically exempt under Class 1, Existing Facilities. This will include rehabilitation of deteriorated structures, facilities, and mechanical equipment to meet current standards of public health and safety. In addition, on a separate and independent basis, the action is categorically exempt under Class 31, Historical Resource Restoration/Rehabilitation. This consists of maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of the historical resource in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

V. Does this project conform to an approved LRDP? ☑ **YES** ☐ **NO** ☐ **N/A**

VI. CAMPUS ADMINISTRATION

Prepared by: T. Green Date: 1/3/2020 [sign] Timothy P Green

Local Approved by W. Hillis Date: 1/3/2020 [sign]

VII. OFFICE OF THE PRESIDENT ☐ Concur with Classification ☐ Do not Concur

Signed: Date: 1/10/2020

FORM DATE 02/2017 UCOP Form EIC

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Berkeley – Moffitt Library Seismic Safety Project	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$5,327	PWCE	$5,327

Budget Request Summary

Moffitt Library Seismic Safety Project - $5,327,000 for Preliminary Plans, Working Drawings, Construction, and Equipment. Moffitt Library has a Seismic Performance Rating (SPR) of VI, and upon completion of work, the SPR of Moffitt Library will be upgraded to IV. The project will reinforce the building to improve its resistance to seismic forces and provide life safety protection to its occupants during a large earthquake. Moffitt library is a five-level, 149,923 gross-square-foot building serving as the undergraduate hub for connected teaching, learning, and discovery at UC Berkeley. The total project costs are estimated at $5,327,000 including Preliminary Plans ($73,000), Working Drawings ($329,000), Construction ($4,700,000) and Equipment ($225,000). The construction amount includes $4,096,000 for the construction contract, $278,000 for contingency, and $326,000 for architectural and engineering services. To carry out the seismic retrofit work, Moffitt Library will be closed in phases, including the summer and fall of 2020. Preliminary Plans are scheduled to begin and complete in July 2020. Working Drawings are scheduled to begin August 2020 and complete in September 2020. Construction, in phases, is scheduled to begin in December 2020 and complete in August 2021.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**6924**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Colleen Connor	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

Berkeley Capital Strategies
UNIVERSITY OF CALIFORNIA

PROJECT PLANNING GUIDE

for

MOFFITT LIBRARY

SEISMIC SAFETY PROJECT

Approved:

Rosemarie Rae
Vice Chancellor-Finance and Chief Financial Officer
University of California, Berkeley

01/06/2020
Date

Table of Contents

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
BERKELEY CAMPUS

Project Title:	Project Number:	CAAN:	CCCI:	Cost Indexes:
Moffitt Library Seismic Safety Project	**TBD**	1299	EPI:	**6924** / **XXX**

A FUNDING SCHEDULE — Univ. Priority No.

Totals (000's)	Prefunded	2020-2021	2021-2022	2022-2023	2023-2024
P **73**		P **73**			
W **329**		W **329**			
C **4,700**		C **4,700**			
E **225**		E **225**			
(Tot. Proj.) $ **5,327**	**0**	**5,327**	**0**	**0**	**0**

B FUNDING REFERENCES

	Column (1)	Column (2)	Column (3)	Total all Sources (4)
Account No:				
Source:				

C COSTS

						%
0	Site Clearance	$	$	$	$	0.0
1	Construction				**4096**	78.7
2	Exterior Utilities					0.0
4	Site Development					0.0
5	Fees				**375**	7.2
6	A&E/PP&C				**311**	6.0
7	Surveys, Tests, Plans, Specs					
					43	0.8
8	Special Items				**104**	2.0
	SUBTOTAL	$	$	$	$ **4929**	94.7
9	Contingency 6.8%				**278**	5.3
	TOTAL P-W-C	$	$	$	$ **5207**	**100.0**
3	Group 2&3 Equipment				**120**	2.3
	TOTAL PROJECT	$	$	$	$ **5327**	
	Available Funding					
	Anticipated Surplus (Deficit)	$	$	$	$	

D FINANCING

State Funds (AB94)	**$5,327,000**
TOTAL	$ **5,327,000**

E STATUS OF PROJECT:

Name:	Shannon Holloway	Signature:	Budget No.	
Title:	Director	Title: Director, Capital Projects	Date	**1/6/2020**
Prepared By:	Nick Morisco	Approved for Campus, Date: 01/06/2020	Orig Date	**6/12/2019**
Program:	Fiscal:	Signature:	Revised	**1/6/2020**
Cost:		Title:		
		Approved AVP-PPC, Date:		

CAPITAL IMPROVEMENT BUDGET
ANALYTICAL DATA

UNIVERSITY OF CALIFORNIA

BERKELEY CAMPUS

Moffitt Library Seismic Safety Project	TBD	1299	CCCI: 6924 EPI: XXX
Project Title:	Project Number:	CAAN:	Cost Indexes:

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources (4)	
ASF per PPG 1/20	ASF	ASF	ASF	**90,474**	ASF
ASF Current	ASF	ASF	ASF	**90,474**	ASF
OGSF	OGSF	OGSF	OGSF	**149,923**	OGSF
Ratio (ASF Current/OGSF)	to 1.00	to 1.00	to 1.00	**0.60**	to 1.00
Construction Cost per ASF	/ASF	/ASF	/ASF	**$45.28**	/ASF
Construction Cost/ OGSF	/OGSF	/OGSF	/OGSF	**$27.32**	/OGSF
Total PWC Cost per ASF	/ASF	/ASF	/ASF	**$57.55**	/ASF
Total PWC Cost per OGSF	/OGSF	/OGSF	/OGSF	**$34.73**	/OGSF
Gr. 2&3 Equip. Cost/ ASF	/ASF	/ASF	/ASF	**$1.33**	/ASF

G CONSTRUCTION COST ANALYSIS

	COSTS	UNIT COSTS $/ASF	UNIT COSTS $/OGSF	%	REMARKS
• Concrete & Structure	$				
• Closing -in					
• Finishing					
• Group 1 Equipment					
a. SUBTOTAL-Gen Constr.	$	$	$		
b. HVAC					
c. Plumbing					
d. Electrical					
e. Elevators					
f. Other					• Identify
TOTAL BUILDING					
COST ONLY	$	$	$	0.0	
g. Additional Bldg. Costs					• Identify
TOTAL BUILDING +					
ADD'L COSTS	$	$	$		
h. Other Construction		Identify			
i. Other Construction		Identify			
TOTAL CONSTRUCTION COST	$	Same as Schedule C, Item1 (line 24) Page 1			

H NOTES:

Items included under 8.0 Special Items:

8.3	Hazardous Materials Assessment	10.5
8.5	Preconstruction Services	4.5
8.6	Project Reviews	36
8.8	Code Compliance Fees	53
	Total	104

Budget No.	
Date	1/6/2020
Orig Date	6/12/2019
Revised	1/6/2020

Prepared By: Nick Morisco

2. EXECUTIVE SUMMARY

The proposed Moffitt Undergraduate Library Seismic Safety project will reinforce the building to improve its resistance to seismic forces and provide life safety protection to its occupants during a large earthquake. In addition, these reinforcements will maintain use of an important supply of well-located space critically needed to support campus programs. Moffitt Library has a Seismic Performance Rating of VI.

Moffitt Library Seismic Safety project will implement seismic improvements to a Performance Level IV to achieve compliance with the UC Seismic Safety Policy requirements. The seismic Tier 3 analysis has identified that the columns are shear critical. The structural work will include strengthening of the columns with additional concrete, steel cladding, or fiber wrap dependent on aesthetics and structural condition of the columns in different floors and locations.

3. PROBLEM STATEMENT

Moffitt Library was seismically retrofitted per the 1988 California Building Code in 1992. The retrofit added four "L" shaped concrete walls, symmetrically placed near the corners of the building. However, based on the results of a recent evaluation, the building does not satisfy the current requirements for the expected seismic performance rating based upon the California Building Code Requirements. Accordingly, this project will implement seismic improvements to achieve compliance with the UC Seismic Safety Policy requirements.

4. EXISTING BUILDING DESCRIPTION

Moffitt Library is a five level, 149,923 gross-square-foot structure that was designed according to the 1964 Uniform Building Code. Named for former Regent and longtime library benefactor James K Moffitt, Moffitt Undergraduate Library was designed by John Carl Warnecke & Associates in 1967. The building is constructed of cast-in-place concrete posts and beams, and because it is on a hill, possesses partially below grade spaces and building access at several of its five levels. Proximity to Doe Library was the reason for its siting. Moffitt Library is the access point to the 2.5 million volumes contained in the adjacent below-grade David Pierpoint Gardner Stacks.

Moffitt Library is the undergraduate hub for connected teaching, learning, and discovery at UC Berkeley and fulfills a crucial role in the university's mission to empower students in an information-rich, digital age. A 2016 renovation of floors 4 and 5 of Moffitt Library introduced transparency to the east façade and initiated the transformation of the library into a place for interactive and dynamic modes of learning and research through the creation of a variety of workspaces for individual and collaborative study. The library supports programs and spaces that engage students in creative activities associated with data visualization, makerspaces, media authoring and editing, and virtual and augmented reality studios. See Figures 1, 2, and 3.

Figure 1: Moffitt Library South Elevation

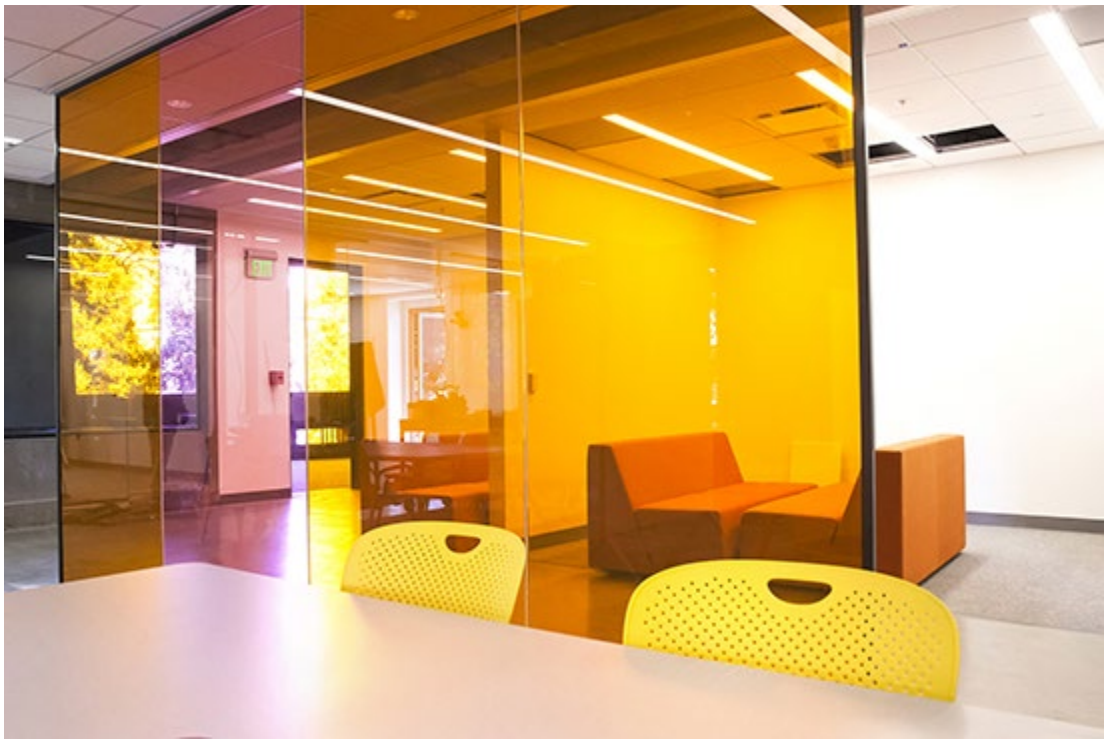


Figure 2: Renovation of Moffitt Library Floors 4 and 5, 2016

Space types currently located on the above grade levels include the main undergraduate library, the Center for Connected Learning, media resource center, Free Speech Movement Café. Moffitt Library is one of the busiest campus libraries with undergraduate course reserves, computer laboratory, makerspace, media center, copy center and campus classrooms. The Free Speech Movement (FSM Café, centrally located at the south entrance to Moffitt Library on Floor 3, is a gathering and study place. The Café honors Mario Savio, who played a key role in the struggle for free speech at Berkeley, and commemorates the events of the Free Speech Movement at UC Berkeley.

The lower three levels are partially set within the hillside to the east. The floor-to-floor height is 14 feet. The floor plates and roof follow a 36 feet - 4 inches by 36 feet - 4 inches column grid. The primary girders form a two-way grid of 54 inches deep post-tensioned beams, supported on reinforced concrete columns. Secondary beams also form a two-way grid between the girders.

Figure 3: Southwest Facade, exterior of the FSM Cafe set into the hillside

The columns, which are an important feature throughout the building, are square in plan and tapered along their height, measuring 27 inches at the top and 39 inches at the base. The shape remains constant, but the reinforcement varies throughout the building. The ground floor at the east end of the building is set three levels into the hillside. The ground floor is open to the west. The north and south elevations are partially embedded up to three levels. The reinforced concrete exterior walls below grade are integral to the floor framing. Reinforced concrete drilled piers were part of the original shoring system. The piers are connected to the perimeter walls and extend below the walls.

5. SEISMIC CONDITION

The structure was seismically retrofitted per the 1988 California Building Code in 1992. The retrofit added four “L” shaped concrete walls, symmetrically placed near the corners of the building. However, based on

the results of the most recent evaluation, a Tier 1 and Tier 3 engineering assessments, it is concluded that the building currently does not satisfy the requirements for the expected seismic performance level based upon the California Building Code Requirements. The building has a Performance Rating of VI and will be retrofitted to attain Seismic Performance Rating of IV by 2030 in order to meet the UC Seismic Safety Policy.

6. ALTERNATIVES CONSIDERED

Moffitt Library functions well in its role as a hub for the undergraduate library building, but two alternatives to a complete seismic retrofit were considered.

a. "Do Nothing" Option

One way to address the exposure to seismic risk is to vacate, or de-populate the building such that the level of use is reduced to the extent that the risk to building occupants is minimized. To accomplish this in Moffitt Library, not only would critical library programs and resources need to be relocated, but core library functions would as well. This alternative is infeasible because the building is robustly used, and no alternative space is available for the critical programs and functions that currently occupy Moffitt Library.

b. Demolition and Replacement Option

Occasionally with an older structure, it can be more cost-effective to demolish the structure and rebuild. Lack of campus space for the current occupants, and limited funds for investment in a new structure render this option infeasible. The cost of the seismic improvement is a fraction of the cost to expand and rebuild, and is able to be implemented while partially occupying the building.

c. Retrofit to a Level III Option

To increase the resilience and longevity of the University's capital assets, the project will consider designing to a Level III rating. This would exceed the minimum requirement but may permit the building to perform better in a large magnitude earthquake. However, the cost of achieving a Level III may not be within the budget. During the design process, the campus will explore engineering options with the project structural team in order to understand the opportunities and constraints associated with retrofitting to a III rating instead of a IV rating, as currently planned. Should a level III rating be feasible within the project budget, the building would be improved to III.

7. PROJECT DESCRIPTION

a. Seismic Retrofit

The Moffitt Undergraduate Library Seismic Safety project will be designed and implemented in accordance with the current UC Seismic Safety Policy and California Building Code to bring the building to a seismic performance level IV. The seismic evaluation of the structure identified the columns as critically deficient in shear resistance. The intent of the seismic retrofit is to strengthen the columns in order to yield an essential safely level of performance.

The structure, in its current configuration, is expected to perform well when subject to small and moderate levels of shaking, due to the strong and stiff walls added in the 1992 retrofit. However, studies involving section analysis of the existing structural construction documents and results of 3D pushover analyses

have revealed that many of the columns need retrofit due to the possibility of shear failures. Shear failures in columns constitute a loss of gravity load carrying capacity.

The work of this project involves strengthening columns by wrapping or cladding columns with additional material. A variety of materials have been presented as possibilities to enhance shear resistance. The proposed materials each have different aesthetic properties, durability and methods of construction to consider, as follows:

1. Concrete: The material is consistent with the visual vocabulary of the exposed structural concrete building. Aesthetic impact to consider is the change of column proportion. Drilling for epoxy dowels to integrate new concrete creates vibration and is loud. Staging for concrete construction and time to form and pour would need to be considered.
2. Steel cladding: The aesthetic differs from the building's architecture. Installation will likely involve drilling for epoxy dowel connections in order to install metal panels which would be pre-fabricated off-site.
3. Fiber wrap: Thinner material with aesthetic issues, which could be appropriate at locations which are enclosed and not exposed. Fiber wrapped columns could be encased with a beaded gypsum board or plaster for a more aesthetically pleasing finish.

Occupant impacts and duration of installation related to methods of construction will influence the final material choice for the column strengthening. The proposed materials have different aesthetic properties to consider and so the choice of material at individual columns may differ related to the exposed or concealed nature of a column within the building or a column's aesthetic relationship to exterior architecture of the building. This will be finalized during the project design phase.

b. Required Code Upgrades

The project will be reviewed by the California Division of the State Architect (DSA) for compliance with path of travel accessibility, per California Building Code (CBC) Section 11B-202.4. Moffitt Library's accessible path of travel to entrances and elements within the building has been reviewed and accepted by the DSA for previous projects. No changes to the existing path of travel are anticipated.

8. DELIVERY METHOD AND PROJECT SCHEDULE

a. Delivery Method:

The proposed project will be delivered by the Berkeley campus and the anticipated delivery method is construction manager at risk. The seismic upgrade will be completed in phases, to minimize the amount of time that the library needs to be closed to student use. Some floors require being closed during construction, while other areas of the building may remain open and occupied, although sound and vibration could be impactful. The library would be closed for the majority of the project, possibly over a semester and a break (winter or summer), to minimize the impact on the library users and occupants.

Three phases appear likely, divided by floor, however a conclusive direction will be finalized during the project design phase. These are the likely phases:

Floors 1 and 2:

Floor 1: Four columns require strengthening, and are located along the western exterior edge of the building. Peripheral retrofits would impact limited adjacent occupancy.

Floor 2: Six columns to be remediated, and are all exterior, that is, outside the building enclosure. Exterior retrofits would have minor impacts to adjacent occupancy.

Floor 3:

Twenty-two columns require strengthening, and are dispersed throughout the floor. This work could happen as a separate phase, to minimize the impact of a long library closure which would have a deleterious impact on the student population. Because of the need for expediency, every measure will be taken tominimize the duration of this phase of the work.

Floors 4 and 5:

Forty columns (twenty on each floor) require strengthening on these floors, all similar in nature. These floors have recently been renovated and so construction will be managed to minimize impact to the recent renovation. These floors could be closed for construction at the same time or may be addressed sequentially with one floor closed at a time.

b. Project Schedule:

The schedule is planned in two phases of construction.

Phase 1: Winter break of 2020/2021
Phase 2: Summer break of 2021

See Attachment 2 for project schedule.

9. FUNDING PLAN

The proposed Moffitt Library Seismic Safety project will be funded by $5,327,000 in external financing supported by State General Funds (California Education Code Sections 92495 et seq.).

10. COST BASIS

The budget accommodates accelerated construction effort for Phase 1, and the expected impacts to systems and interiors on the 3rd floor.

The campus has completed planning studies and cost analyses for the project. Maintaining building occupancy during construction presents a significant challenge and thus an adequate project contingency is required to address unforeseen issues that may arise.

Temporary occupant relocation costs associated with the implementation of the project will be funded separately by the campus.

11. SUSTAINABLE PRACTICES

The project will comply with the University of California Policy on Sustainable Practices. As required by policy and campus goals for carbon-neutrality, the project will adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

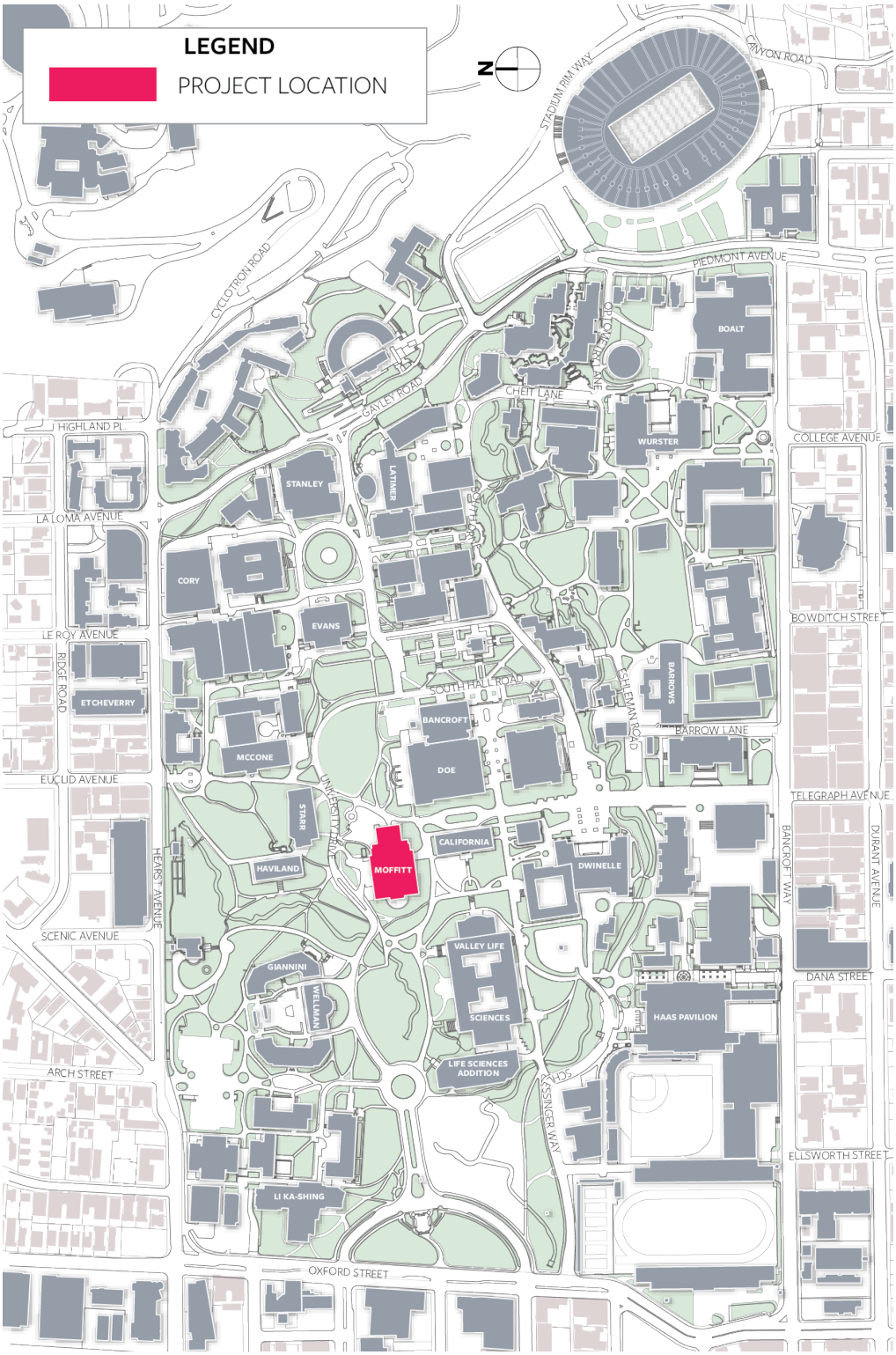
12. RELATIONSHIP WITH UNIVERSITY MISSION AND OBJECTIVES

This project supports the mission of the University of California by addressing seismic remediation for a heavily utilized library facility on the Berkeley campus.

Attachments:

Attachment 1. Project Location
Attachment 2: Project Schedule
Attachment 3. Environmental Impact Classification

Attachment 1. Project Location



Project Schedule

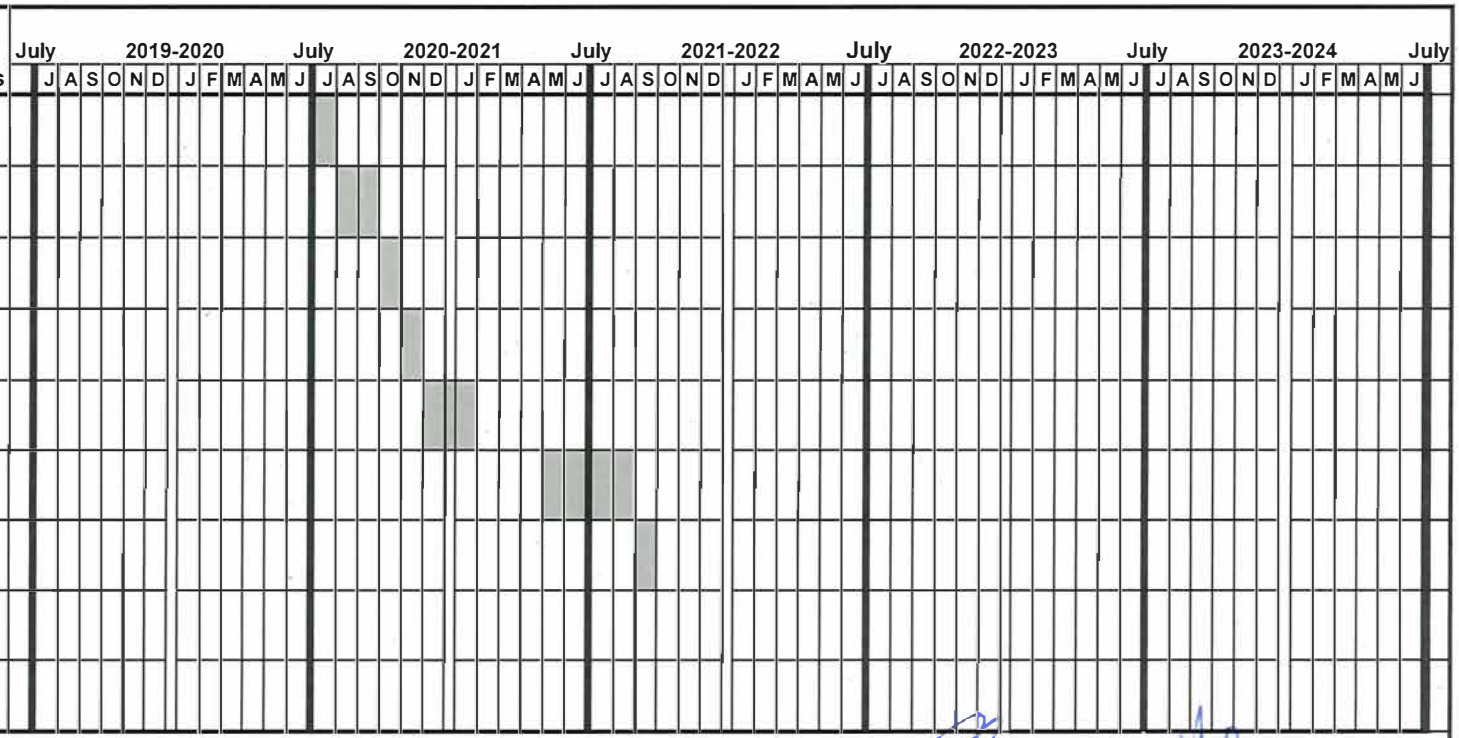
UNIVERSITY OF CALIFORNIA, BERKELEY

PROJECT: **Moffitt Library Seismic Safety Project**

ACCOUNT NO. **TBD**

DATE: 1/6/2020

ACTIVITY	No. of Months
Preliminary Plans	1
Working Drawings	2
Agency Review	1
Bid/Award Contract	1
Construction Phase 1	2
Construction Phase 2	4
Equipment	1
Cumulative Calendar Months	15



Approved: _____

Title: Director - Capital Projects

UNIVERSITY OF CALIFORNIA -- ENVIRONMENTAL IMPACT CLASSIFICATION

Campus: Berkeley **Project Account:** 912782

Project Title: Durant Hall Seismic Safety Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map.

☐ **I** **EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970**
When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA.

General/Statutory Exemption: §

☑ **II** **CATEGORICALLY EXEMPT* --** This project falls under the indicated Class(es) of Exemption(s), none of the exeptions to the exemption apply (15300.2), and there is no significant effect on the environment. (For complete list see CEQA Guidelines Section 15300):

- ☑ Class 1: Existing facilities
- ☐ Class 2: Replacement or Reconstruction
- ☐ Class 3: New Construction of Small Structures
- ☐ Class 4: Minor Alterations to Land
- ☐ Class 6: Information Collection
- ☐ Class 11: Accessory Structures
- ☐ Class 13: Acquisitions for Conservation
- ☐ Class 16: Transfer of Ownership of Land in Order to Create Parks
- ☐ Class 17: Open Space Contracts
- ☐ Class 23: Normal Operations
- ☐ Class 25: Transfer of Ownership of Land to Preserve Open Space
- ☐ Class 30: Minor Actions to Prevent Release of Hazardous Substances
- ☑ Class 31: Historical Resource Restoration/Rehabilitation
- ☐ Class 32: Infill Projects
- ☐ Class 33: Small Habitat Restoration Projects
- ☐ Other:

***Exemptions should be supported by a memorandum to the file documenting project compliance with the specific exemption conditions and exceptions to ensure CEQA defensibility.**

☐ **III** **INITIAL STUDY --** This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.
☐ Stand-Alone Checklist ☐ Tiered Initial Study (15152):

☐ **IV** **ENVIRONMENTAL IMPACT REPORT (EIR) --** It is known that the project will have a significant effect on the environment and an EIR will be/has been prepared.
☐ Programmatic ☐ Stand-Alone (Project-Specific)
Additional project analysis:
☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR

Real Estate Transaction Type: ☐ Acquisition ☐ Sale ☐ Lease ☐ Easement ☐ License

Project Description: *[Insert brief project description, provide supporting documentation as appropriate]*

The Durant Hall Seismic Safety project will implement seismic improvements to achieve compliance with the UC Seismic Safety Policy requirements as updated in 2017. In addition, these reinforcements will maintain use of space that is critically needed to support campus teaching and research programs. Durant Hall is rated Seismic Performance Level VI, and significant structural damage is anticipated in the event of a moderate to large earthquake. Durant Hall has a backlog of deferred maintenance. Durant Hall is listed on the National Register of Historic Places. The project will not result in a significant increase in square footage. The action is categorically exempt under Class 1, Existing Facilities. This will include rehabilitation of deteriorated structures, facilities, and mechanical equipment to meet current standards of public health and safety. In addition, on a separate and independent basis, the action is categorically exempt under Class 31, Historical Resource Restoration/Rehabilitation. This consists of maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of the historical resource in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

V. Does this project conform to an approved LRDP? ☑ **YES** ☐ **NO** ☐ **N/A**

VI. CAMPUS ADMINISTRATION

Prepared by: T. Green Date: 1/3/2020 [sign] Timothy P Green

Local Approved by W. Hillis Date: 1/3/2020 [sign]

VII. OFFICE OF THE PRESIDENT ☐ Concur with Classification ☐ Do not Concur

Signed: Date: 1/10/2020

FORM DATE 02/2017 UCOP Form EIC

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title
Berkeley-Stephens Hall Seismic Safety Project

Project Status and Type
Status: ☒ New ☐ Continuing
Type: ☒ Major ☐ Minor

Project Category *(Select one)*
☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*
☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$46,870	PWC	**$46,870**

Budget Request Summary
Stephens Hall Seismic Safety Project - $46,870,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections and high priority deferred maintenance to Stephens Hall, as well as those systems and areas that require repair as a result of seismic construction. The building has a Seismic Performance Rating (SPR) of VI, and would be upgraded to SPR IV. Stephens Hall is a six story, 60,363 gross-square-foot building housing several academic programs, research centers, and student service functions. Total project costs are estimated at $46,870,000, including Preliminary Plans ($692,000), Working Drawings ($3,247,000), and Construction ($42,931,000). The construction amount includes $36,764,000 for the construction contract, $2,297,000 for contingency, and $3,870,000 for architectural and engineering services. Preliminary Plans are scheduled to begin in July 2020 and complete in September 2020. Working Drawings are scheduled to begin in October 2020 and complete in March 2021. Construction is scheduled to begin in July 2021 and complete in June 2023.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**6924**

Requires Provisional Language
☐ Yes ☒ No

Budget Package Status
☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No
Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Colleen Connor	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

Berkeley Capital Strategies
UNIVERSITY OF CALIFORNIA

PROJECT PLANNING GUIDE

for

STEPHENS HALL

SEISMIC SAFETY PROJECT

#912781

Approved:

Rosemarie Rae

01/06/2020
Date

Rosemarie Rae
Vice Chancellor-Finance and Chief Financial Officer
University of California, Berkeley

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CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA

BERKELEY CAMPUS

Stephens Hall Seismic Safety Project	**912781**	**1488**	CCCI:	**6924**
			EPI:	**XXX**
Project Title:	Project Number:	CAAN:	Cost Indexes:	

A FUNDING SCHEDULE — Univ. Priority No.

Totals (000's)	Prefunded	2020-2021	2021-2022	2022-2023	2023-2024
P **692**		P **692**			
W **3,247**		W **3,247**			
C **42,931**		C **42,931**			
E		E			
(Tot. Proj.) $ **46,870**	**0**	**46,870**	**0**	**0**	**0**

B FUNDING REFERENCES

	Column (1)	Column (2)	Column (3)	Total all Sources (4)
Account No:				
Source:				

C COSTS

						%
0	Site Clearance	$	$	$	$	0.0
1	Construction				**36764**	78.4
2	Exterior Utilities					0.0
4	Site Development					0.0
5	Fees				**4055**	8.7
6	A&E/PP&C				**2317**	4.9
7	Surveys, Tests, Plans, Specs					
					549	1.2
8	Special Items				**888**	1.9
	SUBTOTAL	$	$	$	$ **44573**	95.1
9	Contingency 6.2%				**2297**	4.9
	TOTAL P-W-C	$	$	$	$ **46870**	**100.0**
3	Group 2&3 Equipment					0.0
	TOTAL PROJECT	$	$	$	$ **46870**	
	Available Funding					
	Anticipated Surplus (Deficit)	$	$	$	$	

D FINANCING

State Funds (AB94)	**$46,870,000**
TOTAL	$ **46,870,000**

E STATUS OF PROJECT:

Name:	Shannon Holloway	Signature:		Budget No.	**1**
Title:	Director	Title: Director, Capital Projects		Date	
Prepared By:	C. Tsang	Approved for Campus, Date: 01/06/2020		Orig Date	**12/13/2019**
Program:	Fiscal:	Signature:		Revised	
Cost:		Title:			
		Approved AVP-PPC, Date:			

CAPITAL IMPROVEMENT BUDGET
ANALYTICAL DATA

UNIVERSITY OF CALIFORNIA

BERKELEY CAMPUS

Project Title:	Project Number:	CAAN:	Cost Indexes:
Stephens Hall Seismic Safety Project	**912781**	**1488**	CCCI: **6924** EPI: **XXX**

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources (4)	
ASF per PPG **12/19**	ASF	ASF	ASF	**35,732**	ASF
ASF Current	ASF	ASF	ASF	**35,732**	ASF
OGSF	OGSF	OGSF	OGSF	**59,548**	OGSF
Ratio (ASF Current/OGSF)	to 1.00	to 1.00	to 1.00	**0.60**	to 1.00
Construction Cost per ASF	/ASF	/ASF	/ASF	**$1,028.89**	/ASF
Construction Cost/ OGSF	/OGSF	/OGSF	/OGSF	**$617.39**	/OGSF
Total PWC Cost per ASF	/ASF	/ASF	/ASF	**$1,311.71**	/ASF
Total PWC Cost per OGSF	/OGSF	/OGSF	/OGSF	**$787.10**	/OGSF
Gr. 2&3 Equip. Cost/ ASF	/ASF	/ASF	/ASF	**$0.00**	/ASF

G CONSTRUCTION COST ANALYSIS

	COSTS	UNIT COSTS $/ASF	UNIT COSTS $/OGSF	%	REMARKS
• Concrete & Structure	$				
• Closing -in					
• Finishing					
• Group 1 Equipment					
a. SUBTOTAL-Gen Constr.	$	$	$		
b. HVAC					
c. Plumbing					
d. Electrical					
e. Elevators					
f. Other					• Identify
TOTAL BUILDING					
COST ONLY	$	$	$	**0.0**	
g. Additional Bldg. Costs					• Identify
TOTAL BUILDING +					
ADD'L COSTS	$	$	$		
h. Other Construction		Identify			
i. Other Construction		Identify			
TOTAL CONSTRUCTION COST	$	Same as Schedule C, Item1 (line 24) Page 1			

H NOTES:

Items included under 8.0 Special Items:

Advanced Planning Expenses	325
Special Consultants	115
Hazardous Materials Assessments	10
Preconstruction Services	75
Project Reviews	210
Code Compliance Fees	153
TOTAL	888

Budget No.	
Date	
Orig Date	**12/13/2019**
Revised	

Prepared By: C. Tsang

2. EXECUTIVE SUMMARY

The Stephens Hall Seismic Safety project will reinforce the building to improve its resistance to seismic forces and provide life safety protection to its occupants during a large earthquake. The project will implement seismic improvements to achieve compliance with the UC Seismic Safety Policy and a Seismic Performance Rating of IV. In addition, the project will maintain use of an important supply of well-located space critically needed to support campus programs.

Stephens Hall has a Seismic Performance Rating of VI, and significant structural damage is anticipated in the event of a moderate to large earthquake. The seismic Tier 1 and 2 analyses have identified that the major deficiency in the existing building is overstressed shear walls given current seismic demands. A retrofit scheme using Fiber Reinforced Polymer overlay and shotcrete has been proposed to increase the rating to IV per the University's Seismic Safety Program. To carry out the seismic retrofit work, Stephens Hall will be closed for the duration of the project.

Stephens Hall serves as the home for several academic programs, research centers, and student service functions. It is well located in the central of campus, providing excellent proximity to students and the departments it serves. See Location Map Attachment 1.

3. PROBLEM STATEMENT

Stephens Hall has a Seismic Performance Rating of VI. A large earthquake could create a hazard to those in Stephens Hall in the building's current condition.

a. Existing Building Description

Background: Stephens Hall is a six story, 60,363 gross-square-foot (gsf) structure, designed by John Galen Howard as a student union and completed in 1923. The building is named after H. Morse Stephens, a former Professor of History and Dean of the College of Arts and Sciences. Stephens Hall is a Tudor style structure whose irregular plan and picturesque massing are well suited to its site on a winding section of Strawberry Creek. The exterior walls have numerous window openings. Several ornamental turrets and balustrade walls embellish the exterior façade of this building. See Figure 1.

Built with contributions from the alumni, faculty and students, the building was originally called the Student Union, and was renamed Stephens Hall in 1964. Original occupants included the Associated Students of the University of California (ASUC), athletic and alumni offices, student activities, men's and women's lounges, and a recreation center. The building was sold by the ASUC to the University in 1959, and changed its use in 1961 when the new student union at Telegraph and Bancroft was completed. Stephens Hall is listed on the State of California's Historic Resources Inventory.

Figure 1- Stephens Hall sloping toward Strawberry Creek on the south (right)

Building Structure: Stephens Hall is a highly irregular building with re-entrant corners and horizontal setbacks at almost every level. The original building walls were made of hollow clay tile that were subsequently replaced or strengthened with reinforced concrete infill panels and gunite. As shown in Figure 1, the North Wing extends an extra story higher than the South Wing. Furthermore, the irregular building plan and limited length of shear wall in the South Wing has also introduced torsion in the building. A 75’ long x 17’ wide concrete over metal deck floor was added in 1963 at the basement mezzanine level along the west perimeter. See Figures 2 and 3.

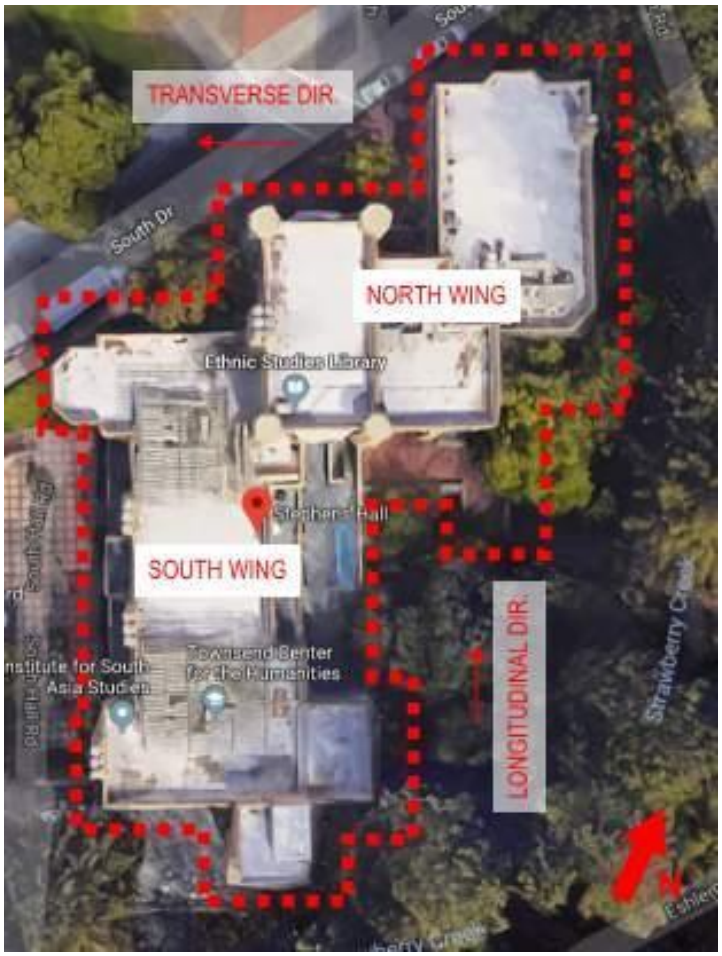

Figure 2 - Irregular Floor - Aerial view showing Stephens Hall irregular floor plan and complex layout

Figure 3: Steel framing added seismic strength in 1963

The primary gravity system of the building is composed of 4 to 5.5-inch thick one way slabs spanning between concrete beams, supported on concrete columns, which in turn are founded on spread footings. The column footings are tied together at the foundation level by a 6-inch thick, reinforced slab on grade. The original lateral system of the building seems to have been hollow clay tile shear walls that have been replaced or strengthened with reinforced gunite walls ranging in thickness from 4 to 12 inches thick. This strengthening was performed in two phases, in 1936 and 1963. The reinforced concrete infill and gunite strengthening in hollow clay tile walls don't seem to be positively anchored to adjacent structural elements and appear to be prone to out-of-plane failure in case of a seismic event. These infill panels are only dowelled into the foundation where they occur at the bottommost level. This limited dowelling of concrete infills and gunite strengthening, only at trim bars around openings and at foundations, demonstrates that shear-friction was assumed as means of transferring lateral shear from the diaphragms, through the gunite walls into the foundation.

b. Occupancy Information

Stephens Hall is a multi-disciplinary building housing several academic programs, research centers, and student service functions. Academic research units in the building include the Institute for South Asia Studies, the Institute for Slavic, East European & Eurasian Studies, Middle Eastern Studies Center, the Center for African Studies, and the Center for Science, Technology, Medicine & Society, the Academic Senate offices and the Ethnic Studies Library. Other academic programs in the building include the American Cultures Program, the International and Area Studies Teaching Program, the Cognitive Science Program, the Townsend Center for the Humanities, and the Othering and Belonging Institute. Student-facing services in the building include Summer Sessions, Study Abroad, and the Cal NERDS Diversity STEM programs and student center.

c. Seismic Condition

Tier 1 and Tier 2 analysis of Stephens Hall indicated a Seismic Performance Rating of VI. The major deficiency in the existing building is overstressed shear walls for current seismic demands and the corresponding desired performance objective. The load transfer mechanism of seismic forces from the diaphragms and gravity frames to shear walls relies on shear friction and bearing that also tends to overwhelm the existing gravity spandrels and columns, which were not designed for seismic load transfer. Stephens Hall does not have a regular plan layout and there are a number of horizontal and vertical setbacks as the framing progresses from the basement to the roof. This adds to the torsion and transfer forces at every level.

The major deficiencies of Stephens Hall are related to its overall geometry and layout.

1. Load Path: Discontinuous walls at horizontal setbacks cause a disruption in load path and may lead to high stresses and cracking in supporting elements due to overturning.
2. Vertical Irregularities: Similar to load path deficiency, vertical irregularity is caused due to discontinuous walls at horizontal setbacks.
3. Geometry: Seismic force resisting system at Level 4 and the roof are only 30 percent in horizontal dimension as compared to levels below. This introduces higher mode effects in the building that may lead to concentration of forces in certain lateral elements. Dynamic analysis is helpful to determine these unexpected loads.
4. Torsion: This building is highly irregular in plan with most of the shear walls concentrated near the north side of the building. This will cause torsion in the building that will enhance the shear stress demands on exterior walls.
5. Shear stress Check: Average shear stress in shear walls is over 100 psi (pounds per square inch). The walls may develop shear cracks during a seismic event.

In addition, the following non-structural deficiencies have been identified:

1. Unanchored reinforced concrete wall infills and gunite strengthening pose an interior falling hazard.
2. Heavy chimneys are present all along the building perimeter that pose a falling hazard. See Figure 4.
3. Heavy ornamental ceilings are located in two large rooms in the building.

Figure 4: Building turrets covered in structural fabric

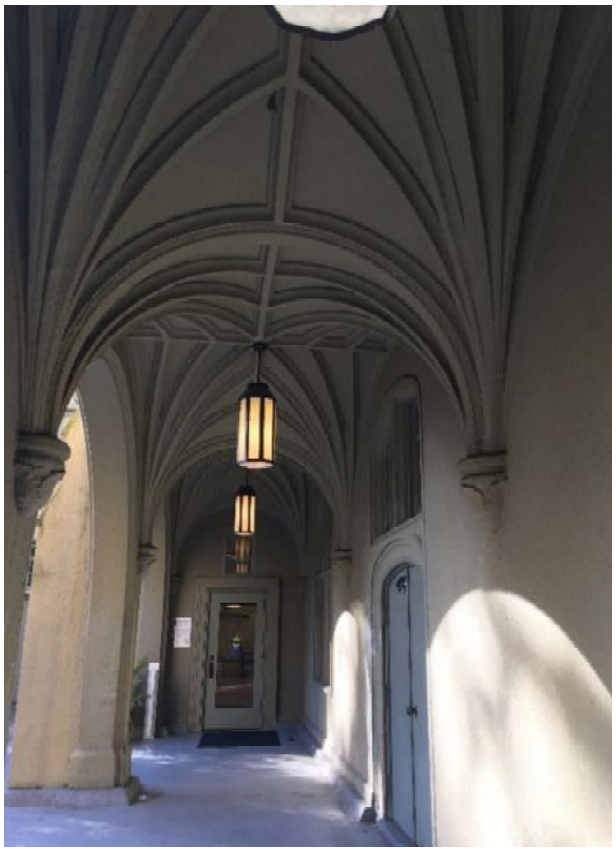

Figure 5: Heavy ceilings at building exterior

Figure 6: Visible cracks in exterior stucco

Stephens Hall has a Seismic Performance Rating VI and will be retrofitted to attain Seismic Performance Rating IV in order to meet the UC Seismic Safety Policy. To increase the resilience and long-term longevity of the University's capital assets, the project will consider designing to a III rating. At this point in the planning process, it is difficult to estimate the cost differential between retrofitting Stephens Hall to a Seismic Performance Rating IV and a Seismic Performance Rating III. During the design process, the campus will explore engineering options with the project structural team in order to understand the opportunities and constraints associated with retrofitting to a III rating instead of a IV rating, as currently planned. Should a level III rating be feasible within the project budget, the building would be improved to III.

d. Deferred Maintenance, Life Safety, and Accessibility

Stephens Hall has a significant backlog of deferred maintenance. Cost constraints prevent the complete backlog from being comprehensively addressed at this time; however, the project will repair or replace the most damaged and critically-located windows on each of the building elevations. Those systems and areas that require repair as a result of the seismic construction will be addressed.

The project will include code-required fire life safety and accessibility upgrades, including a fire sprinkler system and associated fire alarm upgrades. The fourth and fifth floors have no Americans with Disabilities Act (ADA) access and the project will include a new elevator to provide access to these floors. The existing passenger elevator, restrooms, and stairwells will also have work done for ADA compliance.

4. ALTERNATIVES CONSIDERED

Stephens Hall functions well in its role as a hub for multi-disciplinary office building space and academic research units.

a. "Do Nothing" Option:

One way to address the exposure to seismic risk is to vacate, or de-populate the building so that the level of use is reduced to minimize the risk to building occupants. To accomplish this in Stephens Hall, academic programs, research centers, and student functions would need to be permanently relocated. This alternative is infeasible because the building is robustly used, and no alternative space is available for the critical programs and functions that currently occupy Stephens Hall.

b. Demolition and Replacement Option:

Occasionally with an older structure, it can be more cost-effective to demolish the structure and rebuild. Lack of campus space for the current occupants, and limited funds for investment in a new structure render this option infeasible. Additionally, Stephens Hall is a significant historical resource and is listed on the State of California's Historic Resources Inventory.

c. Retrofit to a Level III Option:

To increase the resilience and long-term longevity of the University's capital assets, the project will consider designing to a Level III rating. This would exceed the minimum requirement but may permit the building to perform better in a large magnitude earthquake. However, the cost of achieving a Level III may not be within the budget. During the design process, the campus will explore engineering options with the project structural team in order to understand the opportunities and constraints associated with retrofitting to a III rating instead of a IV rating, as currently planned. Should a III rating be feasible within the project budget, the building would be improved to III.

5. PROJECT DESCRIPTION

a. Seismic Retrofit

The Stephens Hall Seismic Safety project will be designed and implemented in accordance with the current University of California Seismic Safety Policy and California Building Code. The seismic retrofit will be designed to meet the Seismic Performance Rating IV in the UC Seismic Safety Policy.

A retrofit scheme using Fiber Reinforced Polymer (FRP) overlay and shotcrete has been proposed to increase the rating to IV per UC Seismic Safety Program. The retrofit utilizes and enhances the capacity of existing elements along with providing a direct load path of seismic forces from the roof to the foundations without jeopardizing the gravity frames. The intent of the retrofit is to make the lateral system of the building flexibly controlled and promote a ductile failure mechanism in the shear walls.

b. Required Code Upgrades

The project will be reviewed by the California Division of the State Architect for compliance with path

of travel accessibility, per California Building Code Section 11B-202.4 and the Campus Fire Marshall for Fire Life Safety review.

6. DELIVERY METHOD AND PROJECT SCHEDULE

a. Delivery Method:
The proposed project will be delivered by the Berkeley campus and the anticipated delivery method is construction manager at risk. The seismic upgrade will be completed in one phase. Stephens Hall would be closed for the duration of the project.

b. Project Schedule:
The design work will commence in July 2020. Construction for the seismic retrofit is anticipated to begin in July 2021 and completed in August 2023. See Attachment 2 for project schedule.

7. FUNDING PLAN

The proposed Stephens Hall Seismic Safety project will be funded by $46,870,000 in external financing supported by State General Funds (California Education Code Sections 92495 et seq.).

8. COST BASIS

The campus has completed a Tier 2 seismic analysis and a Facility Condition Assessment through the ICAMP process and an initial cost analysis by an external consultant. Deferred Maintenance costs are based on campus estimates to complete the work as a component of the Stephens Hall Seismic Safety project and may not correspond with the opportunity costs identified in ICAMP. Project costs will be further refined during detailed programming.

Temporary occupant relocation costs associated with the implementation of the project will be funded separately by the campus.

9. SUSTAINABLE PRACTICES

The project will comply with the University of California Policy on Sustainable Practices. As required by policy and campus goals for carbon-neutrality, the project will adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

10. RELATIONSHIP WITH UNIVERSITY MISSION AND OBJECTIVES

The project supports the instruction and research mission of the University of California by providing seismically safe facilities for teaching and research.

Attachments:

Attachment 1.Project Location
Attachment 2: Project Schedule
Attachment 3. Environmental Impact Classification

Attachment 1 Project Location

PROJECT SCHEDULE
UNIVERSITY OF CALIFORNIA, BERKELEY

PROJECT: Stephens Hall Seismic Safety Project

ACCOUNT NO: 912781

DATE: 1/6/2020

ACTIVITY	No. of Months	% Complete	FISCAL YEAR: July 2020-21 (J A S O N D J F M A M J)	July 2021-22 (J A S O N D J F M A M J)	July 2022-2023 (J A S O N D J F M A M J)	July 2023-2024 (J A S O N D J F M A M J)	July 2024-2025 (J A S O N D J F M A M J)	July
Preliminary Plans	3							
Preliminary Plans Review	1							
Working Drawings	6							
Agency Review	2							
Working Drawings Review	1							
Bid/Award	2							
Construction	24							
Final Completion/Occupancy	2							
Cumulative Calendar Months	38							

Approved:
Title: Director - Capital Projects

UNIVERSITY OF CALIFORNIA -- ENVIRONMENTAL IMPACT CLASSIFICATION

Campus: Berkeley **Project Account:** 912781

Project Title: Stephens Hall Seismic Safety Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map.

☐ I **EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970**
When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA.

General/Statutory Exemption: §

☑ II **CATEGORICALLY EXEMPT* --** This project falls under the indicated Class(es) of Exemption(s), none of the exeptions to the exemption apply (15300.2), and there is no significant effect on the environment. (For complete list see CEQA Guidelines Section 15300):

- ☑ Class 1: Existing facilities
- ☐ Class 2: Replacement or Reconstruction
- ☐ Class 3: New Construction of Small Structures
- ☐ Class 4: Minor Alterations to Land
- ☐ Class 6: Information Collection
- ☐ Class 11: Accessory Structures
- ☐ Class 13: Acquisitions for Conservation
- ☐ Class 16: Transfer of Ownership of Land in Order to Create Parks
- ☐ Class 17: Open Space Contracts
- ☐ Class 23: Normal Operations
- ☐ Class 25: Transfer of Ownership of Land to Preserve Open Space
- ☐ Class 30: Minor Actions to Prevent Release of Hazardous Substances
- ☑ Class 31: Historical Resource Restoration/Rehabilitation
- ☐ Class 32: Infill Projects
- ☐ Class 33: Small Habitat Restoration Projects
- ☐ Other:

***Exemptions should be supported by a memorandum to the file documenting project compliance with the specific exemption conditions and exceptions to ensure CEQA defensibility.**

☐ III **INITIAL STUDY --** This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.
☐ Stand-Alone Checklist ☐ Tiered Initial Study (15152):

☐ IV **ENVIRONMENTAL IMPACT REPORT (EIR) --** It is known that the project will have a significant effect on the environment and an EIR will be/has been prepared.
☐ Programmatic ☐ Stand-Alone (Project-Specific)
Additional project analysis:
☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR

Real Estate Transaction Type: ☐ Acquisition ☐ Sale ☐ Lease ☐ Easement ☐ License

Project Description: *[Insert brief project description, provide supporting documentation as appropriate]*

The Stephens Hall Seismic Safety project will implement seismic improvements to achieve compliance with the UC Seismic Safety Policy requirements as updated in 2017. In addition, these reinforcements will maintain use of space that is critically needed to support campus teaching and research programs. Stephens Hall is rated Seismic Performance Level VI, and significant structural damage is anticipated in the event of a moderate to large earthquake. Stephens Hall has a significant backlog of deferred maintenance. Stephens Hall was constructed in 1923 and is eligible for listing on the National Register of Historic Places. The project will not result in a significant increase in square footage. The project is categorically exempt under Class 1, Existing Facilities. This would apply because this will include rehabilitation of deteriorated structures, facilities, and mechanical equipment to meet current standards of public health and safety. In addition, on a separate and independent basis, Class 31, Historical Resource Restoration/Rehabilitation applies, because this consists of maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of the historical resource in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

V. Does this project conform to an approved LRDP? ☑ YES ☐ NO ☐ N/A

VI. CAMPUS ADMINISTRATION

Prepared by: T. Green Date: 1/3/2020 [sign] Timothy P Green

Local Approved by W. Hillis Date: 1/3/2020 [sign]

VII. OFFICE OF THE PRESIDENT ☐ Concur with Classification ☐ Do not Concur

Signed: Date: 1/10/2020

FORM DATE 02/2017 UCOP Form EIC

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Berkeley - Wellman Hall Seismic Safety Project	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$43,793	PWC	**$43,793**

Wellman Hall Seismic Safety Project - $43,793,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections and high priority deferred maintenance to Wellman Hall. The building has a Seismic Performance Rating (SPR) of VI, and would be upgraded to SPR IV. Wellman Hall is a four story, 44,591 gross-square-foot building and houses research laboratory and office space for the Department of Environmental Science, Policy and Management in the College of Natural Resource. Total project costs are estimated at $43,793,000, including Preliminary Plans ($635,000), Working Drawings ($3,030,000), and Construction ($40,128,000). The construction amount includes $34,506,000 for the construction contract, $2,336,000 for contingency, and $3,286,000 for architectural and engineering services. Preliminary Plans are scheduled to begin in July 2020 and complete in September 2020. Working Drawings are scheduled to begin in October 2020 and complete in March 2021. Construction is scheduled to begin in July 2021 and complete in February 2023.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**6924**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Colleen Connor	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

Berkeley Capital Strategies
UNIVERSITY OF CALIFORNIA

PROJECT PLANNING GUIDE

for

WELLMAN HALL

SEISMIC SAFETY PROJECT

#912783

Approved:

Rosemarie Rae
Vice Chancellor-Finance and Chief Financial Officer
University of California, Berkeley

01/06/2020
Date

Table of Contents

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA

BERKELEY CAMPUS

Project Title:	Project Number:	CAAN:	CCCI:	Cost Indexes:
Wellman Hall Seismic Safety Project	**912783**	**1202**	**6924**	**XXX**

A FUNDING SCHEDULE

Univ. Priority No.

Totals (000's)		Prefunded	2020-2021	2021-2022	2022-2023	2023-2024
P	**635**		P **635**			
W	**3,030**		W **3,030**			
C	**40,128**		C **40,128**			
E			E			
(Tot. Proj.) $	**43,793**	**0**	**43,793**	**0**	**0**	**0**

B FUNDING REFERENCES

	Column (1)	Column (2)	Column (3)	Total all Sources (4)
Account No:				
Source:				

C COSTS

						%
0	Site Clearance	$	$	$	$	0.0
1	Construction				**34506**	78.8
2	Exterior Utilities					0.0
4	Site Development					0.0
5	Fees				**3668**	8.4
6	A&E/PP&C				**2162**	4.9
7	Surveys, Tests, Plans, Specs					
					170	0.4
8	Special Items				**951**	2.2
	SUBTOTAL	$	$	$	$ **41457**	94.7
9	Contingency 6.8%				**2336**	5.3
	TOTAL P-W-C	$	$	$	$ **43793**	**100.0**
3	Group 2&3 Equipment					0.0
	TOTAL PROJECT	$	$	$	$ **43793**	
	Available Funding					
	Anticipated Surplus (Deficit)	$	$	$	$	

D FINANCING

State Funds (AB94)	**$43,793,000**
TOTAL	$ **43,793,000**

E STATUS OF PROJECT:

Name:	Shannon Holloway	Signature:		Budget No.	**1**
Title:	Director	Title: Director, Capital Projects		Date	
Prepared By:	C. Tsang	Approved for Campus, Date: 01/06/2020		Orig Date	**12/13/2019**
Program:	Fiscal:	Signature:		Revised	
Cost:		Title:			
		Approved AVP-PPC, Date:			

CAPITAL IMPROVEMENT BUDGET
ANALYTICAL DATA

UNIVERSITY OF CALIFORNIA

BERKELEY CAMPUS

Project Title:	Project Number:	CAAN:	Cost Indexes:
Wellman Hall Seismic Safety Project	**912783**	**1202**	CCCI: **6924** EPI: **XXX**

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources (4)	
ASF per PPG **12/19**	ASF	ASF	ASF	**26,738**	ASF
ASF Current	ASF	ASF	ASF	**26,738**	ASF
OGSF	OGSF	OGSF	OGSF	**44,251**	OGSF
Ratio (ASF Current/OGSF)	to 1.00	to 1.00	to 1.00	**0.60**	to 1.00
Construction Cost per ASF	/ASF	/ASF	/ASF	**$1,290.51**	/ASF
Construction Cost/ OGSF	/OGSF	/OGSF	/OGSF	**$779.78**	/OGSF
Total PWC Cost per ASF	/ASF	/ASF	/ASF	**$1,637.86**	/ASF
Total PWC Cost per OGSF	/OGSF	/OGSF	/OGSF	**$989.66**	/OGSF
Gr. 2&3 Equip. Cost/ ASF	/ASF	/ASF	/ASF	**$0.00**	/ASF

G CONSTRUCTION COST ANALYSIS

	COSTS	UNIT COSTS $/ASF	UNIT COSTS $/OGSF	%	REMARKS
• Concrete & Structure	$				
• Closing -in					
• Finishing					
• Group 1 Equipment					
a. SUBTOTAL-Gen Constr.	$	$	$		
b. HVAC					
c. Plumbing					
d. Electrical					
e. Elevators					
f. Other					• Identify
TOTAL BUILDING					
COST ONLY	$	$	$	0.0	
g. Additional Bldg. Costs					• Identify
TOTAL BUILDING +					
ADD'L COSTS	$	$	$		
h. Other Construction		Identify			
i. Other Construction		Identify			
TOTAL CONSTRUCTION					
COST	$	Same as Schedule C, Item1 (line 24) Page 1			

H NOTES:

Items included under 8.0 Special Items:

Advanced Planning Expenses	325
Special Consultants	115
Hazardous Materials Assessments	10
Preconstruction Services	75
Project Reviews	210
Code Compliance Fees	216
TOTAL	951

Budget No.	
Date	
Orig Date	**12/13/2019**
Revised	

Prepared By: C. Tsang

2. EXECUTIVE SUMMARY

Wellman Hall has a Seismic Performance Rating of VI. The proposed Wellman Hall Seismic Safety project will reinforce the building to improve its resistance to seismic forces and provide life safety protection to its occupants during a large earthquake. The project will implement seismic improvements to achieve a Seismic Performance Rating of IV and compliance with the UC Seismic Safety Policy requirements. In addition, these reinforcements will maintain use of an important supply of well-located space critically needed to support campus programs of faculty offices and laboratories from the Department of Environmental Science, Policy and Management (ESPM) in the College of Natural Resources.

The seismic Tier 2 analysis has identified a number of structural deficiencies that pose risk to building occupants. In particular, the massive exterior concrete walls do not appear to be anchored to either the granite cladding or the structural steel frame and interior slabs. The cladding is a potential falling risk and the unreinforced concrete walls may fail out-of-plane. The structural work will include strengthening of the walls and foundations with additional concrete at different floors and locations and exterior cladding anchorage. To carry out the seismic retrofit work, Wellman Hall will be closed for the duration of the project.

3. PROBLEM STATEMENT

a. Existing Building Description

Background: Wellman Hall is a four story, 44,591 gross-square-foot (gsf) structure. It was designed by John Galen Howard for the College of Agriculture (now the College of Natural Resources) and completed in 1912. The building was renamed from Agriculture Hall to Wellman Hall in 1967 to honor Harry R. Wellman, professor of agricultural economics, who served as acting university president that year. Wellman Hall continues to serve the College of Natural Resources (CNR), housing research laboratory and office space for the Department of Environmental Science, Policy, and Management.

Wellman Hall is the oldest of the three buildings in the agricultural complex, Wellman, Hilgard, and Giannini halls. See Figure 1. These three buildings are the most unified group of historic buildings on the campus. Wellman Hall is listed on the National Register of Historic Places as part of the multiple resources listing for the Berkeley campus, submitted in 1977. The significance is attributed to its association with agricultural education, its design and construction, and its association with John Galen Howard. Wellman Hall is located on a slight rise near the west gate of the campus. It was sited to face the "University Axis" – a line that runs west from Hearst Mining Circle through open spaces, and oriented to the Golden Gate Bridge.

Figure 1: Wellman Hall (center) flanked by Hilgard (left) and Giannini (right) Halls

Figure 2: Wellman Hall - south rotunda facade

The exterior elevations of Wellman Hall reflect a rectangular building with three levels of windows, and a projecting half drum of full height. See Figure 2. Wellman Hall was designed in a classical Italian Renaissance style, with a base, mid-section and cornice. The primary exterior material is granite with copper used for soffits, roof monitors, and parts of the windows. The roof is red clay Roman tiles and the entire assembly of roofing is faced in sheet copper.

Structure: Wellman Hall is a four-story concrete building. The exterior grade is approximately level around the perimeter of the structure and is located 7 feet below the 2nd floor. The main portion of the

building is rectangular in plan and measures 162 feet 2 inches in the north-south direction and 64 feet 2 inches in the east-west direction. A semi-circular rotunda with a 28-foot radius is located on the south elevation in the center of the structure. This rotunda originally contained a large lecture hall with tiered floor framing. Wellman Hall is clad with granite stone veneer and contains a hipped clay tile roof with a central glass skylight. The structure was renovated in 1966 at which time, the rotunda lecture hall was removed, and flat framing at the floor levels and a new mezzanine between floors were constructed. In addition, the stairs were reconfigured, and an elevator was added. The typical floor plan consists of a central corridor in the longitudinal direction with laboratory and office space on each side of the corridor. See Figure 3.

Figure 3: Wellman Hall typical floor plan

Wellman Hall contains a clay tile hipped roof that is constructed from a 2-inch topping slab over a 4-inch thick structural slab. The slab spans to 8-inch, 9-inch, and 10-inch deep steel beams that are supported by sloped 20-inch deep steel girders. A 14-foot wide glass monitor is located along the longitudinal spine of the roof and is framed with steel trusses. The typical floor framing is comprised of a 3-inch topping slab over a 4 ½-inch structural slab that is supported by steel framing. The slab is reinforced with 3/8-inch by 3/8-inch square bars spaced at 7-inch on-center. Alternate slab bars were bent up and embedded into the exterior concrete as straight bars with a short embedment length. No additional attachment of the walls to the steel frame and concrete floors is present. The steel beams are 12-inch and 18-inch deep and are spaced at 7-foot and 7-foot-8-inches apart. They span to 15-inch, 20-inch, and 24-inch deep steel girders that span between columns. The columns are located at the building exterior and on either side of the central corridors. The bay sizes across the width of the building are 23-foot, 14-foot, and 23-foot. Along the building length, the columns are spaced 14-feet apart. The columns consist of built up steel I-sections constructed from plates and angles that are riveted together. The structural framing is encased in concrete, likely for fire protection.

The lateral load-resisting system for Wellman Hall consists of exterior concrete walls clad with granite stone panels. The wall assembly varies in thickness from 1-foot-8-inches to 2-foot-6-inches, and the steel columns at the building perimeter are integral with the concrete walls. Reinforcing in the exterior concrete walls is unknown, and these walls are noted as plain concrete in a seismic study that was completed in 1997. A site investigation survey was also completed in 1997 as part of the seismic study. The survey was able to identify anchors connecting the granite stones to one another, but anchors between the granite panels and the concrete walls were not found and are not documented in the available drawings. Material testing of three concrete cores was also completed at that time and indicates an average concrete compressive strength of 1940 pounds per square inch.

In 1966, the original sloped floor framing located in the rotunda was demolished and replaced with 6-inch thick lightweight concrete fill supported by steel framing. The infill floors were added 1-foot-9-inches below the existing second floor elevation, aligned with the existing third floor elevation, and a new mezzanine level was constructed between the second and third floors. These slabs are connected to the exterior rotunda walls using expansion anchors with shallow embedment spaced 24-inch o.c. No lateral bracing for the mezzanine was constructed and the mezzanine relies on the building columns for lateral support.

A 6-inch slab-on-grade is located at the first floor. Isolated spread footings are located at building columns and strip footings are located under the exterior walls. The spread footings are typically 7-foot by 7-foot in plan and are 3-foot deep while the wall footings are 3-foot wide by 3-foot deep. The column footings are reinforced with 5/8-inch by 5/8-inch square bars spaced at 9-inch o.c. in each direction and the reinforcing in the strip footings is unknown. The original structure contains a number of trenches in the ground floor slab that were infilled during the 1966 renovation.

b. Occupancy Information

Wellman Hall is occupied by the Department of Environmental Science, Policy and Management (ESPM) in the College of Natural Resources. It houses 16 ESPM faculty members and their lab groups, whose research spans the fields of conservation biology, ecology, entomology, agronomy, and ecoinformatics. In addition to laboratory and office space, the building has one departmental classroom and one teaching laboratory for ESPM courses. Also located in Wellman Hall is the Master of Development Practice (MDP) professional degree program, which draws upon faculty from across the Berkeley campus to train students in sustainable development. Their space includes a designated MDP classroom, which doubles as student desks when not in use for instruction, as well as office space for affiliated students and staff.

c. Seismic Condition

Wellman Hall is a historic four-story structure with concrete shear walls around its perimeter. It is a free-standing structure with no adjacent structures nearby that would pose a risk for pounding. It contains steel interior columns which are likely to deform in a ductile manner under the expected building drift.

Wellman Hall contains a number of structural deficiencies that pose risk to building occupants. In particular, the massive exterior concrete walls do not appear to be anchored to either the granite cladding or the structural steel frame and interior slabs. The cladding is a potential falling risk and the unreinforced concrete walls may fail out-of-plane. In addition, the mezzanine floor relies on bending of the gravity columns for lateral support.

A Seismic Performance Rating of VI is assigned to Wellman Hall because of the deficiencies identified above, including significant risk from falling hazards, potential out-of-plane wall failure, and highly

stressed in-plane walls. The project proposes to retrofit the building to attain Seismic Performance Rating of IV to meet the UC Seismic Safety Policy. At this point in the planning process, it is difficult to estimate the cost differential between retrofitting Wellman Hall to a Seismic IV and a Seismic III. During the design process, the campus will explore engineering options with the project structural team in order to understand the opportunities and constraints associated with retrofitting to a rating of III instead of a rating of IV.

d. Deferred Maintenance, Life Safety, and Accessibility

Deferred Maintenance: Wellman Hall has a backlog of just under $5M in deferred maintenance that was identified in the ICAMP survey and the highest priority (yellow and red flagged items) scope will be addressed as part of this project. This includes:

- replacement of the copper box gutters, panelboards, split system, and vacuum pump
- window refurbishment and flooring replacement on floors 2, 3 and 4
- replacement of glazed wood doors at all floors
- replacement of the fire alarm system control panel
- replacement of acoustic tile ceiling
- replacement of air compressors on the first floor and motor control center
- restoring the skylight and the structure
- repairing plaster ceiling on the fourth floor

Life Safety and Accessibility: The structural work will trigger code required fire life safety and accessibility upgrades. There is no fire sprinkler system in this building, so adding that to the building and its associated fire alarm upgrades is part of the project scope. The mezzanine level of the 1966 remodel to the rotunda has no Americans with Disabilities Act (ADA) access to the main levels, therefore, a lift for this level will need to be added for ADA compliance. The passenger elevator, restrooms, and stairwells will also have work done for ADA compliance.

4. ALTERNATIVES CONSIDERED

Wellman Hall functions well in its role as an academic and research building for CNR, and three alternatives to the proposed seismic retrofit were considered.

a. "Do Nothing" Option

One way to address the exposure to seismic risk is to vacate, or de-populate the building such that the level of use is reduced to the extent that the risk to building occupants is minimized. The Wellman Hall program and occupants would need to be relocated. This alternative is infeasible because the building is robustly used, and no alternative space is available for the critical programs and functions that currently occupy Wellman Hall.

b. Demolition and Replacement Option

Wellman Hall is a significant historical resource and is listed in the National Register of Historic Places as part of the UC Berkeley campus 1977 multiple resource designation. Wellman's significance is attributed to its association with agricultural education, and its design and construction. The building is a remarkable example of the classicist design principles which distinguish the work of John Galen Howard. This factor, as well as the lack of campus space for relocation of the current occupants and limited funds for investment in a new structure render this option infeasible.

c. Retrofit Wellman Hall to a Level III Option:

To increase the resilience and longevity of the University's capital assets, the project will consider designing to a Level III rating. This would exceed the minimum requirement but may permit the building to perform better in a large magnitude earthquake. However, the cost of achieving a Level III may not be within the budget. During the design process, the campus will explore engineering options with the project structural team in order to understand the opportunities and constraints associated with retrofitting to a III rating instead of a IV rating, as currently planned. Should a III rating be feasible within the project budget, the building would be improved to Level III.

5. PROJECT DESCRIPTION

a. Seismic Retrofit

The Wellman Hall Seismic Safety project will be designed and implemented in accordance with the current University of California Seismic Safety Policy and California Building Code. The intent of the seismic retrofit is to yield an essential safety rating of performance Level IV.

Retrofit concepts to address the deficiencies include:
- Addition of new interior reinforced concrete shear walls and collectors along portions of the interior corridors oriented in the longitudinal direction.
- Addition of new interior reinforced concrete shear walls and collectors in the transverse direction.
- Addition of lateral bracing for the mezzanine floor.
- Addition of anchors between the structural floors and the exterior concrete walls.
- Install stainless steel adhesive drilled dowels from the interior of the building to penetrate through the concrete and embed into the stone veneer.

b. Required Code Upgrades

The project will be reviewed by the California Division of the State Architect (DSA) for compliance with path of travel accessibility per California Building Code (CBC) Section 11B-202.4. The budget includes an allowance to assure that the project meets all applicable accessibility and fire and life safety codes.

6. DELIVERY METHOD AND PROJECT SCHEDULE

a. Delivery Method:

The proposed project will be delivered by the Berkeley campus and the anticipated delivery method is construction manager at risk. The seismic upgrade will be completed in one phase. Wellman Hall would be closed for the majority of the project.

b. Project Schedule:

The work will commence in July 2020. Construction for the seismic retrofit is anticipated to begin in July 2021 and would be completed in April 2023. See Attachment 2 for the project schedule.

7. FUNDING PLAN

The proposed Wellman Hall Seismic Safety project will be funded by $43,793,000 in external financing supported by State General Funds (California Education Code Sections 92495 et seq.).

8. COST BASIS

The campus has completed a Tier 2 seismic analysis and a Facility Condition Assessment through the ICAMP process and an initial cost analysis by an external consultant. Deferred Maintenance costs are based on campus estimates to complete the work as a component of the Wellman Hall Seismic Safety project and may not correspond with the opportunity costs identified in ICAMP. Project costs will be further refined during detailed programming.

Temporary occupant relocation costs associated with the implementation of the project will be funded separately by the campus.

9. SUSTAINABLE PRACTICES

The project will comply with the University of California Policy on Sustainable Practices. As required by policy and campus goals for carbon-neutrality, the project will adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

10. RELATIONSHIP WITH UNIVERSITY MISSION AND OBJECTIVES

The project supports the instruction and research mission of the University of California by providing seismically safe facilities for teaching and research.

Attachments:
Attachment 1: Project Location
Attachment 2: Project Schedule
Attachment 3. Environmental Impact Classification

Attachment 1: Project Location

Attachment 2: Project Schedule

PROJECT SCHEDULE
UNIVERSITY OF CALIFORNIA, BERKELEY

PROJECT: Wellman Hall Seismic Safety Project

ACCOUNT NO: 912783 **DATE:** 1/6/2020

ACTIVITY	No. of Months	% Complete	FISCAL YEAR: July 2020-21 (J A S O N D J F M A M J)	July 2021-22 (J A S O N D J F M A M J)	July 2022-2023 (J A S O N D J F M A M J)	July 2023-2024 (J A S O N D J F M A M J)	July 2024-2025 (J A S O N D J F M A M J)	July
Preliminary Plans	3							
Preliminary Plans Review	1							
Working Drawings	6							
Agency Review	2							
Working Drawings Review	1							
Bid/Award	2							
Construction	20							
Final Completion/Occupancy	2							
Cumulative Calendar Months	34							

Approved:
Title: Director - Capital Projects

UNIVERSITY OF CALIFORNIA -- ENVIRONMENTAL IMPACT CLASSIFICATION

Campus: Berkeley **Project Account:** 912783

Project Title: Wellman Hall Seismic Safety Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map.

☐ I **EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970**
When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA.
General/Statutory Exemption: §

☑ II **CATEGORICALLY EXEMPT* --** This project falls under the indicated Class(es) of Exemption(s), none of the exeptions to the exemption apply (15300.2), and there is no significant effect on the environment. (For complete list see CEQA Guidelines Section 15300):

- ☑ Class 1: Existing facilities
- ☐ Class 2: Replacement or Reconstruction
- ☐ Class 3: New Construction of Small Structures
- ☐ Class 4: Minor Alterations to Land
- ☐ Class 6: Information Collection
- ☐ Class 11: Accessory Structures
- ☐ Class 13: Acquisitions for Conservation
- ☐ Class 16: Transfer of Ownership of Land in Order to Create Parks
- ☐ Class 17: Open Space Contracts
- ☐ Class 23: Normal Operations
- ☐ Class 25: Transfer of Ownership of Land to Preserve Open Space
- ☐ Class 30: Minor Actions to Prevent Release of Hazardous Substances
- ☑ Class 31: Historical Resource Restoration/Rehabilitation
- ☐ Class 32: Infill Projects
- ☐ Class 33: Small Habitat Restoration Projects
- ☐ Other:

***Exemptions should be supported by a memorandum to the file documenting project compliance with the specific exemption conditions and exceptions to ensure CEQA defensibility.**

☐ III **INITIAL STUDY --** This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.
☐ Stand-Alone Checklist ☐ Tiered Initial Study (15152):

☐ IV **ENVIRONMENTAL IMPACT REPORT (EIR) --** It is known that the project will have a significant effect on the environment and an EIR will be/has been prepared.
☐ Programmatic ☐ Stand-Alone (Project-Specific)
Additional project analysis:
☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR

Real Estate Transaction Type: ☐ Acquisition ☐ Sale ☐ Lease ☐ Easement ☐ License

Project Description: *[Insert brief project description, provide supporting documentation as appropriate]*

The Wellman Hall Seismic Safety project will implement seismic improvements to achieve compliance with the UC Seismic Safety Policy requirements as updated in 2017. In addition, these reinforcements will maintain use of space that is critically needed to support campus teaching and research programs. Wellman Hall is rated Seismic Performance Level VI, and significant structural damage is anticipated in the event of a moderate to large earthquake. Wellman Hall has a significant backlog of deferred maintenance. Wellman Hall is listed on the National Register of Historic Places. The project will not result in a significant increase in square footage. The action is categorically exempt under Class 1, Existing Facilities. This will include rehabilitation of deteriorated structures, facilities, and mechanical equipment to meet current standards of public health and safety. In addition, on a separate and independent basis, the action is categorically exempt under Class 31, Historical Resource Restoration/Rehabilitation. This consists of maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of the historical resource in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

V. Does this project conform to an approved LRDP? ☑ YES ☐ NO ☐ N/A

VI. CAMPUS ADMINISTRATION

Prepared by: T. Green Date: 1/3/2020 [sign] Timothy P Green

Local Approved by W. Hillis Date: 1/3/2020 [sign]

VII. OFFICE OF THE PRESIDENT ☐ Concur with Classification ☐ Do not Concur

Signed: Date: 1/10/2020

FORM DATE 02/2017 UCOP Form EIC

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Davis - Jungerman Hall Seismic Corrections	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$12,200	PWC	$12,200

Jungerman Hall Seismic Corrections - $12,000,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections to Jungerman Hall, a 32,700 gross-square-foot building with a Seismic Performance Rating (SPR) of VI. Upon completion of structural repairs, the SPR would be upgraded to IV. Mandatory code corrections triggered by the structural work would potentially include, but are not limited to, accessibility and egress upgrades and fire/life safety improvements. Total project costs are estimated at $12,200,000, including Preliminary Plans ($700,000), Working Drawings ($1,000,000), and Construction ($10,500,000). The construction amount includes $9,030,000 for the construction contract, $630,000 for contingency, and $840,000 for architectural and engineering services. Preliminary Plans are scheduled to begin in July 2020 and complete in February 2021. Working Drawings are scheduled to begin in March 2021 and complete in August 2021. Construction is scheduled to begin in January 2022 and complete in April 2023.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**8014**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Carey Barker	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

UC DAVIS
UNIVERSITY OF CALIFORNIA

Project Planning Guide

for

Jungerman Hall Seismic Corrections

Project Account #953680

January 2020

CAMPUS APPROVAL

Prepared by:

Leslie Carbahal

Leslie Carbahal, Director 01/07/2020
Capital Planning
Design and Construction Management

Approved By:

JC Carroll 1/8/2020

Jim Carroll, Associate Vice Chancellor and
University Architect
Design and Construction Management

University of California, Davis
Jungerman Hall Seismic Corrections
Project Number 953680
January 2020
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Executive Summary

The University of California, Davis proposes to provide seismic corrections to Jungerman Hall. Jungerman Hall is a concrete building constructed in 1965 and is comprised of three building components: a main building (Jungerman Main), a wood and steel-framed office building (Annex) that is connected and directly adjacent to Jungerman main to the east, and a single-story wood building that is connected and directly adjacent to Jungerman main to the west that serves as a mechanical shop (Mechanical Shop). Although the three buildings are collectively known as "Jungerman Hall," they act seismically independently.

Jungerman Main has received a Seismic Performance Rating (SPR) of VI. The Jungerman Mechanical Shop and Annex have received SPRs of V and IV respectively. In Jungerman Main, seismic deficiencies exist in the concrete shear walls, the precast concrete roof diaphragm, concrete columns, steel braced frames, and concrete moment frames. Seismic deficiencies associated with the Mechanical Shop include overstressed shear wall elements at the north and south exterior wall lines and overstressed wood diaphragm elements. The Annex does not require seismic corrections.

Significant structural damage is anticipated in Jungerman Hall in the event of a moderate to large earthquake. The project delivers seismic corrections to ensure all buildings components that comprise Jungerman Hall meet the UC Seismic Safety policy. Mandatory code corrections triggered by the structural work would potentially include, but are not limited to, accessibility and egress upgrades and fire/life safety improvements. Upon completion of the work, all three building components comprising Jungerman Hall would have a SPR of IV.

Jungerman Hall is approximately 32,700 gross-square-feet (gsf) and is comprised of a single story with a partial mezzanine and a partial basement. A mezzanine was added to the high-bay portion of the building in 2004, but the building has not otherwise been structurally upgraded or significantly renovated since it was built in 1965. The building is occupied by two departments: the Air Quality Research Center (AQRC), an organized research unit under the Office of Research and research space for Physical Sciences within the College of Letters and Sciences. Space types currently located in the facility include research laboratories, and administrative and research offices. Anticipated space moves in the facility already funded and underway will result in the relocation of AQRC prior to the start of construction for the Jungerman Hall Seismic Corrections project. The vacated space will fulfill high-priority State-supportable needs.

The scope of the seismic work is an interior and exterior retrofit strategy that adds a new concrete grade beam with drilled piers supporting a new concrete shear wall along the entire west wall of the high bay at the first floor and continuing up to the roof in the center bay; infilling clerestory window openings with new shear walls on the north and south walls of the high bay portion of the building; adding new concrete shear walls topped with concrete beams at the east wall of the high bay; and adding new Fiber-Reinforced Polymer (FRP) sheeting to more than half of the high bay roof area along with a number of related repairs and restoration; and window infill and shear panel

reinforcement and roof removal and roof diaphragm panel reinforcement in the Mechanical Shop. Related repairs and restoration scope would include roofing removal and replacement; modifications to building systems; and replacement of ceilings, lighting, and finishes in areas impacted by the work. Exterior restoration will address building landscape and access disrupted by the seismic correction work.

Construction will be phased and timed to allow for the building to remain occupied as much as possible during construction. In order to minimize impacts to building occupants to the extent possible, the project will explore options for weekend, off-hour, and summer work, particularly for utility shutdowns. If necessary, a small portion of the building's occupants would be relocated for the full construction window in combination with rotating internal occupants to support the repairs.

Problem Statement

Jungerman Hall is home to two departments: the Air Quality Research Center (AQRC), an organized research unit (ORU) under the Office of Research and the Department of Physical Sciences in the College of Letters and Sciences. Space types currently located in the facility include research laboratories and administrative and research offices.

Anticipated space moves in the facility already funded and underway will result in the relocation of AQRC prior to the start of construction for the Jungerman Hall Seismic Corrections project, leaving the research space associated with Physical Sciences within the College of Letters and Sciences as the primary occupant of Jungerman Hall. Space in the facility supports a number of research-related endeavors, including shop space, research labs and offices, and high-bay space occupied by a cyclotron associated with the Crocker Nuclear Laboratory (CNL).

Jungerman Hall

Jungerman Hall, constructed in 1965, is a single-story multi-structure facility with a partial mezzanine and a partial basement. Jungerman Main is a concrete building. Connected to Jungerman Main but seismically separate building components are located both to the east and west of the high bay (see Figure 1). The building houses a cast-in-place concrete cyclotron at the center of the high bay. The cyclotron is independent of the building structure. The controls for the cyclotron are housed on the mezzanine structure. The Jungerman Annex is a wood and steel-framed office building that is connected and directly adjacent to Jungerman Main to the east. The Mechanical Shop is a single-story wood building that is connected and directly adjacent to Jungerman Main to the west that serves as a mechanical shop. Though the three building components are collectively known as "Jungerman Hall," they are seismically separated.

Figure 1. Jungerman Hall

Jungerman Hall is located on the core UC Davis campus, with Bainer Hall immediately to the north, the Physics Building to the east, the Mathematical Sciences Building to the south, and Ghausi Hall to the west. The facility accommodates research and related support space, shop space, and research and administrative offices. Anticipated space moves in the facility already funded and underway will result in the relocation of AQRC prior to the anticipated start of construction for the Jungerman Hall Seismic Corrections project.

Jungerman Main

Jungerman Main consists of a high bay roof which is framed with precast tee-beams supported by cast-in-place concrete beams and columns at the exterior north and south walls. The concrete columns are cast monothically with 8-inch concrete walls. There is a concrete beam which supports the rails for an interior bridge crane at the top of the concrete walls, which is approximately 12 feet below the roof elevation. The untopped precast roof diaphragm at the high bay spans to the exterior wall lines. At the north and south elevations, the concrete columns must transfer the lateral forces to the concrete shear walls that do not extend to the roof diaphragm. At the east end of the high bay, there is a dramatic offset near the top of the exterior concrete wall to house the bridge crane when not in use. The lateral forces must transfer down through this unusually configured wall. At the west end of the high bay, the exterior wall consists of a steel braced frame above the mezzanine level and an ordinary concrete moment frame from the mezzanine level to the foundation.

The framing for the lower roof entry, to the north of the high bay, consists of a 6-inch concrete slab supported by concrete beams and concrete columns which are cast monolithically with 8-inch concrete walls. At the lower roof, the concrete roof diaphragm spans to the concrete walls.

A partial mezzanine, located at the west end of the high bay, is constructed of a 6-inch concrete slab supported by concrete beams, columns, and walls. A 12-foot mezzanine addition was constructed in 2002. This addition is attached to and laterally supported by the original concrete

mezzanine and is constructed with a concrete over metal deck floor supported by steel beams and columns.

The foundation for Jungerman Main is a concrete slab on grade throughout the building of varying thickness ranging from 6-inch to 18-inch and a cast-in-place concrete partial basement.

Mechanical Shop

The Mechanical Shop is a wood-framed addition to the west of Jungerman Main with a door between the buildings. The buildings are separated by a 2.1-inch seismic joint. The roof of the Mechanical Shop consists of plywood supported by open-web joists spaced four feet on center. The joists run parallel to the longer dimension of the building and span between the exterior bearing walls. Lateral force resistance is provided by wood shear walls in both principal orthogonal directions along with an unblocked wood roof diaphragm. The foundation of the Mechanical Shop is a comprised of continuous concrete footings below the exterior walls and a 6-inch concrete slab on grade throughout the building.

Annex

The Annex is a wood-framed addition to the east of Jungerman Main. The buildings are separated by a seismic joint of more than 3 inches. The roof of the Annex consists of plywood supported by open-web joists spaced two feet on center. The joists run parallel to the shorter dimension of the building spanning between the exterior walls. The joists are braced at the end of the spans near the exterior walls by rows of bridging at their bottom chords. East-west lateral force resistance is provided by wood shear walls at the exterior in addition to a steel braced frame in the center of the building. North-south lateral resistance is provided by wood shear walls. The flexible plywood roof diaphragm spans these lateral resisting elements.

Seismic Deficiencies

A structural analysis has determined that Jungerman Hall does not have adequate seismic resistance to comply with the UC Seismic Safety Policy. Jungerman Main received a SPR of VI, the Mechanical Shop received a SPR of V, and the Annex received a SPR IV. In Jungerman main, seismic deficiencies exist in the concrete shear walls, the precast concrete roof diaphragm, concrete columns, steel braced frames, and concrete moment frames. Seismic deficiencies associated with the Mechanical Shop include overstressed shear wall elements at the north and south exterior wall lines and overstressed wood diaphragm elements.

Seismic corrections are proposed for Jungerman Main and the Mechanical Shop. Jungerman Main has overstressed shear walls, concrete roof diaphragm connections, concrete columns above the shear walls at the north and south exterior walls of the high bay, steel brace elements at the braced frame at the west end of the high bay, and concrete frame at the west end of the high bay. The Mechanical Shop has deficiencies in the capacity of the wood shear walls and the wood roof diaphragm. The Annex does not require seismic corrections.

Fire/Life Safety and Accessibility Deficiencies

The building does not comply with current accessibility codes under the Americans with Disabilities Act or the California Administrative Code. Modifications are needed to provide code-

compliant entry doors, elevators, restrooms, drinking fountains, door hardware, and signage. There are also deficiencies to the building's fire alarm system.

Project Description

Seismic Corrections, Code Upgrades, and Deferred Maintenance (State-funded)
The proposed project would provide seismic corrections in Jungerman Hall. Jungerman Hall is comprised of three buildings designed to act independently in response to earthquakes. The project components described in this section reflect the most critical facility needs for Young Hall as identified during project planning and preliminary engineering studies. The exact seismic solution will be the subject of further assessment during design and limited by projected construction market conditions at the time of bid. Upon completion of the work, the seismic rating for each building would be upgraded to a seismic performance rating of IV.

Seismic Corrections

Jungerman Main

- Add concrete grade beam with drilled piers supporting a new 12-inch thick concrete shear wall along the entire west wall of the high bay at the first floor and continuing up to the roof in just the center bay.
- Infill 4 clerestory window openings with new 10-inch shear walls on the north and south walls of the high bay portion of the building.
- Add 12-inch concrete shear walls topped with concrete beams at the east wall of the high bay.
- Add Fiber-Reinforced Polymer sheeting to approximately 60% of the high bay roof area.
- Interior and exterior work as triggered by areas disrupted by seismic corrections: landscape, finishes, roofing, waterproofing, painting, and other improvements including but not limited to the following:
    - Relocation of conduits, ductwork, piping to install the shear walls.
    - Relocation of subsurface conduits and piping for the new grade beam.
    - Removal and replacement of exterior and interior finishes on the west wall of the high bay above the 1 story wing roof.
    - Removal and replacement of approximately 12 feet of the roof, walls and floor slab of the 1-story wing on the west side to enable the installation of the grade beam and shear wall.

Mechanical Shop

- Approximately 50% of the north and south walls will need to have the stucco finish removed, hold downs added, windows infilled and additional nailing of the plywood shear panels.
- Approximately 50% of the roof will need to have the roofing removed, additional blocking added and additional nailing of the plywood roof diaphragm panels.

Code Upgrades

- Access upgrades to ensure code compliant access (entry doors, elevators, drinking fountains, door hardware, and signage) and restrooms; and
- Fire alarm and fire sprinkler upgrades.

Program Improvements (Non-Stated Funded)

The mandatory seismic correction and code-triggered upgrade work may provide an opportunity to make program improvements in Jungerman Hall. The campus is evaluating program improvements to select areas of the building, which may or may not be directly impacted by the seismic work. Potential additional improvement under consideration are building-specific but could include reconfiguration of walls to improve space utilization and functionality; modifications to the building systems; and replacement of ceilings, lighting, and finishes not impacted by seismic or deferred maintenance work. A cost-benefit analysis of potential additional improvements will be conducted during the preliminary planning phase of the project and any non-State funded scope and budget increases recommended to be included in the project will be requested at the time of budget and design approval.

Space Impacts

It is anticipated that the building will remain occupied during construction. The seismic work will disrupt occupied portions of the building. Challenges anticipated for building occupants include relocations mandated by the work, disruption to research, wayfinding challenges, bike and vehicle parking displacement, and temporary restroom, and utility shutdowns. Construction noise may also impact building occupants and the project will explore options to minimize disruption.

Construction will be phased to allow for as much continued occupancy as possible during construction. A small portion of the building's occupants may need to be relocated for the full construction window and rotating additional internal relocations would be necessary to support the repairs. Campus Space Planning will work with the building occupants to provide temporary relocation space and to coordinate the internal relocations for those displaced by construction. Work would be timed to minimize the impacts of construction to building occupants.

No impacts to usable building square footage or program space or a change in use are anticipated to result from this project.

Cost Basis and Funding Plan

The campus has completed general pre-design studies and cost analyses for this project. A Tier 2 evaluation as well as some additional studies have been completed in order to assess the seismic condition of Jungerman Hall.

The project will be funded by $12.2 million in external financing supported by State General Funds (California Education Code Sections 92495 et seq.). Any increase in budget for program improvements scope identified during preliminary planning will be funded by non-State resources.

Sustainability

The project will comply with the UC Sustainable Practices policy. As required by the policy, the project will adopt energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints, defined project scope, and regulatory and programmatic requirements.

Relationship to University Mission and Objectives

The project supports the instruction and research mission of the University of California by improving the seismic safety of facilities for teaching and research in a campus academic building.

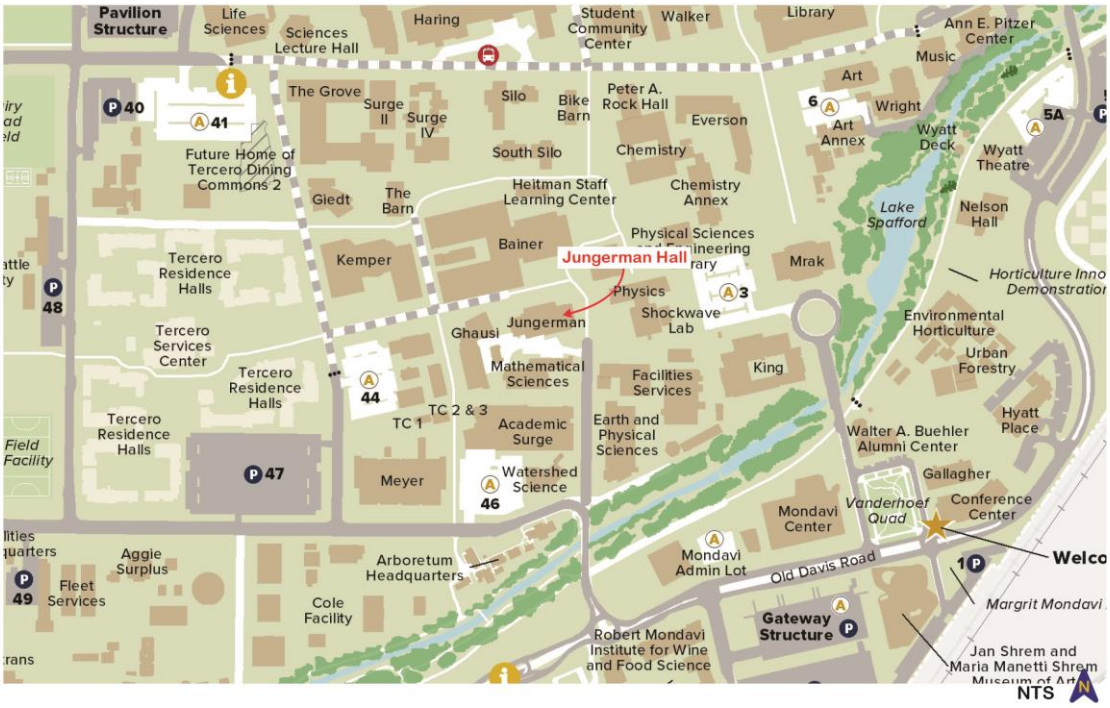
Alternatives

Seismic correction of Jungerman Hall is the best option to bring the building into compliance with the UC Seismic Safety Policy. The facility is fully-occupied by active academic and administrative programs and research in direct support of fulfilling the University's mission. Jungerman houses the only cyclotron available to support research on the Davis campus. The specialized nature of space necessary to support the cyclotron as well as the campus-wide impacts associated with a shut-down of any length supports the decision to seismically retrofit the facility. The Davis campus is generally space constrained and does not have vacant space resources that would allow for the permanent relocation of all building occupants without constructing replacement space. Demolition and replacement is also not a viable alternative; the work proposed in this project represents approximately thirteen percent of the replacement cost of the building, which generally continues to function well for the uses it supports.

The project proposes to renovate Jungerman Hall to a SPR of IV in compliance with the UC Seismic Safety Policy. The campus does not have information about the incremental cost associated with upgrading the building to a rating of III beyond the anticipated minimal acceptable performance rating of IV.

Project Location Map

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
JUNGERMAN HALL SEISMIC CORRECTIONS
PROJECT NO: 953680



Site Plan

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
JUNGERMAN HALL SEISMIC CORRECTIONS
PROJECT NO: 953680

NTS

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
CAMPUS: DAVIS

	Project Title: Jungerman Hall Seismic Corrections		**Account Number:** Campus Reference 953680		Asset No.	CCCI: 8014 EPI: Cost Indexes	
A	**FUNDING SCHEDULE**	Prefunded					
	Totals (000's)	(2019-20)	(2020-21)	(2021-22)	(2022-23)		
	P $700 W $1,000 C $10,500		P $700 W $1,000 C $10,500				
	Total Project $12,200		$12,200				
B	**FUNDING REFERENCES**						
		Column (1)	Column (2)	Column (3)	Total All Sources		
	Account No.						
	Source						
C	**COSTS**					%	
0	Site Clearance				$260,000	2.1%	
1	Construction				$8,500,000	69.7%	
2	Exterior Utilities				$180,000	1.5%	
4	Site Development				$90,000	0.7%	
5	Fees				$1,260,000	10.3%	
6	A&E/PP&C				$540,000	4.4%	
7	Surveys, Tests, Plans & Specifications				$270,000	2.2%	
8	Special Items				$470,000	3.9%	
	SUBTOTAL				$11,570,000	94.8%	
9	Contingency 7.0%				$630,000	5.2%	
	TOTAL P_W_C				$12,200,000	100.0%	
3	Group 2 & 3 Equipment						
	TOTAL PROJECT				$12,200,000		
	Available Funding						
	Available Surplus/(Deficit)						
D	**FINANCING**						
	State Funds (AB-94) $12,200,000						
	TOTAL $12,200,000						
E	**STATUS OF PROJECT**						
	Project Planning Guide						
	Name: Jim Carroll Title: AVC & University Architect Prepared By: A.Timm		Signature: Leslie Carbahal Name: Leslie Carbahal Title: Director of Capital Planning Approved for Campus, Date: 1/9/20		Budget No. Issue Date Revised Revised	1 1/6/20	
	Program: Fiscal: Cost:		Signature: Title: Approved AVP_PPC, Date:				

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Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
CAMPUS: DAVIS

Project Title:	Account Number:		CCCI: 8014
Jungerman Hall Seismic Corrections	Campus Reference 953680	Asset No.	EPI:
			Cost Indexes

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources
ASF Per PPG	ASF	ASF	ASF	ASF
ASF Current	ASF	ASF	ASF	22,126 ASF
OGSF	OGSF	OGSF	OGSF	32,679 OGSF
Ratio (ASF Current / OGSF)	to 1.00	to 1.00	to 1.00	0.68 to 1.00
Construction Cost Per ASF	/ASF	/ASF	/ASF	$384.16 /ASF
Construction Cost Per OGSF	/OGSF	/OGSF	/OGSF	$260.11 /OGSF
Total PWC Cost Per ASF	/ASF	/ASF	/ASF	$551.39 /ASF
Total PWC Cost Per OGSF	/OGSF	/OGSF	/OGSF	$373.33 /OGSF
Grp. 2 & 3 Equip Cost / ASF	/ASF	/ASF	/ASF	/ASF

G CONSTRUCTION COST ANALYSIS

H Notes:

Sub 8 Items:	
Environmental / EIR Services	60,000
As-Built Survey	20,000
Value Engineering / Constructibility Review	80,000
Agency Review (DSA & Fire Marshall)	70,000
Haz. Mat. Surveys & Testing	80,000
Commissioning	20,000
Independent Structural / Seismic Review	40,000
Specialty Inspection - Code Compliance	50,000
Special Consultants (Historic Building, Radiological, WP)	50,000
Subtotal	**470,000**
Interest During Construction	
Total Sub 8	**-**

Budget No.	1
Issue Date	1/6/20
Revised	
Revised	

Prepared By: A.Timm

Page 2 of 2

Schedule

PROJECT SCHEDULE
UNIVERSITY OF CALIFORNIA, DAVIS

Project Title: Jungerman Hall Seismic Corrections
Project No. - 953680

July 2019-20 | July 2020-21 | July 2021-22 | July 2022-23 | July 2023-24
(J A S O N D J F M A M J for each year)

Activity	No. Of Months
Preliminary Plans	8
Preliminary Plans Approval	1
Working Drawings	6
Agency Review	2
Working Drawings Approval	1
Bid & Award Contract	3
Construction	16
Closeout	3
Total Months	**37.0**

NOTE:

Approved By: Leslie Carbahal
Leslie Carbahal
Director of Capital Planning

1/6/2020

Date: 1/7/2020

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division *Davis* **Project Account** 953680

Project Title Jungerman Hall Seismic Corrections and Critical Deferred Maintenance Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (**X**) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970** - When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: §

☐ **II. CATEGORICALLY EXEMPT** - This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

____	Class 1:	Existing Facilities	____	Class 17:	Open Space Contracts or Easements
____	Class 2:	Replacement or Reconstruction	____	Class 23:	Normal Operation of Facilities for Public Gatherings
____	Class 3:	New Construction or Small Structures	____	Class 25:	Transfer of Land: Natural Conditions/Historical Resources
____	Class 4:	Minor Alterations to Land	____	Class 30:	Minor Actions: Prevent Hazardous Waste/Substances
____	Class 6:	Information Collection	____	Class 31:	Historical Resource Restoration/Rehabilitation
____	Class 11:	Accessory Structures	____	Class 32:	In-Fill Development Projects
____	Class 13:	Acquisition for Conservation	____	Class 33:	Small Habitat Restoration Projects
____	Class 16:	Transfer of Land Ownership for Parks	____	Other:	

☐ **III. INITIAL STUDY** - This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152):

☒ **IV. ENVIRONMENTAL IMPACT REPORT (EIR)** - It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☒ Programmatic ☐ Stand-Alone (Project-Specific) UC Davis 2018 Long Range Development Plan EIR (SC# 2017012008)

Additional project analysis:

☐ None/Findings Only ☒ Addendum ☐ Subsequent ☐ Supplement to EIR:

PROJECT DESCRIPTION -

UC Davis will complete structural seismic safety corrections to Jungerman Hall, located in the central campus. Jungerman Hall, constructed in 1965, is a single-story multi-structure facility with a partial mezzanine and a partial basement. The scope of the seismic work is an interior and exterior retrofit strategy that adds exterior and interior shear walls, fiber reinforced polymer sheeting, seismic joint modifications, and infill of openings. Related repairs and restoration scope would modifications to building systems, reconfigurations of interior walls, and replacement of exterior and interior finishes in areas impacted by the work. Exterior restoration will address building landscape and access disrupted by the seismic correction work. Deferred maintenance work addresses electrical distribution, and code triggered improvements include upgrades to the fire alarm system as well as entry doors, restrooms, drinking fountains, door hardware and signage, and exterior path of travel.

The project is subject to the California Environmental Quality Act (CEQA). As Jungerman hall is over 50 years old, a review of its historical significance will be undertaken. It is anticipated that an addendum will prepared. Prior to document approval, a CEQA determination will be made and appropriate documentation completed.

V. Does this project conform to the approved LRDP? ☒YES ☐NO ☐NA *[If NO or NA, include explanation in Project Description above]*

VI. Prepared by Heather Davis — Date 1/10/2020 — Local Approval by Matt Dulcich — Date 1/10/20

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification

Signed — Date 1/13/2020

FORM DATE 9/2016 (UCOP Form EIC)

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Davis - Mann Laboratory Seismic Corrections	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$5,670	PWC	$5,800

Mann Laboratory Seismic Corrections - $5,800,000 for Studies, Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections and high priority deferred maintenance to Mann Laboratory, a 17,182 gross-square-foot building with a Seismic Performance Rating (SPR) of VI. Upon completion of structural repairs, the SPR would be upgraded to IV. Mandatory code corrections triggered by the structural work would include disabled access upgrades and fire/life safety improvements. Total project costs are estimated at $5,800,000, including Studies ($130,000), Preliminary Plans ($200,000), Working Drawings ($470,000), and Construction ($5,000,000). The construction amount includes $4,320,000 for the construction contract, $304,000 for contingency, and $376,000 for architectural and engineering services. The Study Phase is scheduled to begin in February 2020 and complete in June 2020. Preliminary Plans are scheduled to begin in July 2020 and complete in November 2020. Working Drawings are scheduled to begin in December 2020 and complete in May-- 2021. Construction is scheduled to begin in November 2021 and complete in December 2022.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**7839**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Carey Barker	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

UC DAVIS
UNIVERSITY OF CALIFORNIA

Project Planning Guide

for

Mann Laboratory

Seismic Corrections

Project Account #953660

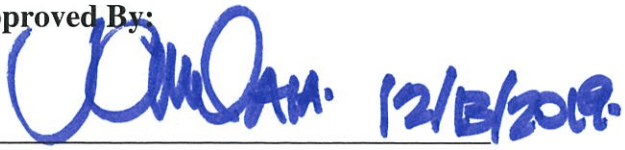
December 2019

CAMPUS APPROVAL

Prepared by:

Leslie Carbahal, Director
Capital Planning
Design and Construction Management

Approved By:



Jim Carroll, Associate Vice Chancellor and
University Architect
Design and Construction Management

University of California, Davis
Mann Laboratory Seismic Corrections
Project Number 953660
December 2019

Table of Contents

Executive Summary

The University of California, Davis proposes to provide seismic corrections and high priority deferred maintenance to Mann Laboratory, a concrete masonry building with a wood frame roof and a Seismic Performance Rating (SPR) of VI. Seismic deficiencies are due to the inadequate out-of-plane wall anchorage system. Significant structural damage is anticipated in the event of a moderate to large earthquake. Mandatory code corrections triggered by the structural work would include disabled access upgrades and fire/life safety improvements. Upon completion of the work, the SPR would be upgraded to IV.

The 17,182 gross-square-foot (gsf) single-story building has not been structurally upgraded or significantly renovated since it was built in 1965. The Department of Plant Sciences, which is within the College of Agricultural and Environmental Sciences, is the sole occupant of Mann Laboratory. Space types currently located in the facility include research labs, research offices, academic offices, and support spaces.

The scope of the seismic work includes an interior retrofit strategy of adding continuity ties to the roof structure to address the deficiencies in the out-of-plane wall anchorage system. Related repairs and restoration scope would include reconfiguration of walls; modifications to building systems; and replacement of ceilings, lighting, and finishes in areas impacted by the work. Deferred maintenance corrections address heating, ventilation, and air conditioning deficiencies and electrical main switchboard panel upgrades.

Construction will be scheduled to minimize the impact to building occupants. The building is anticipated to remain occupied during construction with select area closures while work is completed. Off-hour and off-season work will be considered where necessary.

Problem Statement

Mann Laboratory is home to the College of Agricultural and Environmental Sciences' Department of Plant Sciences. The Department of Plant Sciences (DPS) is a leader in the research, teaching, and delivery of all aspects of plant science. The department employs over 70 full-time professors and supports approximately 750 undergraduate and over 120 graduate students. U.S. News and World Report ranked UC Davis as number one for Plant and Animal Science. DPS occupies the entire building, which is primarily comprised of research labs along with academic and research offices. Research labs occupy approximately 80 percent of the building.

Mann Laboratory

Mann Laboratory is a single-story, concrete masonry building with wood frame roof and a SPR of VI. The building currently accommodates the Department of Plant Sciences' research labs and academic offices. Mann Laboratory is located near Hoagland Hall, with the Botanical Conservatory to the east and Kleiber Hall to the south. Mann Laboratory was designed primarily to support plant research and continues to generally function well for the user groups it supports.

The building has a rectangular plan shape. The building was designed in accordance with building codes in 1965 and it has not been structurally upgraded since it was built. The building's gravity load system consists of a plywood roof deck, supported by 2 by 10-inch joists, additionally supported on 32-1/2-inch glulam beams and the perimeter is partially grouted concrete masonry (CMU) walls. Steel wide flange columns support the glulam beams including steel columns embedded in the south CMU wall. The north end of the high roof is framed with 2 by 12-inch joists spanning north to south. The south ends of these joists are supported on an interior CMU wall while the north end is supported on a wood framed wall. The low roof structure consists of a plywood roof deck supported by 2 by 12-inch joists, additionally supported by interior and perimeter wood framed walls. The walls and columns of both the high and low roof structures are supported on concrete strip footings.

The high roof structure's lateral force-resisting system consists of the plywood roof deck which acts as a flexible diaphragm to distribute lateral forces to the perimeter and interior partially grouted CMU walls. Also, a plywood shear wall is at the south end which is common with a low roof structure. The low roof lateral force-resisting system consists of the plywood roof deck and plywood shear walls on the south, east and west sides. There are also interior plywood shear walls approximately 15 feet south of the north side formed by the north offices.

Seismic Deficiencies

A structural analysis has determined that Mann Laboratory does not comply with the University of California Seismic Safety Policy. The deficiencies in the anchoring system from the roof to the walls is inadequate due to the lack of continuity ties. For these reasons, Mann Laboratory is inadequate to resist forces from a moderate to large seismic event and has a SPR of VI.

Fire/Life Safety and Accessibility Deficiencies

The building does not comply with current accessibility codes under the Americans with Disabilities Act or the California Administrative Code. Modifications are needed to provide code-compliant access, entry doors, restrooms, drinking fountains, door hardware and signage, and path of travel. The project will also provide necessary upgrades to the fire alarm system and other code required improvements.

Deferred Maintenance

A Facility Condition Assessment (FCA) was completed in June 2019 and has been catalogued in the Integrated Capital Asset Management Program (ICAMP). The assessment provides a valuation of a building's deferred maintenance needs based on actual asset conditions and allows the campus to effectively prioritize assets and mitigate risk. Critical deferred maintenance elements identified as highest priority in the FCA include replacement and/or upgrades to the electrical system including the main electrical switchboard (MSB) and electrical panels.

Project Description

Seismic Corrections, Code Upgrades, and Deferred Maintenance (State-funded)
The proposed project would provide seismic corrections and address critical deferred maintenance, fire/life safety and accessibility deficiencies of Mann Laboratory. The project components described in this section reflect the most critical facility needs for Mann Laboratory as identified during project planning and preliminary engineering studies. The exact seismic solution will be the subject of further assessment during design. Upon completion of the work, the seismic rating would be upgraded to IV.

Seismic Corrections

- Add interior angle tie-downs to joists at exterior east and west walls;
- Add joist connectors at underside of roof;
- Add beam connectors at underside of roof; and
- Add interior continuous tube steel brackets to anchor beams at exterior north and south walls.

Deferred Maintenance

- Replacement and/or upgrade MSB in southeast mechanical yard;
- Replacement and/or upgrade of approximately five electrical panels; and
- Replacement and/or upgrade of lighting at ceilings impacted by seismic work.

Code Upgrades

- Access upgrades to ensure code compliant access (entry doors, elevators, drinking fountains, door hardware and signage) and restrooms; and
- Fire alarm upgrades.

Program Improvements (Non-State Funded)
The mandatory seismic correction and code–triggered work may provide an opportunity to make program improvements for Mann Laboratory. The campus is evaluating program improvements to select areas of the building, which may or may not be directly impacted by the seismic work. Potential additional improvements under consideration include reconfiguration of walls to improve space utilization and functionality; modifications to the building systems; and replacement of ceilings, lighting, and finishes not impacted by seismic or deferred maintenance work. A cost-benefit analysis of potential additional improvements will be conducted during the preliminary planning (P) phase of the project and any non-State funded scope and budget increases recommended to be included in the project will be requested at the time of budget and design approval.

Space Impacts
The improvements will be primarily interior and will be coordinated to allow the building to be occupied during construction to the greatest extent possible. The nature of research in Mann Laboratory will be carefully considered during project planning. DPS research trials are primarily conducted in the summer and fall. Limited access to individual labs may be permitted during

construction work and temporary lab sharing may be necessary. Electrical and other shut-downs will be planned to minimize impacts on building occupants and research.

Cost Basis and Funding Plan

The campus has completed general pre-design studies and cost analyses for this project. A Tier 2 evaluation as well as some additional studies have been completed in order to assess the seismic condition of Mann Laboratory.

Deferred maintenance costs are based on campus estimates to complete the work as a component of the Mann Laboratory Seismic Corrections project and may not correspond with opportunity costs identified in ICAMP.

The project will be funded by $5.67 million in external financing supported by State General Funds (California Education Code Sections 92495 et seq.) and $130,000 in campus funds. Any increase in budget for program improvements scope identified during preliminary planning will be funded by non-State resources.

Sustainability

The project will comply with the UC Sustainable Practices policy. As required by the policy, the project will adopt energy efficiency and sustainability to the fullest extent possible, consistent with defined projects scope, budgetary constraints and regulatory and programmatic requirements.

Relationship to University Mission and Objectives

The project supports the instruction and research mission of the University of California by improving the seismic safety of facilities for teaching and research in a campus academic building.

Alternatives

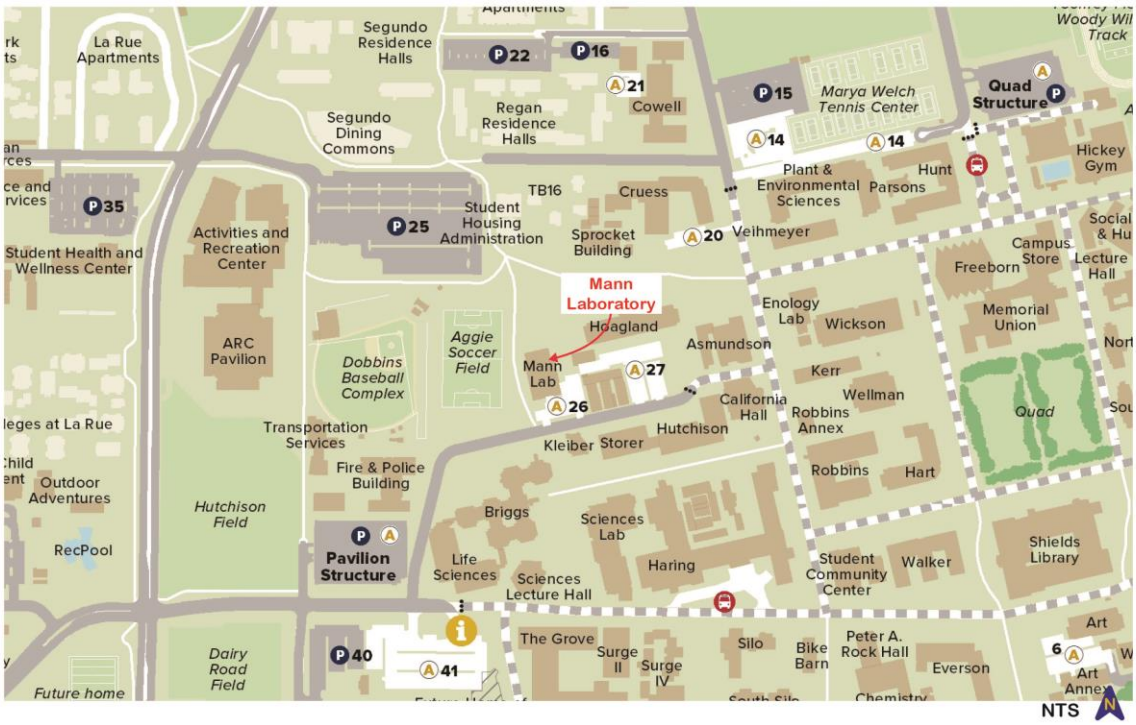
Seismic renovation of Mann Laboratory is the best option to address the deficiencies in the structure of the roof through the foundation and bring the building into compliance with the University of California Seismic Policy. The facility is fully-occupied by an active academic and administrative program in direct support of fulfilling the University's mission and providing valuable research to the plant sciences industry. The Davis campus is generally space-constrained and does not have vacant space to allow for the demolition and permanent relocation of all building occupants without constructing replacement space. Demolition and replacement of the facility is not a viable alternative. The work proposed in this project represents less than twenty percent of the replacement cost of the building, which generally continues to function well for the uses it supports.

The project proposes to renovate Mann Laboratory to a SPR of IV in compliance with the UC Seismic Safety Policy. The campus does not have information about the incremental cost associated

with upgrading the building to a rating of III beyond the anticipated minimal acceptable performance rating of IV.

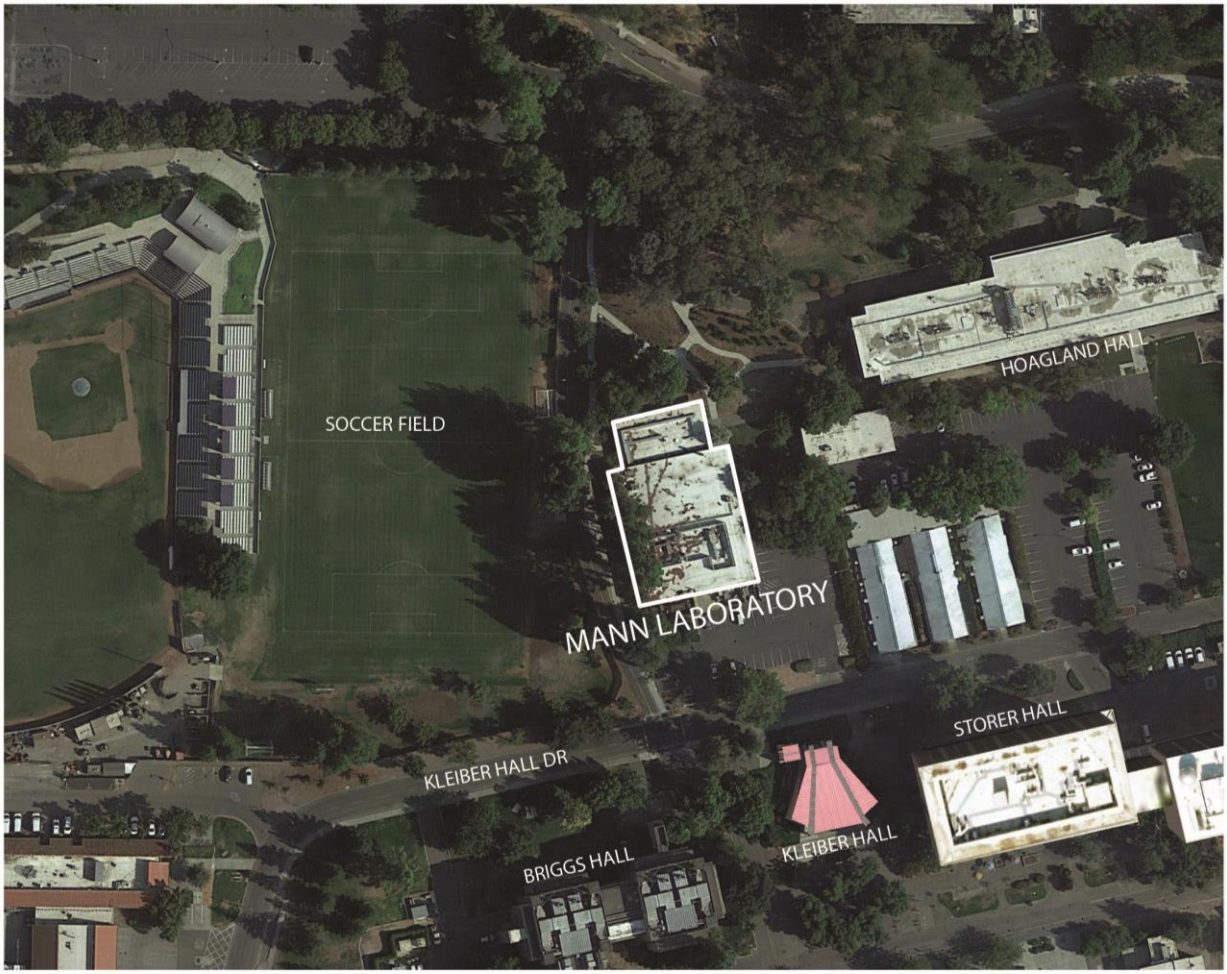
Project Location Map

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
MANN LABORATORY SEISMIC CORRECTIONS
PROJECT NO: 953660



Project Site

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
MANN LABORATORY SEISMIC CORRECTIONS
PROJECT NO: 953660



Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
CAMPUS: DAVIS

	Project Title: Mann Laboratory Seismic Corrections		**Account Number:** Campus Reference 953660		Asset No.	CCCI: 7839 EPI: Cost Indexes	
A	**FUNDING SCHEDULE**	Prefunded					
	Totals (000's)	(2019-20)	(2020-21)	(2021-22)	(2022-23)		
	S $130	S $130					
	P $200		P $200				
	W $470		W $470				
	C $5,000		C $5,000				
	Total Project $5,800	$130	$5,670				
B	**FUNDING REFERENCES**						
		Column (1)	Column (2)	Column (3)	Total All Sources		
	Account No.						
	Source						
C	**COSTS**					%	
0	Site Clearance				$90,000	1.6%	
1	Construction				$4,100,000	70.7%	
2	Exterior Utilities				$90,000	1.6%	
4	Site Development				$40,000	0.7%	
5	Fees				$600,000	10.3%	
6	A&E/PP&C				$260,000	4.5%	
7	Surveys, Tests, Plans & Specifications				$126,000	2.2%	
8	Special Items				$190,000	3.3%	
	SUBTOTAL				$5,496,000	94.8%	
9	Contingency 7.0%				$304,000	5.2%	
	TOTAL P_W_C				$5,800,000	100.0%	
3	Group 2 & 3 Equipment						
	TOTAL PROJECT				$5,800,000		
	Available Funding						
	Available Surplus/(Deficit)						
D	**FINANCING**						
	Campus Funds $130,000						
	State Funds (AB-94) $5,670,000						
	TOTAL $5,800,000						
E	**STATUS OF PROJECT**						
	Project Planning Guide						
	Name: Jim Carroll Title: AVC & University Architect Prepared By: A.Timm		Signature: Leslie Carbahal Name: Leslie Carbahal Title: Director of Capital Planning Approved for Campus, Date:		Budget No. Issue Date Revised Revised	1 12/12/19	
	Program: Fiscal: Cost:		Signature:_____ Title: Approved AVP_PPC, Date:				

Page 1 of 2

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA

CAMPUS: DAVIS

Project Title:	Account Number:		CCCI: 7839
Mann Laboratory Seismic Corrections	Campus Reference 953660	Asset No.	EPI:
			Cost Indexes

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources
ASF Per PPG	ASF	ASF	ASF	ASF
ASF Current	ASF	ASF	ASF	11,460 ASF
OGSF	OGSF	OGSF	OGSF	17,182 OGSF
Ratio (ASF Current / OGSF)	to 1.00	to 1.00	to 1.00	0.67 to 1.00
Construction Cost Per ASF	/ASF	/ASF	/ASF	$357.77 /ASF
Construction Cost Per OGSF	/OGSF	/OGSF	/OGSF	$238.62 /OGSF
Total PWC Cost Per ASF	/ASF	/ASF	/ASF	$506.11 /ASF
Total PWC Cost Per OGSF	/OGSF	/OGSF	/OGSF	$337.56 /OGSF
Grp. 2 & 3 Equip Cost / ASF	/ASF	/ASF	/ASF	/ASF

G CONSTRUCTION COST ANALYSIS

H Notes:

Sub 8 Items:

As-Built Survey	10,000
Value Engineering / Constructibility Review	40,000
Agency Review (DSA & Fire Marshall)	10,000
Haz. Mat. Surveys & Testing	50,000
Commissioning	10,000
Independent Structural / Seismic Review	30,000
Specialty Inspection - Code Compliance	10,000
Special Consultants (Elect Arc Flash)	30,000
Subtotal	**190,000**
Interest During Construction	
Total Sub 8	-

Budget No.	1
Issue Date	12/12/19
Revised	
Revised	

Prepared By: A.Timm

Page 2 of 2

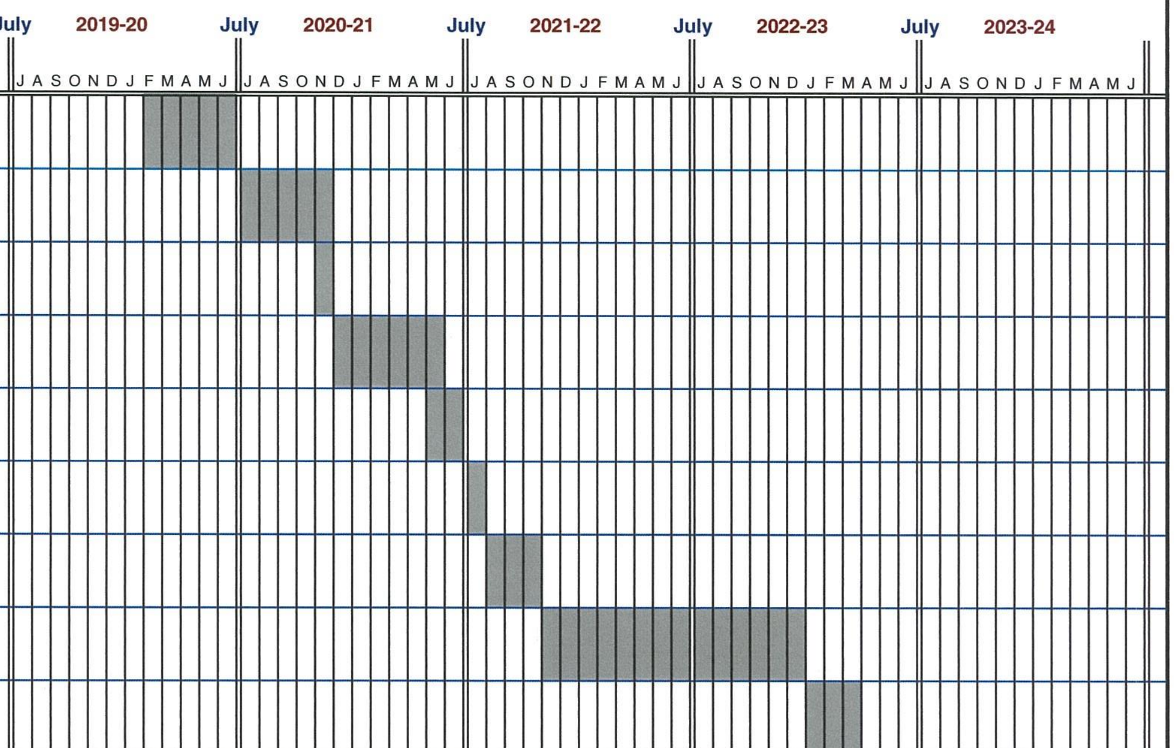
Project Schedule

PROJECT SCHEDULE

UNIVERSITY OF CALIFORNIA, DAVIS

Project Title: Mann Laboratory Seismic Corrections
Project No. - 953660

Activity	No. Of Months
Study Phase	5
Preliminary Plans	5
Preliminary Plans Approval	1
Working Drawings	6
Agency Review	2
Working Drawings Approval	1
Bid & Award Contract	3
Construction	14
Closeout	3
Total Months	39.0



NOTE:

12/13/2019

Approved By: Leslie Carbahal
Leslie Carbahal
Director of Capital Planning

Date: 12/13/19

Environmental Impact Classification

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division *Davis* **Project Account** 953660

Project Title Mann Laboratory Seismic and Critical Deferred Maintenance Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970** - When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: §

☒ **II. CATEGORICALLY EXEMPT** - This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

X	Class 1:	Existing Facilities		Class 17:	Open Space Contracts or Easements
	Class 2:	Replacement or Reconstruction		Class 23:	Normal Operation of Facilities for Public Gatherings
	Class 3:	New Construction or Small Structures		Class 25:	Transfer of Land: Natural Conditions/Historical Resources
	Class 4:	Minor Alterations to Land		Class 30:	Minor Actions: Prevent Hazardous Waste/Substances
	Class 6:	Information Collection		Class 31:	Historical Resource Restoration/Rehabilitation
	Class 11:	Accessory Structures		Class 32:	In-Fill Development Projects
	Class 13:	Acquisition for Conservation		Class 33:	Small Habitat Restoration Projects
	Class 16:	Transfer of Land Ownership for Parks		Other:	

☐ **III. INITIAL STUDY** - This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152):

☐ **IV. ENVIRONMENTAL IMPACT REPORT (EIR)** - It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☐ Programmatic ☐ Stand-Alone (Project-Specific)

Additional project analysis:

☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR:

PROJECT DESCRIPTION -

UC Davis will complete structural seismic safety corrections to Mann Lab located in the central campus. The project may include seismic corrections (roof to wall connectors, beam to beam connectors), critical deferred maintenance (electrical panels, building pumps, select exhaust fans and air handlers), code improvements (entry doors, restrooms, drinking fountains, door hardware, signage), and other building upgrades.

The project is subject to the California Environmental Quality Act (CEQA). It is anticipated the project would qualify as categorically exempt from CEQA. Prior to project approval, a CEQA determination will be made and documentation will be completed.

V. Does this project conform to the approved LRDP? ☒YES ☐NO ☐NA *[If NO or NA, include explanation in Project Description above]*

VI. Heather Davis — Prepared by Heather Davis — 12/20/19 — Date — Heather Davis FOR — Local Approval by Matt Dulcich — 12/20/19 — Date

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification

Signed — Date 12/23/2019

FORM DATE 9/2016 (UCOP Form EIC)

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Davis - Social Sciences and Humanities Building Seismic Corrections	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$33,400	PWC	$33,400

Social Sciences and Humanities Building Seismic Corrections - $33,400,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections and high priority deferred maintenance to Social Sciences and Humanities (SSH) Building. The building is comprised of three separate structures with different Seismic Performance Ratings (SPR): Building 1 (rated V), Building 2 (rated VI), and Lecture Hall (rated III). The project addresses seismic deficiencies in Buildings 1 and 2. Upon completion of the work, the SPR of Building 1 and Building 2 would be upgraded to IV. Mandatory code corrections triggered by the structural work would potentially include but are not limited to: accessibility and egress upgrades, and fire life safety improvements. Total project costs are estimated at $33,400,000, including Preliminary Plans ($1,800,000), Working Drawings ($2,700,000), and Construction ($28,900,000). The construction amount includes $25,050,000 for the construction contract, $1,750,000 for contingency, and $1,500,000 for architectural and engineering services as well as $600,000 for other construction costs. Preliminary Plans are scheduled to begin in July 2020 and complete in February 2021. Working Drawings are scheduled to begin in March 2021 and complete in August 2022. Construction is scheduled to begin in January 2022 and complete in June 2022.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**8050**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Carey Barker	01/13/20	Dana Santa Cruz	01/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

UC DAVIS
UNIVERSITY OF CALIFORNIA

Project Planning Guide

for

Social Sciences and Humanities (SSH)

Building Seismic Corrections

Project Account #953610

December 2019

CAMPUS APPROVAL

Prepared by:

Leslie Carbahal 12/13/19

Leslie Carbahal, Director
Capital Planning
Design and Construction Management

Approved By:

12/13/2019.

Jim Carroll, Associate Vice Chancellor and
University Architect
Design and Construction Management

University of California, Davis
Social Sciences and Humanities Building Seismic Corrections
Project Number 953610
December 2019

Table of Contents

Executive Summary

The University of California, Davis proposes to provide seismic corrections and high priority deferred maintenance to Social Sciences and Humanities (SSH) Building. The building is comprised of three separate structures with different Seismic Performance Ratings (SPR): Building 1 (rated V), Building 2 (rated VI), and Lecture Hall (rated III). The project addresses seismic deficiencies in Buildings 1 and 2.

Seismic corrections are necessary to address deficiencies in the moment-resisting steel framing for these buildings, which have connections known to be vulnerable to earthquake–induced fracture and the lateral bracings of some of the beams are inadequate. Significant structural damage is anticipated in the event of a moderate to large earthquake. Mandatory code corrections triggered by the structural work would potentially include but are not limited to accessibility and egress upgrades and fire/life safety improvements. Upon completion of the work, the SPR of Building 1 and Building 2 would be upgraded to IV.

The approximately 160,000 gross-square-foot (gsf) SSH, comprising five-stories and a basement, has not been structurally upgraded or significantly renovated since it was built in 1994. The building is occupied by twelve departments, including the College of Letters and Sciences Dean's Office, multiple departments within the College of Letters and Sciences, and the department of Agricultural Economics within the College of Agricultural and Environmental Sciences. Space types currently located in the facility include laboratory and office space in support of departmental uses as well as general assignment classroom space.

The scope of the seismic work is a primarily interior retrofit strategy that upgrades to the exterior and interior shear walls, moment frame bracing, and seismic joint modifications. Related repairs and restoration scope would include reconfiguration of walls; modifications to building systems; and replacement of ceilings, lighting, and finishes in areas impacted by the work. Exterior restoration will address building landscape and access disrupted by the seismic correction work. Deferred maintenance work addresses exterior waterproofing and elevators.

Construction will be phased to allow for as much continued occupancy as possible during construction. A small portion of the building's occupants would be relocated for the full construction window and rotating additional internal relocations would be necessary to support the repairs. Work would be timed to minimize the impacts of construction to building occupants.

Problem Statement

Social Science and Humanities is home to twelve departments, including the College of Letters and Sciences Dean's Office; multiple departments within the College of Letters and Sciences and the department of Agricultural Economics within the College of Agricultural and Environmental Sciences. Space types currently located in the seismically deficient buildings facility include

laboratory and office space in support of departmental uses; general general assignment classroom space is located in the SPR III lecture hall.

The College of Letters and Science Dean's Office occupies approximately 12,500 assignable-square-feet (asf) across approximately 75 rooms. These include academic and administrative offices and associated support spaces. The College of Letters and Science is the largest of the schools and colleges at UC Davis. The College is home to nearly half of all undergraduates at UC Davis, in addition to teaching core curriculum that support general education requirements for all undergraduate students. A number of key departments within the College of Letters and Science are also located in the SSH. An additional approximately 47,500 asf in the facility is occupied by the deparments outlined in Table 1 below.

Table 1. Letters and Sciences Departments in SSH

Department	Approximate ASF Occupied	Space Type	Notes
Anthropology	1,300	Academic and Administrative Office Special Class Lab	• Department serves approximately 200 undergraduate majors • Proximate to the Department's main space in Young Hall
Economics	13,700	Adsmistrative Office Research Office	• Department serves approximately 1,700 undergraduate majors
History	10,500	Academic and Administrative Office	• Department serves approximately 300 undergraduate majors
Philosophy	5,000	Acafemic and Administrative Office	• Department serves approximately 200 undergraduate majors
Psychology	3,900	Research Lab Research Office	• Department serves approximately 2,100 undergraduate majors • Proximate to the Department's larger footprint in Young Hall and off-campus space at Cousteau Place in the city of Davis
Science and Technology Studies	2,100	Academic and Research Office	• Department serves approximately 30 undergraduate majors
Sociology	8,900	Academic and Administrive Office	• Department serves approximately 680 undergraduate majors

In addition to academic departments in the College of Letters and Sciences, the Hemispheric Institute of the Americas occupies approximately 1,000 asf of academic and administrative office space. This interdisciplinary group brings together faculty and graduate students that focus on the study of transnational processes in the American Hemisphere. This group supports a minor in Latin American & Hemispheric Studies.

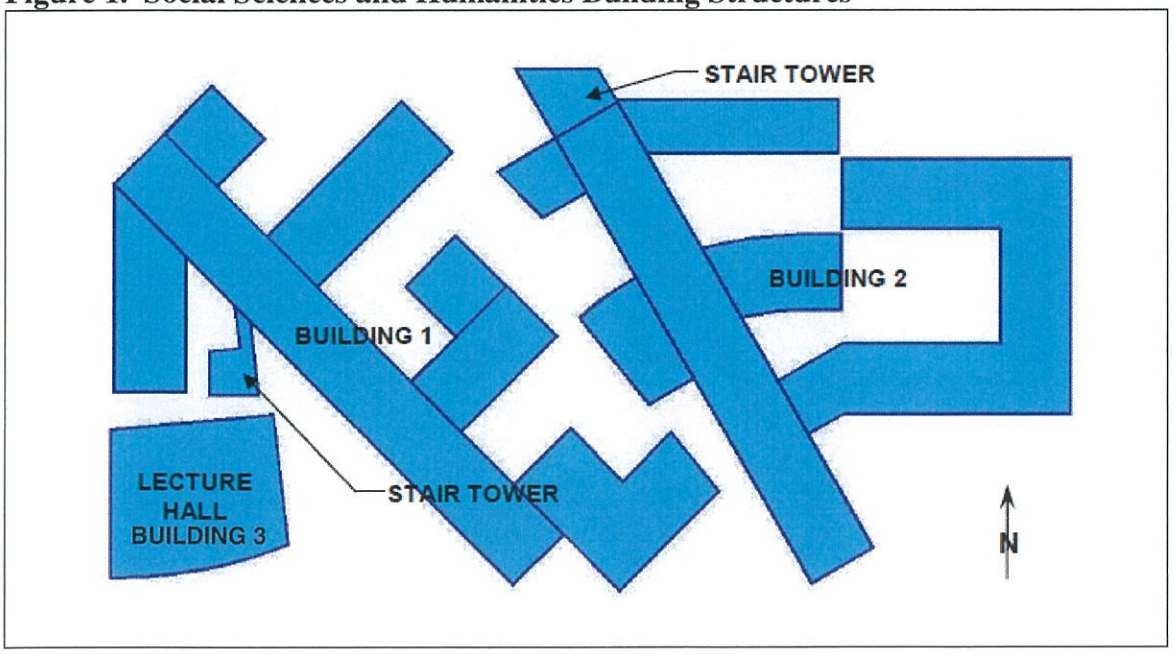
The Department of Agricultural and Resource Economics (ARE) within the College of Agricultural and Environmental Sciences is located in the SSH Building. ARE occupies approximately 18,100 asf of office and support space in support of more than 1,500 undergraduate majors as well as Ph.D. and masters programs with enrollment of approximately 120 students.

The SSH also includes eight general assignment classrooms providing 463 seats, 369 of which are located in the large lecture hall (building 3), which is not in need of seismic corrections. The remaining 94 are in seminar rooms located throughout the building.

Social Sciences and Humanities Building

The Social Sciences and Humanities Building is a five-story plus basement multi-structure facility consisting of two main buildings and an adjacent lecture hall. The buildings are structurally separate, but are architecturally integrated at the lower levels with elevated walkways at select locations. Buildings 1 and 2 are seismically deficient; the lecture hall (building 3) meets the University of California Seismic Safety Policy. Building 1 has a SPR of V and Building 2 is rated VI (see Figure 1). SSH is located on the core UC Davis campus, with Hickey Gym to the north across North Quad, the campus border at A Street to the east, Young Hall to the south, and the Memorial Union to the west across East Quad. The facility accommodates a variety of uses including academic and administrative office, research, research support and instruction. There are no plans for major relocations or changes of use associated with the building.

Figure 1. Social Sciences and Humanities Building Structures



SSH buildings 1 and 2 are rectangular with sloping roofs and have multiple orthogonal or skewed flat-roofed wings that project outward from the main structure. At the below-grade courtyard level, building 1 and the courtyard are structurally integrated. The building was designed in accordance with building codes of the time and it has not been structurally upgraded since it was built. The gravity force-resisting system for all of the structures consists of concrete-filled metal deck floors and unfilled metal deck roofs supported by a steel frame of wide-flange beams and columns. Belled, reinforced concrete piers support the building columns at the ground level. Portions of the building that extend below grade on the courtyard level are supported by continuous footings and spread footings interconnected with grade beams.

The lateral force-resisting system includes horizontal diaphragms composed of the concrete filled metal floor decks and the unfilled metal roof decks. Steel moment frames and reinforced concrete shear walls are the vertical bracing elements. Perimeter walls at the courtyard level act as both retaining walls and vertical bracing. Interior concrete shear walls are distributed throughout the courtyard level; however, in levels above grade, the locations of the shear walls are limited to elevator and stair shafts. Both Building 1 and Building 2 have concrete stair towers that connect to the buildings through a series of elevated steel framed walkways. The stair tower walkways at the 2nd, 3rd, and 4th levels of Building 1 are not seismically isolated from the main building. At Building 2, the 4th and 5th level bridges are seismically isolated from the main building in the longitudinal direction. Below the 4th level, the floor diaphragm of Building 2 is continuous, and seismically attached, to the concrete stair tower. The concrete walls at the Building 2 stair tower have a significant number of openings that limit the length that can be used as shear walls. Openings that wrap around the northeast corner of the stair tower create vertical discontinuities in the shear walls.

Each of the wings are architecturally integrated with their respective main buildings; however, the extent of structurally integration and/or isolation varies. Structural integration and/or isolation of the building wings is accomplished with one of three methods: 1) full structural integration for both vertical and lateral loads, 2) vertical load transfer and lateral load isolation provided by sliding connections at beam ends and seismic joints at floor and roof diaphragms, or 3) full structural isolation provided by seismic joints and no common framing between the wing and the main building.

Seismic Deficiencies

A structural analysis has determined that the Social Sciences and Humanities building does not have adequate seismic resistance to comply with the UC Seismic Safety Policy. The exterior and interior shear walls, moment frame bracing, and seismic joints do not have adequate capacity to resist forces from a moderate to large seismic event. The following building features pose a significant life safety hazard:

- Buildings 1 and 2: The 1st, 2nd, and 3rd floor sliding connections supporting the building wing beams at the main building.
- Building 1: The elevated walkways connecting the stair tower to the main building at the 2nd, 3rd, and 4th floors.

- Building 2: The concrete walls at the stair tower are highly perforated and have vertical discontinuities.

For these reasons, SSH has a SPR of VI.

Fire/Life Safety and Accessibility Deficiencies

The building does not comply with current accessibility codes under the Americans with Disabilities Act or the California Administrative Code. Modifications are needed to provide code-compliant entry doors, elevators, restrooms, drinking fountains, door hardware, and signage. There are also deficiencies to the building's fire alarm system.

Deferred Maintenance
A Facility Condition Assessment (FCA) was completed in May 2018 and has been catalogued in the Integrated Capital Asset Management Program (ICAMP). The assessment provides a valuation of the building's deferred maintenance needs based on actual asset conditions and allows the campus to effectively prioritize projects and manage risk. Critical deferred maintenance elements identified as highest priority in the FCA include replacement of elevators and exterior sealed joints. There are also deficiencies in the building's lighting, heating, ventilation and air conditioning system, and roofing.

Project Description

Seismic Corrections, Code Upgrades, and Deferred Maintenance (State-funded)
The proposed project would provide seismic corrections and address critical deferred maintenance in the Social Sciences and Humanities building. The SSH is comprised of three separate structures, two of which require corrections to comply with the University of California Seismic Safety Policy; Building 1 has a SPR of V and Building 2 is rated VI. The project components described in this section reflect the most critical facility needs for SSH as identified during project planning and preliminary engineering studies. The exact seismic solution will be the subject of further assessment during design and limited by projected construction market conditions at the time of bid. Upon completion of the work, the seismic rating would be upgraded to a seismic performance rating of IV.

Seismic Corrections
- Add and extend interior and exterior shear walls, moment frame bracing, seismic joint modifications, and infill of openings.
- Interior and exterior work as triggered by areas disrupted by seismic corrections: landscape, caulking, gutter replacement, walkway and stair replacement, painting.

Deferred Maintenance
- Replace passenger elevators;
- Exterior sealant joints and gutters; and
- Wall repairs.

Code Upgrades
- Access upgrades to ensure code compliant access (entry doors, elevators, drinking fountains, door hardware, and signage) and restrooms; and
- Fire alarm upgrades.

Program Improvements (Non-Stated Funded)
The mandatory seismic correction and code-triggered upgrade work may provide an opportunity to make program improvements in the Social Sciences and Humanities Building. The campus is evaluating program improvements to select areas of the building, which may or may not be directly impacted by the seismic work. Potential additional improvement under consideration are building-

specific but could include reconfiguration of walls to improve space utilization and functionality; modifications to the building systems; and replacement of ceilings, lighting, and finishes not impacted by seismic or deffered maintenance work. A cost-benefit analysis of potential additional improvements will be conducted during the preliminary planning phase of the project and any non-State funded scope and budget increases recommended to be included in the project will be requested at the time of budget and design approval.

Space Impacts

It is anticipated that the building will remain occupied during construction. The seismic work will disrupt occupied portions of the building. Challenges anticipated for building occupants include relocations mandated by the work, the exacerbation of existing building wayfinding challenges as a result of perimeter construction, bike and vehicle parking displacement, and temporary restroom, utility and elevator shutdowns. Construction noise may also impact building occupants and the project will explore options to minimize disruption.

Construction will be phased to allow for as much continued occupancy as possible during construction. A small portion of the building's occupants would be relocated for the full construction window (approximately 3,000 asf) and rotating additional internal relocations would be necessary to support the repairs. Campus Space Planning will work with the building occupants to provide temporary relocation space and to coordinate the internal relocations for those displaced by construction. Work would be timed to minimize the impacts of construction to building occupants.

No impacts to usable building square footage or program space or a change in use are anticipated to result from this project.

Cost Basis and Funding Plan

The campus has completed general pre-design studies and cost analyses for this project. A Tier 2 evaluation as well as some additional studies have been completed in order to assess the seismic condition of the Social Sciences and Humanities Building.

Deferred maintenance costs are based on campus estimates to complete the work as a component of the Social Sciences and Humanities Building Seismic Corrections project and may not correspond with the opportunity costs identified in ICAMP.

The project will be funded by $33.4 million in external financing supported by State General Funds (California Education Code Sections 92495 et seq.). Any increase in budget for program improvements scope identified during preliminary planning will be funded by non-State resources.

Sustainability

The project will comply with the UC Sustainable Practices policy. As required by the policy, the project will adopt energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints, defined project scope, and regulatory and programmatic requirements.

Relationship to University Mission and Objectives

The project supports the instruction and research mission of the University of California by improving the seismic safety of facilities for teaching and research in a campus academic building.

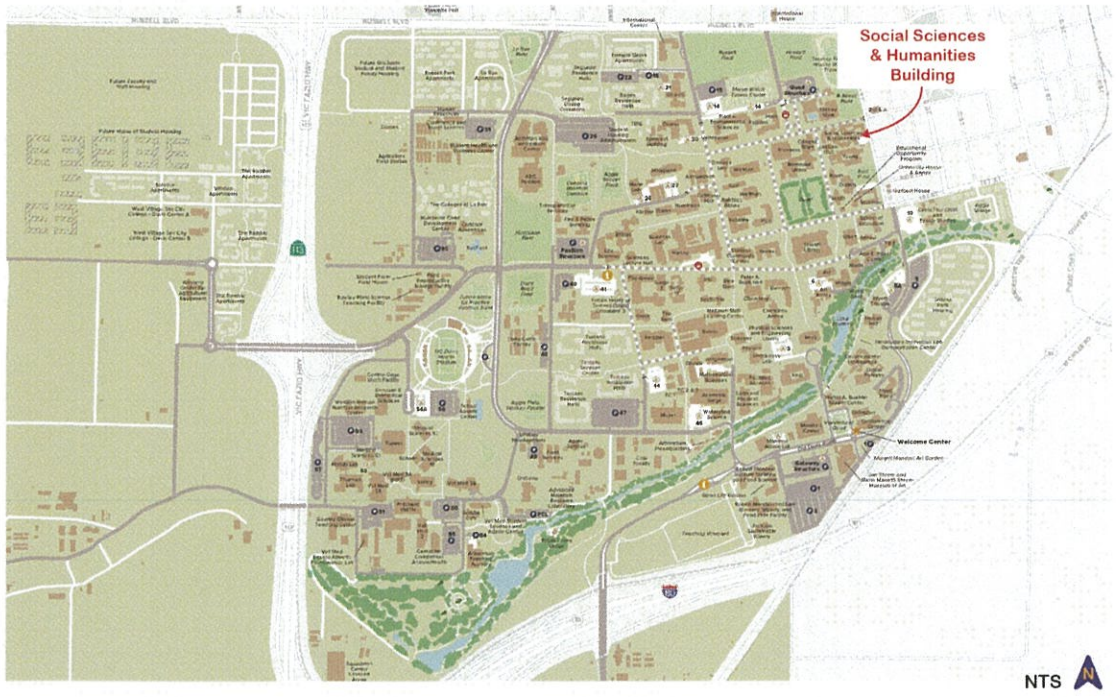
Alternatives

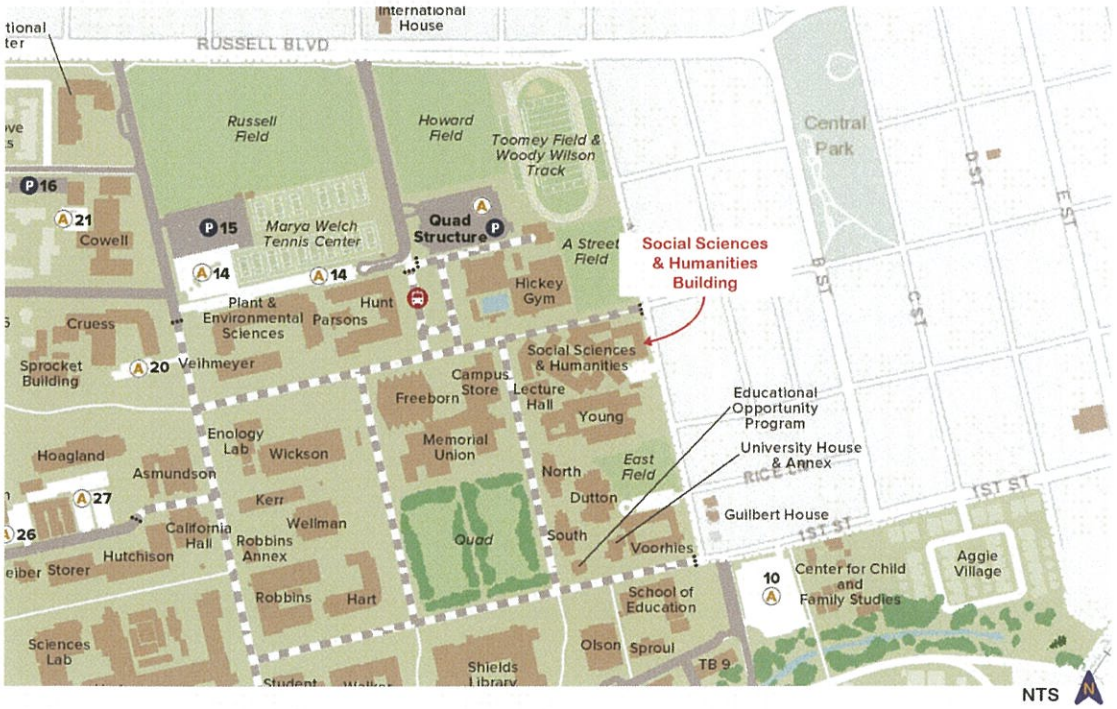
Seismic correction of the Social Sciences and Humanities Building is the best option to bring the building into compliance with the UC Seismic Safety Policy. The facility is fully-occupied by active academic and administrative programs, research, and instruction in direct support of fulfilling the University's mission. The Davis campus is generally space constrained and does not have vacant space resources that would allow for the permanent relocation of all building occupants without constructing replacement space. Demolition and replacement is also not a viable alternative; the work proposed in this project represents less than twenty percent of the replacement cost of the building, which generally continues to function well for the uses it supports.

The project proposes to renovate Buildings I and 2 of SSH to a SPR of IV in compliance with the UC Seismic Safety Policy. The campus does not have information about the incremental cost associated with upgrading the building to a rating of III beyond the anticipated minimal acceptable performance rating of IV.

Project Location Map

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
SOCIAL SCIENCES & HUMANITIES BUILDING SEISMIC CORRECTIONS
PROJECT NO: 953610





Site Plan

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
SOCIAL SCIENCES & HUMANITIES BUILDING SEISMIC CORRECTIONS
PROJECT NO: 953610

NTS

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
CAMPUS: DAVIS

	Project Title: Social Sciences & Humanities Building Seismic Corrections		**Account Number:** Campus Reference 953610		Asset No.	CCCI: 8050 EPI: Cost Indexes
A	**FUNDING SCHEDULE**	Prefunded				
	Totals (000's)	(2019-20)	(2020-21)	(2021-22)	(2022-23)	
	P $1,800 W $2,700 C $28,900		P $1,800 W $2,700 C $28,900			
	Total Project $33,400		$33,400			
B	**FUNDING REFERENCES**					
		Column (1)	Column (2)	Column (3)	Total All Sources	
	Account No.					
	Source					
C	**COSTS**					%
0	Site Clearance				$500,000	1.5%
1	Construction				$23,800,000	71.3%
2	Exterior Utilities				$250,000	0.7%
4	Site Development				$500,000	1.5%
5	Fees				$3,500,000	10.5%
6	A&E/PP&C				$1,500,000	4.5%
7	Surveys, Tests, Plans & Specifications				$750,000	2.2%
8	Special Items				$850,000	2.5%
	SUBTOTAL				$31,650,000	94.8%
9	Contingency 7.0%				$1,750,000	5.2%
	TOTAL P_W_C				$33,400,000	100.0%
3	Group 2 & 3 Equipment					
	TOTAL PROJECT				$33,400,000	
	Available Funding					
	Available Surplus/(Deficit)					
D	**FINANCING**					
	State Funds (AB-94) $33,400,000					
	TOTAL $33,400,000					
E	**STATUS OF PROJECT**					
	Project Planning Guide					
	Name: Jim Carroll Title: AVC & University Architect Prepared By: A.Timm		Signature: Leslie Carbahal Name: Leslie Carbahal Title: Director of Capital Planning Approved for Campus, Date:		Budget No. Issue Date Revised Revised	1 12/12/19
	Program: Fiscal: Cost:		Signature:_____ Title: Approved AVP_PPC, Date:			

Page 1 of 2

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
CAMPUS: DAVIS

Project Title:	Account Number:		CCCI: 8050
Social Sciences & Humanities Building Seismic Corrections	Campus Reference 953610	Asset No.	EPI: Cost Indexes

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources
ASF Per PPG	ASF	ASF	ASF	ASF
ASF Current	ASF	ASF	ASF	84,721 ASF
OGSF	OGSF	OGSF	OGSF	172,655 OGSF
Ratio (ASF Current / OGSF)	to 1.00	to 1.00	to 1.00	0.49 to 1.00
Construction Cost Per ASF	/ASF	/ASF	/ASF	$280.92 /ASF
Construction Cost Per OGSF	/OGSF	/OGSF	/OGSF	$137.85 /OGSF
Total PWC Cost Per ASF	/ASF	/ASF	/ASF	$394.24 /ASF
Total PWC Cost Per OGSF	/OGSF	/OGSF	/OGSF	$193.45 /OGSF
Grp. 2 & 3 Equip Cost / ASF	/ASF	/ASF	/ASF	/ASF

G CONSTRUCTION COST ANALYSIS

H Notes:

Sub 8 Items:	
Environmental / EIR Services	40,000
As-Built Survey	90,000
Value Engineering / Constructibility Review / CM	220,000
Agency Review (DSA & Fire Marshall)	130,000
Haz. Mat. Surveys & Testing	30,000
Commissioning	30,000
Independent Structural / Seismic Review	70,000
Archeological Monitoring	50,000
Specialty Inspection - Code Compliance	100,000
Special Consultant-Arborist/WP/Wayfinding/Elevator	90,000
Subtotal	**850,000**
Interest During Construction	
Total Sub 8	-

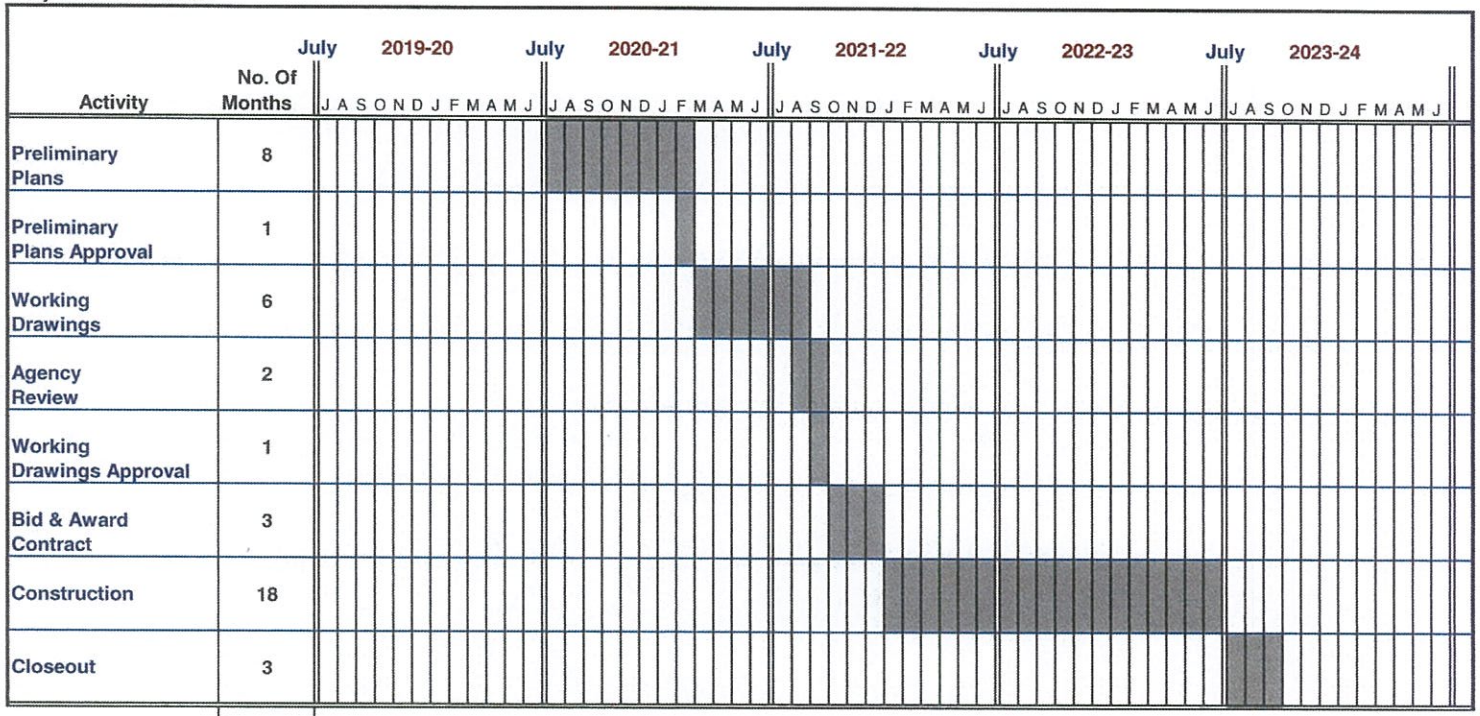
Budget No.	1
Issue Date	12/12/19
Revised	
Revised	

Prepared By: A.Timm

PROJECT SCHEDULE

UNIVERSITY OF CALIFORNIA, DAVIS

Project Title: Social Sciences & Humanities Seismic Corrections
Project No. - 9536100



Activity	No. Of Months
Preliminary Plans	8
Preliminary Plans Approval	1
Working Drawings	6
Agency Review	2
Working Drawings Approval	1
Bid & Award Contract	3
Construction	18
Closeout	3
Total Months	39.0

NOTE:

Approved By: Leslie Carbahal
Leslie Carbahal
Director of Capital Planning

Date: 13 Dec. 2019

12/13/2019

Environmental Impact Classification

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division *Davis* **Project Account** 953610

Project Title Social Sciences & Humanities Seismic and Critical Deferred Maintenance Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970** - When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: § _____

☐ **II. CATEGORICALLY EXEMPT** - This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

_____	Class 1: Existing Facilities	_____	Class 17: Open Space Contracts or Easements
_____	Class 2: Replacement or Reconstruction	_____	Class 23: Normal Operation of Facilities for Public Gatherings
_____	Class 3: New Construction or Small Structures	_____	Class 25: Transfer of Land: Natural Conditions/Historical Resources
_____	Class 4: Minor Alterations to Land	_____	Class 30: Minor Actions: Prevent Hazardous Waste/Substances
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_____	Class 13: Acquisition for Conservation	_____	Class 33: Small Habitat Restoration Projects
_____	Class 16: Transfer of Land Ownership for Parks	_____	Other: _____

☐ **III. INITIAL STUDY** - This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152): _____

☒ **IV. ENVIRONMENTAL IMPACT REPORT (EIR)** - It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☒ Programmatic ☐ Stand-Alone (Project-Specific) UC Davis 2018 Long Range Development Plan EIR (SC# 2017012008)

Additional project analysis:

☐ None/Findings Only ☒ Addendum ☐ Subsequent ☐ Supplement to EIR: _____

PROJECT DESCRIPTION -

UC Davis will complete structural seismic safety corrections to the Social Sciences & Humanities building located in the central campus. The project may include seismic corrections (exterior and interior shear walls, moment frame bracing, seismic joint modifications, and infill of openings), critical deferred maintenance (elevators, exterior caulking, perimeter sidewalk/paving), code improvements (entry doors, elevators, drinking fountains, door hardware, signage), and other potential building upgrades (landscaping and pathway renewal, façade modifications along A street).

The project is subject to the California Environmental Quality Act (CEQA). It is anticipated the project would qualify as either categorically exempt from CEQA or an addendum to the 2018 LRDP EIR. Prior to project approval, a CEQA determination will be made and documentation will be completed.

V. Does this project conform to the approved LRDP? ☒YES ☐NO ☐NA *[If NO or NA, include explanation in Project Description above]*

VI. Heather Davis 12/20/19 Heather Davis FOR 12/20/19

Prepared by Heather Davis — Date — Local Approval by Matt Dulcich — Date

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification

Signed — 12/23/2019 Date

FORM DATE 9/2016 (UCOP Form EIC)

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Davis - Voorhies Hall Seismic Corrections	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$24,200	PWC	$24,200

Budget Request Summary

Voorhies Hall Seismic Corrections - $24,200,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections and high priority deferred maintenance to Voorhies Hall, a 55,279 gross-square-foot structure with a Seismic Performance Rating (SPR) of VI. Upon completion of the work, the SPR would be upgraded to IV. Mandatory code corrections triggered by the structural work would potentially include but are not limited to accessibility and egress upgrades and fire life safety improvements. Total project costs are estimated at $24,200,000, including Preliminary Plans ($1,400,000), Working Drawings ($2,000,000), and Construction ($20,800,000). The construction amount includes $18,040,000 for the construction contract, $1,270,000 for contingency, and $1,490,000 for architectural and engineering services. Preliminary Plans are scheduled to begin in July 2020 and complete in February 2021. Working Drawings are scheduled to begin in March 2021 and complete in August 2022. Construction is scheduled to begin in January 2022 and complete in June 2022.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**8014**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Carey Barker	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

UCDAVIS
UNIVERSITY OF CALIFORNIA

Project Planning Guide

for

Voorhies Hall

Seismic Corrections

Project Account #953620

December 2019

CAMPUS APPROVAL

Prepared by:

Leslie Carbahal 12/13/19

Leslie Carbahal, Director
Capital Planning
Design and Construction Management

Approved By:

12/13/2019.

Jim Carroll, Associate Vice Chancellor and
University Architect
Design and Construction Management

University of California, Davis
Voorhies Hall Seismic Corrections
Project Number 953620
December 2019

Table of Contents

Executive Summary

The University of California, Davis proposes to provide seismic corrections and high priority deferred maintenance to Voorhies Hall, a three-story plus basement concrete structure with a Seismic Performance Rating (SPR) of VI. Seismic deficiencies are due to inadequate shear capacity in the above-grade levels of the building. Significant structural damage is anticipated in the event of a moderate to large earthquake. Mandatory code corrections triggered by the structural work would potentially include but are not limited to accessibility and egress upgrades and fire/life safety improvements. Upon completion of the work, the SPR would be upgraded to IV.

The 55,279 gross-square-foot (gsf) building has not been structurally upgraded or significantly renovated since it was built in 1959. It is occupied by a number of departments within the College of Letters and Sciences, including the Davis Humanities Institute, the English Department, and the University Writing Program. Space types in the facility include academic and administrative offices and associated meeting and support spaces.

The seismic work would include upgrades to the exterior shear walls, foundation reinforcing, and tie beam strengthening. Related repairs and restoration scope would include minor reconfiguration of walls; modifications and possible relocation of building systems; and replacement of ceilings, lighting, and finishes in areas impacted by the work. The project will also restore impacted pathways and other exterior improvements. Deferred maintenance corrections address electrical distribution, and code triggered improvements include upgrades to the fire alarm system as well as entry doors, restrooms, drinking fountains, door hardware and signage, and exterior path of travel.

Because most of the seismic work is exterior, construction would be planned to allow the building to remain occupied during construction, to the greatest extent possible. Work would be timed and phased to minimize the impacts of construction to building occupants, including weekend, off-hour, and summer work for utility shutdowns. The nature of the uses in Voorhies Hall will support some temporary work from home accommodations and short-term internal and adjacent on-campus relocations.

Problem Statement

Voorhies Hall is home to a number of departments within the College of Letters and Sciences, including the English Department, the Davis Humanities Institute, and the University Writing Program. The Department of English supports approximately 640 undergraduate majors and approximately 90 graduate students. Undergraduate students earn a Bachelor of Arts degree and take courses covering a variety of media, genres, topics, and historical periods. All students complete core coursework comprised of specific courses; students then build their own path through the major based on interests and ultimately specialize either in Literary Criticism and Theory or Creative Writing. As Voorhies' primary occupant, the Department of English utilizes approximately 11,000 assignable-square-feet (asf) across all floors of the building.

The University Writing Program (UWP) promotes excellence in written communication among UC Davis students and faculty and emphasizes the importance of writing in the larger community. UWP helps undergraduate and graduate students from all disciplines master the writing skills they need to succeed as academics, professionals, and citizens. UWP's education and engagement has supported UC Davis' consistent ranking as one of the nation's premier universities for "Writing in the Disciplines" by US News & World Report. UWP occupies approximately 8,700 asf on the first and third floors of Voorhies Hall.

The UC Davis Humanities Institute (DHI) provides programs for teaching, research, and public engagement that promote the arts and humanities as a central and meaningful part of life at the university and beyond. DHI occupies approximately 1,800 asf of office and conference space on the second floor.

Voorhies Hall

Voorhies Hall is a three-story plus basement reinforced concrete structure that accommodates academic and administrative offices and associated meeting and support spaces. The building has a SPR of VI. Voorhies is located on the east side of the core UC Davis campus, with the campus border at A Street to the east, the School of Education Building across Shields Avenue to the south, the University House and Dutton Hall to the west, and Rice Lane to the north. Voorhies Hall was designed for academic and administrative office use and continues to generally function well for these uses. There are no plans to relocate the departments currently occupying the building and the building use is not anticipated to change.

Voorhies Hall, rectangular-shaped in plan, is a reinforced concrete building with an interior courtyard. The building was designed in accordance with building codes of the time and has not been structurally upgraded since it was built in 1959. The gravity force-resisting system consists of one-way, reinforced concrete slabs, cast monolithically with reinforced concrete beams and either reinforced concrete columns or walls support the grade beams. The caissons are reinforced for the top six feet and are unreinforced below. The lateral force-resisting system is similar and includes the reinforced concrete slabs, which act as diaphragms, and interior and exterior reinforced concrete shear walls. Shear walls are doweled to grade beams and the wall ends or corners are nominally connected to plain concrete caissons. At the four building corners, the exterior shear walls do not extend down from the roof to the foundation level. Instead, the shear walls stop at the second floor and are supported on concrete columns.

Seismic Deficiencies

A structural analysis has determined that Voorhies Hall does not have adequate seismic resistance to comply with the University of California Seismic Safety Policy. The shear walls and coupling beams are subject to significant axial forces and lack modern ductile steel reinforcement detailing. The beams supporting the shear walls on the second floor have minimal shear reinforcement and inadequate splice lengths. As a result, they do have adequate capacity to resist the loads imposed on them by the discontinuous shear walls. Shear walls are doweled into the supporting caissons but lack steel reinforcement over the remainder of their length. As a result the shear wall system has inadequate capacity to resist overturning demands. The exterior stair wells at the east and west

sides are vulnerable to damage due to anticipated rocking of the shear walls that support these stairs. For these reasons, Voorhies Hall has a SPR of VI.

Fire/Life Safety and Accessibility Deficiencies

The building does not comply with current accessibility codes under the Americans with Disabilities Act or the California Administrative Code. Modifications are needed to provide code-compliant entry doors, elevator, restrooms on the second and third floors, drinking fountains, door hardware, and signage. There are also deficiencies in the building's fire alarm system.

Deferred Maintenance

A Facility Condition Assessment (FCA) was completed in December 2018 and has been catalogued in the Integrated Capital Asset Management Program (ICAMP). The assessment provides a valuation of a building's deferred maintenance needs based on actual asset conditions and allows the campus to effectively prioritize projects and manage risk. Critical deferred maintenance elements identified as highest priority in the FCA include replacement and/or upgrades to motor control centers, electrical distribution panels, and electrical panels located on all floors of the building. Elevator upgrades and/or replacement is also identified as a high priority deferred maintenance need and there are also deficiencies in the building's cooling and heating hot water systems.

Project Description

Seismic Corrections, Code Upgrades, and Deferred Maintenance (State-funded)

The proposed project would provide seismic corrections and address critical deferred maintenance and fire/life safety and accessibility code-mandated deficiencies to Voorhies Hall. The project components described in this section reflect the most critical facility needs for Voorhies Hall as identified during project planning and preliminary engineering studies. The exact seismic solution will be the subject of further assessment during design. Upon completion of the work, the seismic rating would be upgraded to a SPR of IV.

Seismic Corrections

- Add and extend interior and exterior shear walls, foundation reinforcing, and tie beam strengthening; moment frame bracing, seismic joint modifications, and infill of openings. Exterior drilling to install reinforced piers on all exterior walls of the building perimeter; and
- Exterior landscape replacement at exterior and courtyard where disrupted to complete seismic improvements. Exterior and select interior painting will be required in areas impacted by the seismic improvements.

Deferred Maintenance

- Replace and/or upgrade two basement motor control centers;
- Replace and/or upgrade two electrical distribution panels;
- Replace and/or upgrade approximately eleven electrical panels located on all floors of the building;

- Replace and/or upgrade the elevator; and
- Remove chillers and cooling towers required to provide space for the distribution panel work. Project will address deficiencies in the building's cooling and hot water systems during this disruption, connecting to the campus chilled water system and installing new chilled water pumps (removing the need to address necessary replacement of chemical feeds for cooling towers, chillers, and chilled water pumps).

Code Upgrades

- Access upgrades to ensure code compliant access (entry doors, elevators, drinking fountains, door hardware and signage) and restrooms; and
- Fire alarm upgrades.

Program Improvements (Non-Stated Funded)

The mandatory seismic correction and code-triggered upgrade work may provide an opportunity to make program improvements for Voorhies Hall. The campus is evaluating program improvements to select areas of the building, which may or may not be directly impacted by the seismic work. Potential additional improvements under consideration include reconfiguration of walls to improve space utilization and functionality; modifications to the building systems; and replacement of ceilings, lighting, and finishes not impacted by seismic or deferred maintenance work. A cost-benefit analysis of potential additional improvements will be conducted during the preliminary planning phase of the project and any non-State funded scope and budget increases recommended to be included in the project will be requested at the time of budget and design approval.

Space Impacts

It is anticipated that the building will remain occupied during construction. Because most of the seismic work is exterior, building occupants could generally remain in their offices during construction. Challenges anticipated for building occupants during construction include wayfinding issues due to the bulk of the work occurring at the building perimeter; bike and vehicle parking displacement; temporary water shut downs; heating ventilation and air conditioning, and electrical system shut downs; restroom closures; and elevator shut downs. Construction noise may also impact building occupants and the project will explore options to minimize disruption.

Work would be timed to minimize the impacts of construction to building occupants to the greatest extent possible, including weekend and summer work for utility shutdowns. The nature of the uses in Voorhies Hall will support some temporary work from home accommodations and short-term on campus relocations. Few instances of on-campus relocations are anticipated; in these instances campus Space Planning will work with the building occupants and the College of Letters and Sciences to provide temporary relocation space.

No impacts to usable building square footage or program space or a change in use are anticipated to result from the project.

Cost Basis and Funding Plan

The campus has completed general pre-design studies and cost analyses for this project. A tier 2 evaluation as well as some additional studies have been completed in order to assess the seismic condition of Voorhies Hall.

Deferred Maintenance costs are based on campus estimates to complete the work as a component of the Voorhies Hall Seismic Corrections project and may not correspond with opportunity cost estimates listed in ICAMP.

The project will be funded by $24.2 million in external financing supported by State General Funds (California Education Code Sections 92495 et seq.). Any increase in budget for program improvements scope identified during preliminary planning will be funded by non-State resources.

Sustainability

The project will comply with the UC Sustainable Practices policy. As required by the policy, the project will adopt energy efficiency and sustainability to the fullest extent possible, consistent with defines project scope, budgetary constraints, and regulatory and programmatic requirements.

Relationship to University Mission and Objectives

The project supports the instruction and research mission of the University of California by improving the seismic safety of facilities for teaching and research in a campus academic building.

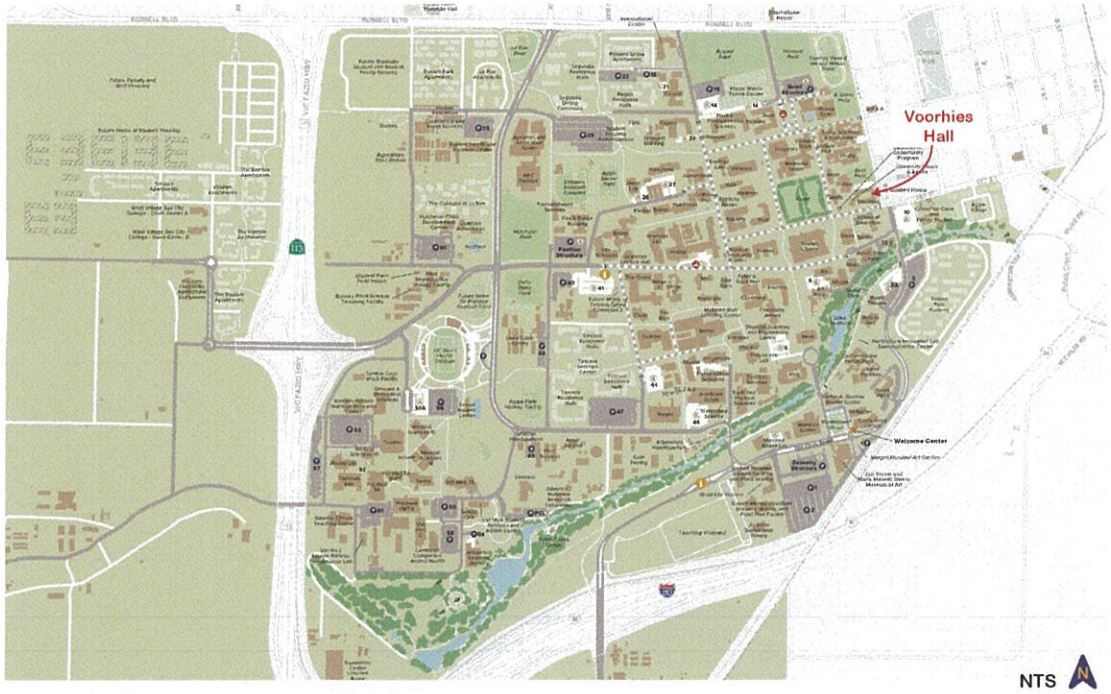
Alternatives

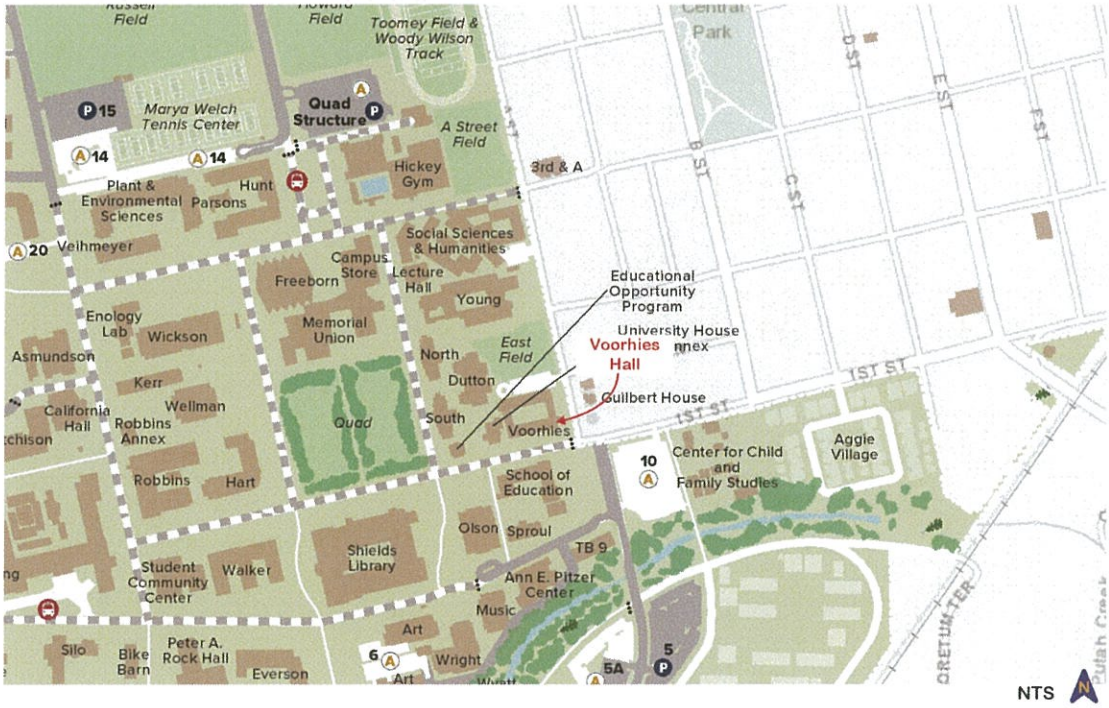
Seismic renovation of Voorhies Hall is the best option to bring the building into compliance with the UC Seismic Safety Policy. The facility is fully-occupied by active academic and administrative programs in direct support of fulfilling the University's mission. The Davis campus is generally space constrained and does not have vacant space resources that would allow for the permanent relocation of all building occupants without constructing replacement space. Demolition and replacement is also not a viable alternative; the work proposed in this project represents less than thirty percent of the replacement cost of the building, which generally continues to function well for the uses it supports.

The project proposes to renovate Voorhies Hall to a SPR of IV in compliance with the UC Seismic Safety Policy. The campus does not have information about the incremental cost associated with upgrading the building to a rating of III beyond the anticipated minimal acceptable performance rating of IV.

Project Location Map

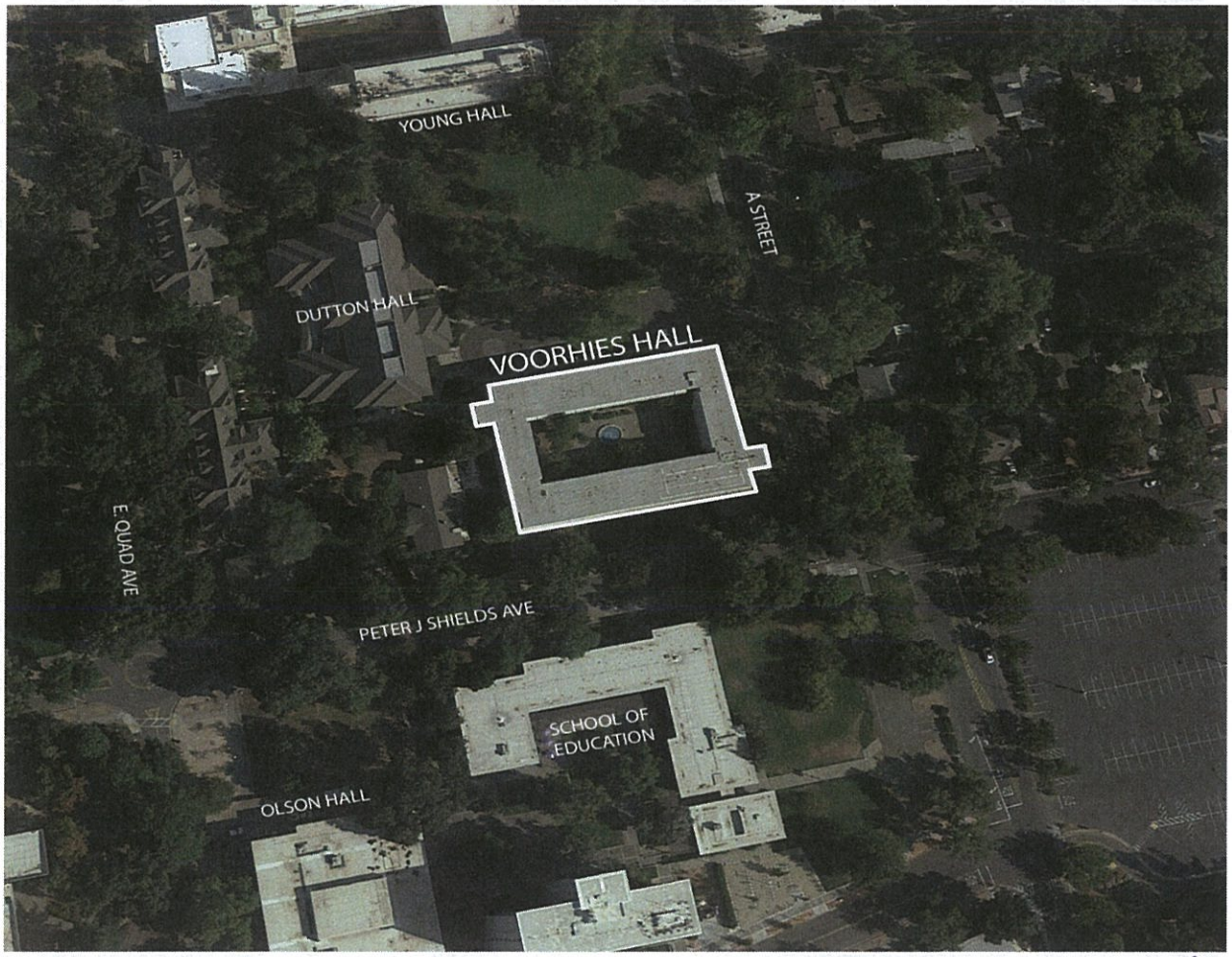
UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
VOORHIES HALL SEISMIC CORRECTIONS
PROJECT NO: 953620





Project Site

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
VOORHIES HALL SEISMIC CORRECTIONS
PROJECT NO: 953620



NTS

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
CAMPUS: DAVIS

	Project Title: Voorhies Hall Seismic Corrections		**Account Number:** Campus Reference 953620		Asset No.	CCCI: 8014 EPI: Cost Indexes	
A	**FUNDING SCHEDULE**	Prefunded					
	Totals (000's)	(2019-20)	(2020-21)	(2021-22)	(2022-23)		
	P $1,400 W $2,000 C $20,800		P $1,400 W $2,000 C $20,800				
	Total Project $24,200		$24,200				
B	**FUNDING REFERENCES**						
		Column (1)	Column (2)	Column (3)	Total All Sources		
	Account No.						
	Source						
C	**COSTS**					%	
0	Site Clearance				$530,000	2.2%	
1	Construction				$16,100,000	66.5%	
2	Exterior Utilities				$880,000	3.6%	
4	Site Development				$530,000	2.2%	
5	Fees				$2,500,000	10.3%	
6	A&E/PP&C				$990,000	4.1%	
7	Surveys, Tests, Plans & Specifications				$530,000	2.2%	
8	Special Items				$870,000	3.6%	
	SUBTOTAL				$22,930,000	94.8%	
9	Contingency 7.0%				$1,270,000	5.2%	
	TOTAL P_W_C				$24,200,000	100.0%	
3	Group 2 & 3 Equipment						
	TOTAL PROJECT				$24,200,000		
	Available Funding						
	Available Surplus/(Deficit)						
D	**FINANCING**						
	State Funds (AB-94) $24,200,000						
	TOTAL $24,200,000						
E	**STATUS OF PROJECT**						
	Project Planning Guide						
	Name: Jim Carroll Title: AVC & University Architect Prepared By: A.Timm		Signature: Leslie Carbahal Name: Leslie Carbahal Title: Director of Capital Planning Approved for Campus, Date:		Budget No. Issue Date Revised Revised	1 12/12/19	
	Program: Fiscal: Cost:		Signature:_____ Title: Approved AVP_PPC, Date:				

Page 1 of 2

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA

CAMPUS: DAVIS

Project Title:	Account Number:		CCCI: 8014
Voorhies Hall Seismic Corrections	Campus Reference 953620	Asset No.	EPI:
			Cost Indexes

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources
ASF Per PPG	ASF	ASF	ASF	ASF
ASF Current	ASF	ASF	ASF	28,205 ASF
OGSF	OGSF	OGSF	OGSF	55,279 OGSF
Ratio (ASF Current / OGSF)	to 1.00	to 1.00	to 1.00	0.51 to 1.00
Construction Cost Per ASF	/ASF	/ASF	/ASF	$570.82 /ASF
Construction Cost Per OGSF	/OGSF	/OGSF	/OGSF	$291.25 /OGSF
Total PWC Cost Per ASF	/ASF	/ASF	/ASF	$858.00 /ASF
Total PWC Cost Per OGSF	/OGSF	/OGSF	/OGSF	$437.78 /OGSF
Grp. 2 & 3 Equip Cost / ASF	/ASF	/ASF	/ASF	/ASF

G CONSTRUCTION COST ANALYSIS

H Notes:

Sub 8 Items:	
Environmental / EIR Services	160,000
As-Built Survey	30,000
Value Engineering / Constructibility Review	130,000
Agency Review (DSA & Fire Marshall)	95,000
Haz. Mat. Surveys & Testing	130,000
Commissioning	50,000
Independent Structural / Seismic Review	50,000
Archeological Monitoring	95,000
Specialty Inspection - Code Compliance	70,000
Special Consultants (Historic Building, Arborist, WP)	60,000
Subtotal	**870,000**
Interest During Construction	
Total Sub 8	-

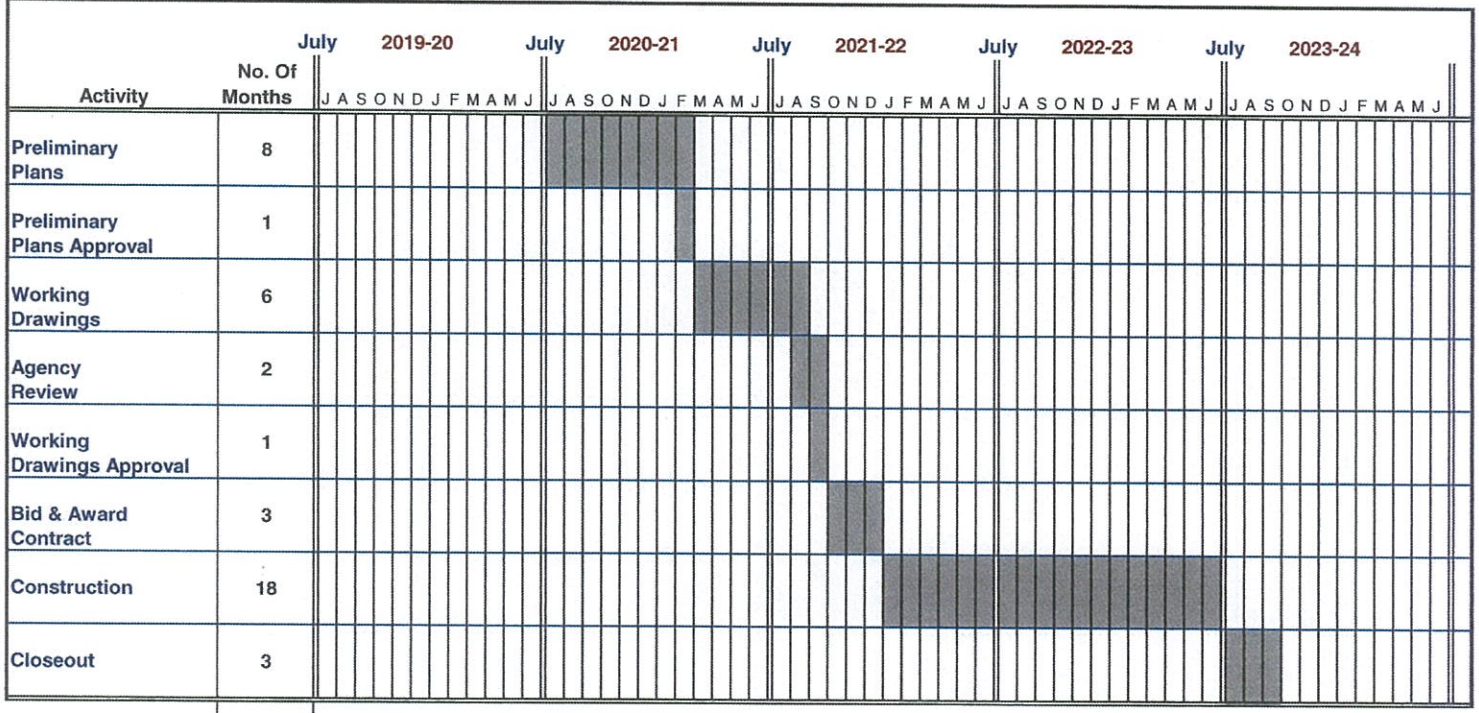
Budget No.	1
Issue Date	12/12/19
Revised	
Revised	

Prepared By: A.Timm

PROJECT SCHEDULE

UNIVERSITY OF CALIFORNIA, DAVIS

Project Title: Voorhies Hall Seismic Corrections
Project No. - 9536200



Activity	No. Of Months
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Total Months	39.0

NOTE:

Approved By: Leslie Carbahal
Leslie Carbahal
Director of Capital Planning

Date: 13 Dec. 2019

12/13/2019

Environmental Impact Classification

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division *Davis* **Project Account** 953620

Project Title Voorhies Hall Seismic and Critical Deferred Maintenance Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970** - When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: §

☐ **II. CATEGORICALLY EXEMPT** - This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

____	Class 1: Existing Facilities	____	Class 17: Open Space Contracts or Easements
____	Class 2: Replacement or Reconstruction	____	Class 23: Normal Operation of Facilities for Public Gatherings
____	Class 3: New Construction or Small Structures	____	Class 25: Transfer of Land: Natural Conditions/Historical Resources
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____	Class 11: Accessory Structures	____	Class 32: In-Fill Development Projects
____	Class 13: Acquisition for Conservation	____	Class 33: Small Habitat Restoration Projects
____	Class 16: Transfer of Land Ownership for Parks	____	Other:

☐ **III. INITIAL STUDY** - This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152):

☒ **IV. ENVIRONMENTAL IMPACT REPORT (EIR)** - It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☒ Programmatic ☐ Stand-Alone (Project-Specific) UC Davis 2018 Long Range Development Plan EIR (SCH# 2017012008)

Additional project analysis:

☐ None/Findings Only ☒ Addendum ☐ Subsequent ☐ Supplement to EIR:

PROJECT DESCRIPTION -

UC Davis will complete structural seismic safety corrections to Voorhies Hall located in the central campus. The project may include seismic corrections (exterior shear walls, foundation reinforcing, tie beam strengthening), critical deferred maintenance (elevators, and electrical distribution panels), code improvements (Entry doors, elevator, restrooms on 2nd and 3rd floor, drinking fountains, door hardware, signage), support work (removal of chiller and cooling towers), and other potential building upgrades (landscaping and new pathway, development of entry lobby).

The project is subject to the California Environmental Quality Act (CEQA). Voorhies Hall is over 50 years old. Therefore, a review the Hall's historic significance will be required prior to the CEQA determination. If it is found that the renovation of the building effects historic resources, the CEQA process could extend to 9-10 months. It is anticipated the project will qualify as an addendum to the 2018 LRDP EIR. Prior to project approval, a CEQA determination will be made and documentation will be completed. Applicable mitigation measures from the 2018 Long Range Development Plan EIR will be implemented with construction of the project.

V. Does this project conform to the approved LRDP? ☒YES ☐NO ☐NA *[If NO or NA, include explanation in Project Description above]*

VI. Heather Davis — Prepared by Heather Davis — 12/12/19 Date — Matt Dulcich — Local Approval by Matt Dulcich — 12/12/19 Date

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification

Signed — 12/23/2019 Date

FORM DATE 9/2016 (UCOP Form EIC)

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Davis - Young Hall Seismic Corrections	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$23,800	PWC	$23,800

Young Hall Seismic Corrections - $23,800,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections to Young Hall, a 93,000 gross-square-foot building with a Seismic Performance Rating (SPR) of VI. Upon completion of structural repairs, the SPR would be upgraded to IV. Mandatory code corrections triggered by the structural work would potentially include, but are not limited to, accessibility and egress upgrades and fire/life safety improvements. Total project costs are estimated at $23,800,000, including Preliminary Plans ($1,400,000), Working Drawings ($2,000,000), and Construction ($20,400,000). The construction amount includes $17,660,000 for the construction contract, $1,230,000 for contingency, and $1,510,000 for architectural and engineering services. Preliminary Plans are scheduled to begin in July 2020 and complete in February 2021. Working Drawings are scheduled to begin in March 2021 and complete in August 2021. Construction is scheduled to begin in January 2022 and complete in June 2023.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**8014**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Carey Barker	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

UCDAVIS
UNIVERSITY OF CALIFORNIA

Project Planning Guide

for

Young Hall Seismic Corrections

Project Account #953670

January 2020

CAMPUS APPROVAL

Prepared by:

Leslie Carbahal

Leslie Carbahal, Director 01/07/2020
Capital Planning
Design and Construction Management

Approved By:

JCarroll 1/8/2020

Jim Carroll, Associate Vice Chancellor and
University Architect
Design and Construction Management

University of California, Davis
Young Hall Seismic Corrections
Project Number 953670
January 2019

Table of Contents

Executive Summary

The University of California, Davis proposes to provide seismic corrections and high priority deferred maintenance to Young Hall. Young Hall was constructed in two phases, in 1940 and 1961; the buildings were designed to act integrally in response to earthquakes and have received a Seismic Performance Rating (SPR) of VI. Seismic deficiencies exist in the 1961 metal deck roof diaphragm, the out-of-plane wall anchorage, and diaphragm ties and collectors between the 1940 and the 1961 buildings that are inadequate. Significant structural damage is anticipated in the event of a moderate to large earthquake. Mandatory code corrections triggered by the structural work would potentially include but are not limited to accessibility and egress upgrades and fire/life safety improvements. Upon completion of the work, the SPR of Building 1 and Building 2 would be upgraded to IV.

The approximately 93,000 gross-square-foot (gsf) Young Hall, comprising three-stories and a basement, has not been structurally upgraded or significantly renovated since it was built in 1940 and received an addition in 1961. The building is occupied by two departments in the College of Letters and Sciences. Space types currently located in the facility include research laboratories, academic, administrative, and research offices, animal quarters, and general assignment classroom space.

The scope of the seismic work is an interior and exterior retrofit strategy that adds new metal deck roof over the existing deck, strengthens connections between metal deck roof and exterior walls, and adds fiber reinforced polymer (FRP) collector strips to tie the 1940 and 1961 slabs together. Related repairs and restoration scope would include reconfiguration of walls; modifications to building systems; and replacement of ceilings, lighting, and finishes in areas impacted by the work. Exterior restoration will address building landscape and access disrupted by the seismic correction work. Deferred maintenance work addresses electrical distribution, elevators, deficiencies in the building's heating and cooling systems, and code triggered improvements include upgrades to the fire safety systems as well as entry doors, restrooms, drinking fountains, door hardware and signage, and exterior path of travel.

Construction will be phased and timed to allow for as much continued occupancy as possible during construction. In order to minimize impacts to building occupants to the extent possible, the project will explore options for weekend, off-hour, and summer work, particularly for utility shutdowns. If necessary, a small portion of the building's occupants would be relocated for the full construction window and rotating additional internal relocations would be necessary to support the repairs.

Problem Statement

Young Hall is home to two departments in the College of Letters and Sciences as well as general assignment classrooms. Uses within the departmentally-controlled spaces include academic,

administrative, and research offices, research laboratories, and animal housing. Young Hall includes five general assignment classrooms providing 517 seats.

The Department of Psychology is the primary occupant of Young Hall. Psychology supports approximately 2,100 undergraduate majors with space in Young Hall as well as smaller footprints in the proximate Social Sciences and Humanities Building and off-campus leased space. Psychology occupies approximately 29,500 assignable-square-feet (asf) in the basement, first, and second floors of the building. In addition to departmentally-controlled classrooms, offices, and research space, approximately 3,600 asf of this space is dedicated to animal quarters and associated support space.

The Department of Anthropology supports approximately 200 undergraduate majors with space in Young Hall as well as a smaller footprint in the proximate Social Sciences and Humanities Building. Anthropology occupies approximately 18,700 asf across all floors of Young Hall, including the basement. Space types occupied by Anthropology include academic and administrative offices, seminar rooms, and laboratories.

Young Hall

Young Hall is a three-story plus basement multi-structure facility constructed in two phases, with initial construction occurring in 1940 and expansion in 1961. The northern half was constructed in 1940 and consists of a single two-story and three one-story buildings. The southern half was constructed in 1961 and consists of a two- and three-story building and canopy (see Figure 1). The buildings are all connected and designed to act integrally in response to earthquakes. Young Hall has a SPR of VI.

Young Hall is located on the core UC Davis campus, with the Social Sciences and Humanities Building immediately to the north, North Hall and Dutton Hall to the south, the campus border at A Street to the east, and the Memorial Union to the west across East Quad. The facility accommodates a variety of uses including academic, research, and administrative office, research laboratories and associated support, animal housing, and instruction. There are no plans for major relocations or changes of use associated with the building.

Figure 1. Young Hall Building Structures

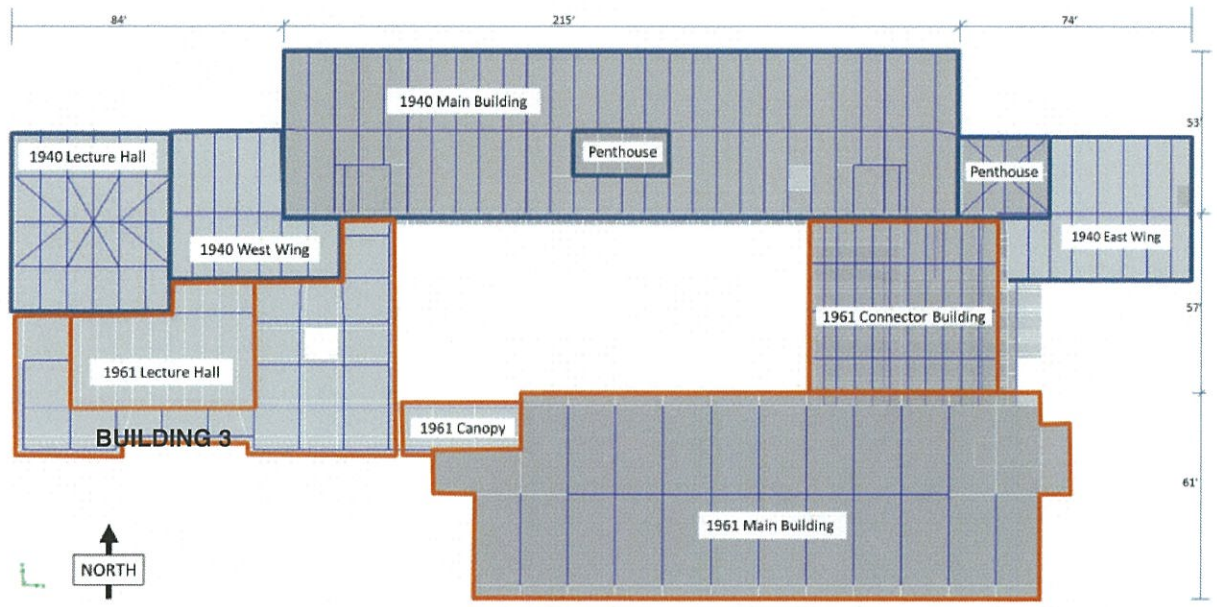


Figure 1 Plan view - Young Hall

The main 1940 building is two stories tall with four inch thick reinforced concrete floor slabs over concrete joists and girders that span to interior concrete columns and exterior walls. Foundations consist of spread footings and continuous wall footings. A small penthouse with reinforced concrete walls is present on the main building roof. The main building is rectangular in plan. The first floor slab extends out on the east and west elevation to form the roof of the adjacent one-story buildings. These buildings (east and west wings) are of similar construction to the main building. There is a small penthouse above the east wing. The west wing includes an auditorium–style lecture hall with a raised roof. Horizontal brace elements make up the roof diaphragm. Wide flange steel columns are cast within the exterior reinforced concrete walls which support the trusses.

The main and connector buildings constructed in 1961 are of integral construction. The main building is three stories tall with a basement level and is rectangular in plan. The two-story connector building has a partial basement level. Floors are six inch concrete slabs supported by concrete beams and columns. The roof is 24-gague, vermiculite-filled steel deck supported by steel joists and wide flange steel girders.

Longitudinal (east-west) lateral resistance is provided by concrete core walls surrounding the stairs and elevator at each end of the main building. The main building's north and south walls have concrete columns with deep spandrels and will behave like moment resisting frames. The south

wall has precast, pre-stressed beams that sit atop cast-in-place concrete beams at the first, second, and third floors. The precast beam is doweled into the concrete column and welded to a steel embedded angle in the slab. The remaining spandrels on the north and couth walls are cast-in-place concrete. Concrete shear walls on the east and west elevation provide lateral resistance in the transverse (north-south) direction. All columns and walls are supported on 20-inch diameter belled piers.

The connector slab's northern edge is doweled to the 1940 building's floors along the interface. The metal deck roof is also anchored to the 1940 building. There are horizontal offsets between columns, walls, and spandrels on the connector's east and west elevations.

The connector is largely reliant upon the main building and the 1940 building for its lateral resistance. There are shear walls and spandrels on its east elevation that provide some lateral restraint, but these are offset at the second floor and the walls do not continue to the foundation level.

Seismic Deficiencies

A structural analysis has determined that Young Hall does not have adequate seismic resistance to comply with the UC Seismic Safety Policy. Young Hall has weak metal deck roof diaphragms that do not have the capacity to provide adequate performance. In addition, anchorage from the exterior walls to these roof diaphragms is inadequate and can lead to further damage and potential local collapse of these roofs. Further, Young Hall was constructed in two phases with the intent that the structures act integrally in response to earthquakes. The connection between the 1961 connector building and the 1940 building is inadequate. This connection is vital to provide continuity for the structures and maintain the original lateral load path. For these reasons, Young Hall is a SPR of VI.

Fire/Life Safety and Accessibility Deficiencies

The building does not comply with current accessibility codes under the Americans with Disabilities Act or the California Administrative Code. Modifications are needed to provide code-compliant entry doors, elevators, restrooms, drinking fountains, door hardware, and signage. There are also major deficiencies to the building's fire alarm and fire sprinkler systems.

Deferred Maintenance

A Facility Condition Assessment (FCA) was completed in April 2018 and has been catalogued in the Integrated Capital Asset Management Program (ICAMP). The assessment provides a valuation of the building's deferred maintenance needs based on actual asset conditions and allows the campus to effectively prioritize projects and manage risk. Critical deferred maintenance elements identified as highest priority in the FCA include replacement and/or upgrades to motor control centers, electrical distribution panels, and electrical panels located on all floors of the building. Elevator upgrades and/or replacement is also identified as a high priority deferred maintenance need and there are also deficiencies in the building's exhaust, cooling, and heating hot water systems.

Seismic Corrections, Code Upgrades, and Deferred Maintenance (State-funded)
The proposed project would provide seismic corrections and address critical deferred maintenance in Young Hall. Young Hall is comprised of a number of buildings constructed in phases and designed to act integrally in response to earthquakes. The project components described in this section reflect the most critical facility needs for Young Hall as identified during project planning and preliminary engineering studies. The exact seismic solution will be the subject of further assessment during design and limited by projected construction market conditions at the time of bid. Upon completion of the work, the seismic rating would be upgraded to a seismic performance rating of IV.

Seismic Corrections

- Add metal decking and wall ties to the third floor roof and the two-story east section of roof.
- Add new FRP strapping to the second floor slabs at the interface between the 1940 and 1961 buildings.
- Interior and exterior work as triggered by areas disrupted by seismic corrections: landscape, rooftop exhaust units, waterproofing, painting.

Deferred Maintenance

- Replace and/or upgrade electrical distribution panels;
- Replace and/or upgrade approximately twenty-one electrical panels located on all floors of the building;
- Replace and/or upgrade elevators;
- Replace exterior light fixtures at covered walkway entries;
- Replace and/or upgrade HVAC system, including replacement variable frequency drive, exhaust fan control panel, and air handling unit;
- Replace motor control center; and
- Project will address deficiencies in the building's hot water system during this disruption, replacing hot water pumps, steam radiators, unit heaters, and heat exchangers.

Code Upgrades

- Access upgrades to ensure code compliant access (entry doors, elevators, drinking fountains, door hardware, and signage) and restrooms; and
- Fire alarm and sprinkler upgrades.

Program Improvements (Non-Stated Funded)
The mandatory seismic correction and code-triggered upgrade work may provide an opportunity to make program improvements in Young Hall. The campus is evaluating program improvements to select areas of the building, which may or may not be directly impacted by the seismic work. Potential additional improvement under consideration are building-specific but could include reconfiguration of walls to improve space utilization and functionality; modifications to the building systems; and replacement of ceilings, lighting, and finishes not impacted by seismic or

deferred maintenance work. A cost-benefit analysis of potential additional improvements will be conducted during the preliminary planning phase of the project and any non-State funded scope and budget increases recommended to be included in the project will be requested at the time of budget and design approval.

Space Impacts

It is anticipated that the building will remain occupied during construction. The seismic work will require vacating local portions of the building. Challenges anticipated for building occupants include relocations mandated by the work, wayfinding challenges as a result of perimeter construction, bike and vehicle parking displacement, and temporary restroom, utility and elevator shutdowns. Construction noise may also impact building occupants and the project will explore options to minimize disruption.

Construction will be phased to allow for as much continued occupancy as possible during construction. A small portion of the building's occupants in office and research areas, including a portion of the building used for animal housing, would be relocated for the full construction window and rotating additional internal relocations would be necessary to support the repairs. Campus Space Planning will work with the building occupants to provide temporary relocation space and to coordinate the internal relocations for those displaced by construction. Work would be timed to minimize the impacts of construction to building occupants.

No impacts to usable building square footage or program space or a change in use are anticipated to result from this project.

Cost Basis and Funding Plan

The campus has completed general pre-design studies and cost analyses for this project. A Tier 2 evaluation as well as some additional studies have been completed in order to assess the seismic condition of Young Hall.

Deferred maintenance costs are based on campus estimates to complete the work as a component of the Young Hall Seismic Corrections project and may not correspond with the opportunity costs identified in ICAMP.

The project will be funded by $23.8 million in external financing supported by State General Funds (California Education Code Sections 92495 et seq.). Any increase in budget for program improvements scope identified during preliminary planning will be funded by non-State resources.

Sustainability

The project will comply with the UC Sustainable Practices policy. As required by the policy, the project will adopt energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints, defined project scope, and regulatory and programmatic requirements.

Relationship to University Mission and Objectives

The project supports the instruction and research mission of the University of California by improving the seismic safety of facilities for teaching and research in a campus academic building.

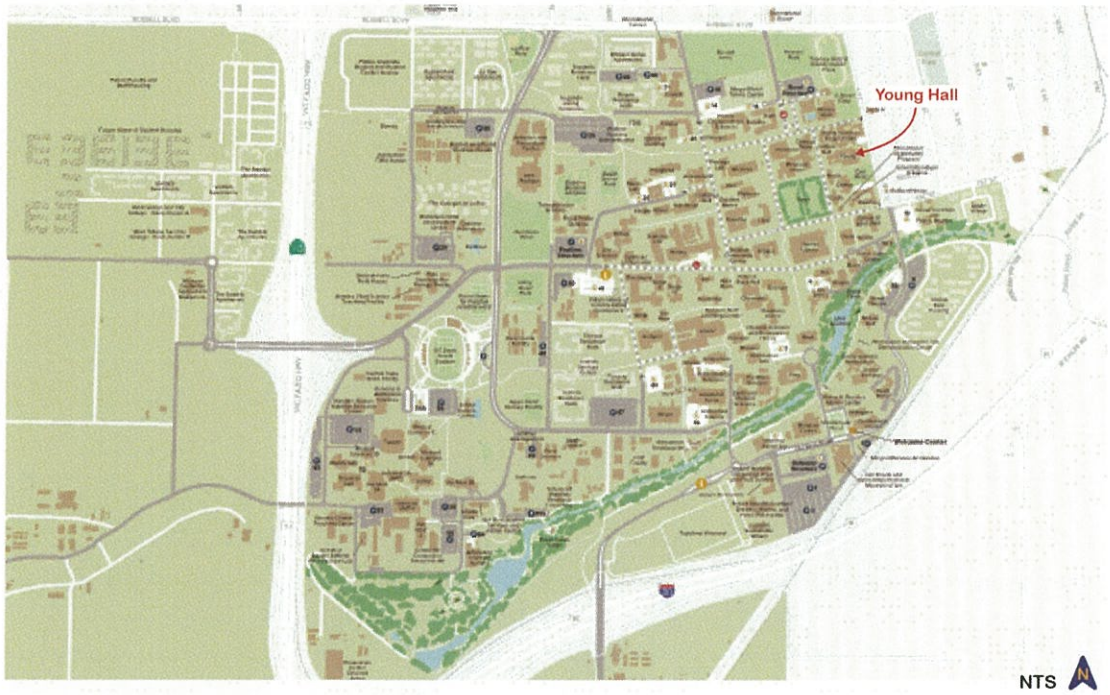
Alternatives

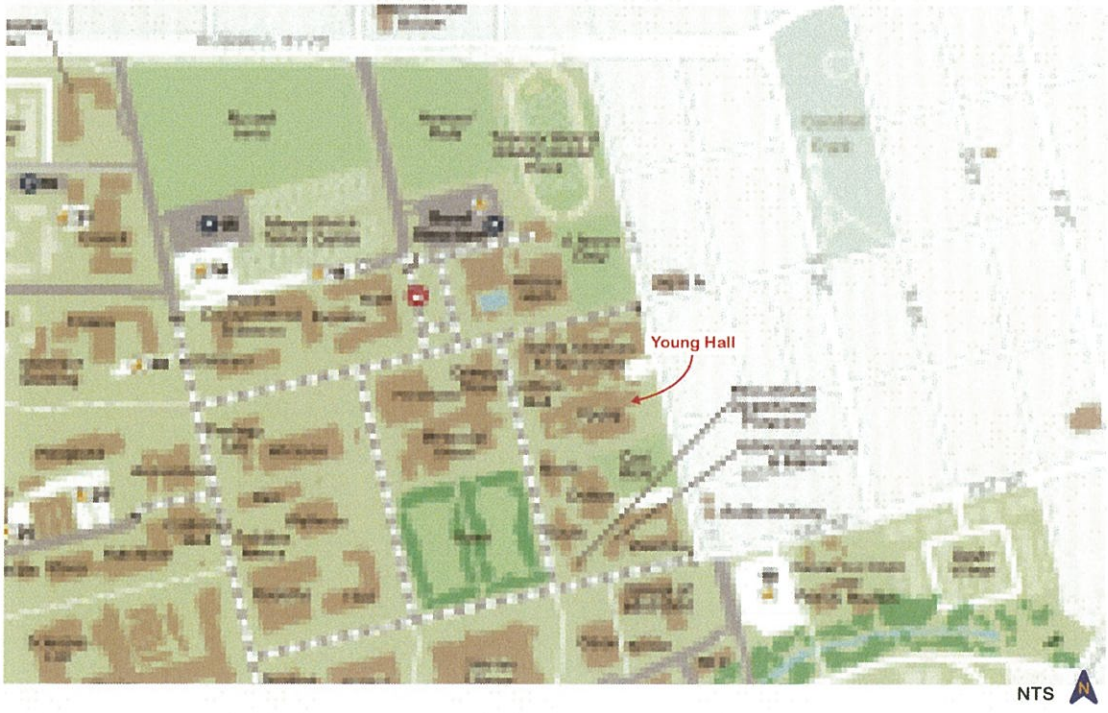
Seismic correction of Young Hall is the best option to bring the building into compliance with the UC Seismic Safety Policy. The facility is fully-occupied by active academic and administrative programs, research, and instruction in direct support of fulfilling the University's mission. The Davis campus is generally space constrained and does not have vacant space resources that would allow for the permanent relocation of all building occupants without constructing replacement space. Demolition and replacement is also not a viable alternative; the work proposed in this project represents approximately fifteen percent of the replacement cost of the building, which generally continues to function well for the uses it supports.

The project proposes to renovate Young Hall to a SPR of IV in compliance with the UC Seismic Safety Policy. The campus does not have information about the incremental cost associated with upgrading the building to a rating of III beyond the anticipated minimal acceptable performance rating of IV.

Project Location Map

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
YOUNG HALL SEISMIC CORRECTIONS
PROJECT NO: 953670





Site Plan

UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA
YOUNG HALL SEISMIC CORRECTIONS
PROJECT NO: 953670

NTS

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
CAMPUS: DAVIS

	Project Title: Young Hall Seismic Corrections		**Account Number:** Campus Reference 953670		Asset No.	CCCI: 8014 EPI: Cost Indexes
A	**FUNDING SCHEDULE**	Prefunded				
	Totals (000's)	(2019-20)	(2020-21)	(2021-22)	(2022-23)	
	P $1,400 W $2,000 C $20,400		P $1,400 W $2,000 C $20,400			
	Total Project $23,800		$23,800			
B	**FUNDING REFERENCES**					
		Column (1)	Column (2)	Column (3)	Total All Sources	
	Account No.					
	Source					
C	**COSTS**					%
0	Site Clearance				$340,000	1.4%
1	Construction				$17,000,000	71.4%
2	Exterior Utilities				$170,000	0.7%
4	Site Development				$150,000	0.6%
5	Fees				$2,500,000	10.5%
6	A&E/PP&C				$1,010,000	4.2%
7	Surveys, Tests, Plans & Specifications				$540,000	2.3%
8	Special Items				$860,000	3.6%
	SUBTOTAL				$22,570,000	94.8%
9	Contingency 7.0%				$1,230,000	5.2%
	TOTAL P_W_C				$23,800,000	100.0%
3	Group 2 & 3 Equipment					
	TOTAL PROJECT				$23,800,000	
	Available Funding					
	Available Surplus/(Deficit)					
D	**FINANCING**					
	State Funds(AB-94) $23,800,000					
	TOTAL $23,800,000					
E	**STATUS OF PROJECT**					
	Project Planning Guide					
					Budget No.	1
	Name: Jim Carroll Title: AVC & University Architect Prepared By: A.Timm		Signature: Leslie Carbahal Name: Leslie Carbahal Title: Director of Capital Planning Approved for Campus, Date: 1/7/20		Issue Date Revised Revised	1/3/20
	Program: Fiscal: Cost:		Signature:_____ Title: Approved AVP_PPC, Date:			

Capital Improvement Budget

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA

CAMPUS: DAVIS

Project Title:	Account Number:		CCCI: 8014
Young Hall Seismic Corrections	Campus Reference 953670	Asset No.	EPI:
			Cost Indexes

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources
ASF Per PPG	ASF	ASF	ASF	ASF
ASF Current	ASF	ASF	ASF	53,000 ASF
OGSF	OGSF	OGSF	OGSF	93,000 OGSF
Ratio (ASF Current / OGSF)	to 1.00	to 1.00	to 1.00	0.57 to 1.00
Construction Cost Per ASF	/ASF	/ASF	/ASF	$320.75 /ASF
Construction Cost Per OGSF	/OGSF	/OGSF	/OGSF	$182.80 /OGSF
Total PWC Cost Per ASF	/ASF	/ASF	/ASF	$449.06 /ASF
Total PWC Cost Per OGSF	/OGSF	/OGSF	/OGSF	$255.91 /OGSF
Grp. 2 & 3 Equip Cost / ASF	/ASF	/ASF	/ASF	/ASF

G CONSTRUCTION COST ANALYSIS

H Notes:

Sub 8 Items:	
Environmental / EIR Services	140,000
As-Built Survey	60,000
Value Engineering / Constructibility Review	160,000
Agency Review (DSA & Fire Marshall)	95,000
Haz. Mat. Surveys & Testing	140,000
Commissioning	80,000
Independent Structural / Seismic Review	50,000
Specialty Inspection - Code Compliance	75,000
Special Consultants (Historic Building, WP)	60,000
Subtotal	**860,000**
Interest During Construction	
Total Sub 8	-

Budget No.	1
Issue Date	1/3/20
Revised	
Revised	

Prepared By: A.Timm

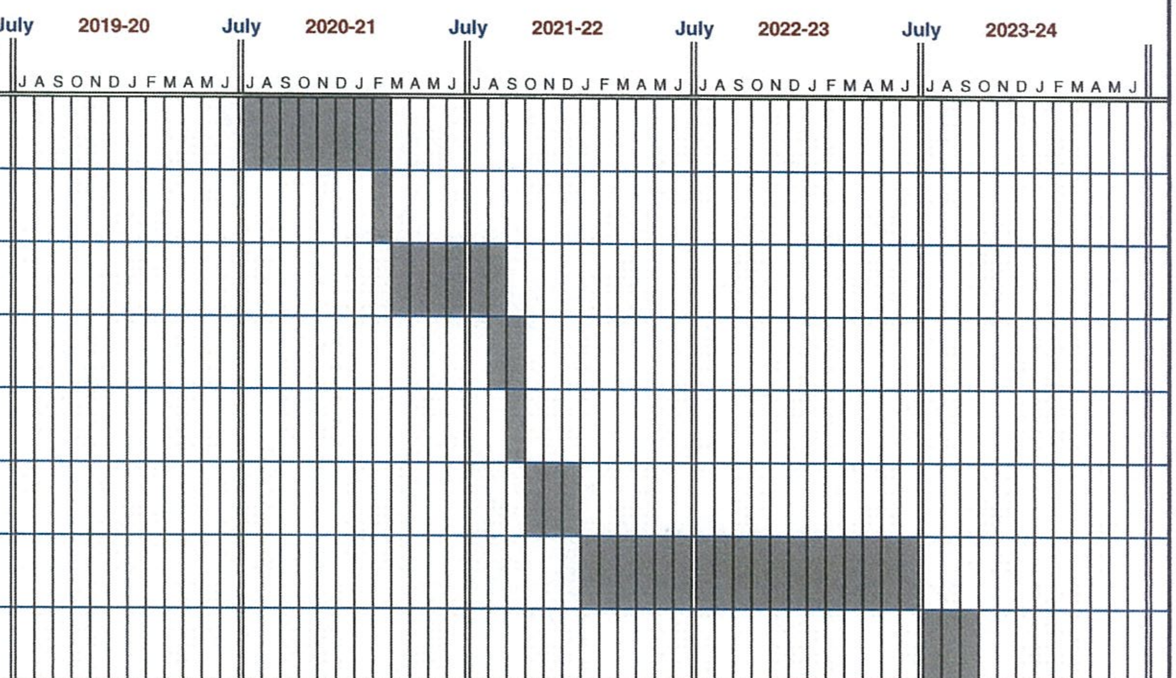
Schedule

PROJECT SCHEDULE

UNIVERSITY OF CALIFORNIA, DAVIS

Project Title: Young Hall Seismic Corrections
Project No. - 953670

Activity	No. Of Months
Preliminary Plans	8
Preliminary Plans Approval	1
Working Drawings	6
Agency Review	2
Working Drawings Approval	1
Bid & Award Contract	3
Construction	18
Closeout	3
Total Months	39.0



NOTE:

1/3/2019

Approved By: Leslie Carbahal
Leslie Carbahal
Director of Capital Planning

Date: 1/7/2020

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division *Davis* **Project Account** 953670

Project Title Young Hall Seismic Corrections and Critical Deferred Maintenance Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (**X**) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970 -** When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: § _____

☐ **II. CATEGORICALLY EXEMPT -** This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

_____	Class 1:	Existing Facilities	_____	Class 17:	Open Space Contracts or Easements
_____	Class 2:	Replacement or Reconstruction	_____	Class 23:	Normal Operation of Facilities for Public Gatherings
_____	Class 3:	New Construction or Small Structures	_____	Class 25:	Transfer of Land: Natural Conditions/Historical Resources
_____	Class 4:	Minor Alterations to Land	_____	Class 30:	Minor Actions: Prevent Hazardous Waste/Substances
_____	Class 6:	Information Collection	_____	Class 31:	Historical Resource Restoration/Rehabilitation
_____	Class 11:	Accessory Structures	_____	Class 32:	In-Fill Development Projects
_____	Class 13:	Acquisition for Conservation	_____	Class 33:	Small Habitat Restoration Projects
_____	Class 16:	Transfer of Land Ownership for Parks	_____	Other:	_____

☐ **III. INITIAL STUDY -** This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152): _____

☒ **IV. ENVIRONMENTAL IMPACT REPORT (EIR) -** It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☒ Programmatic ☐ Stand-Alone (Project-Specific) UC Davis 2018 Long Range Development Plan EIR (SC# 2017012008)

Additional project analysis:

☐ None/Findings Only ☒ Addendum ☐ Subsequent ☐ Supplement to EIR: _____

PROJECT DESCRIPTION -

UC Davis will complete structural seismic safety corrections to Young Hall located in the central campus. The scope of the seismic work is an interior and exterior retrofit strategy that adds new metal deck roof over the existing deck, strengthens connections between metal deck roof and exterior walls, and adds fiber reinforced Plymer (FRP) collector strips to tie the 1940 and 1961 slabs together. Related repairs and restoration scope would include reconfiguration of walls; modifications to building systems; and replacement of ceilings, lighting, and finishes in areas impacted by the work. Exterior restoration will address building landscape and access disrupted by the seismic correction work. Deferred maintenance work addresses electrical distribution, and code triggered improvements include upgrades to the fire alarm system as well as entry doors, restrooms, drinking fountains, door hardware and signage, and exterior path of travel.

The project is subject to the California Environmental Quality Act (CEQA). As Young Hall is over 50 years old, a review of its historical significance will be undertaken. It is anticipated that an addendum will prepared. Prior to document approval, a CEQA determination will be made and appropriate documentation completed.

V. Does this project conform to the approved LRDP? ☒YES ☐NO ☐NA *[If NO or NA, include explanation in Project Description above]*

VI. Heather Davis — Prepared by Heather Davis — 1/10/2020 — Date — Matt Dulcich — Local Approval by Matt Dulcich — 1/10/20 — Date

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification

Signed — Date 1/13/2020

FORM DATE 9/2016 (UCOP Form EIC)

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Irvine - Social Science Lecture Hall Seismic Improvements	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$2,261	DC	$3,577

Social Sciences and Humanities Building Seismic Corrections - $3,577,000 for Performance Criteria and Design-Build. The project includes seismic corrections to Social Science Lecture Hall to address critical seismic needs for this 9,280 gross-square-foot building, which was classified as a Seismic Performance Rating (SPR) of VI. Following the proposed retrofit the building will meet the requirements for a SPR of IV. Total project costs are estimated at $3,577,000, including Performance Criteria ($67,000), and Design-Build ($3,510,000). The design-build amount includes $2,549,000 for the construction contract, $153,000 for contingency, and $808,000 for architectural and engineering services. Performance Criteria phase is scheduled to begin in August 2020 and complete in October 2020. Design-Build is scheduled to begin in March 2021 and complete in September 2021.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**7404**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No
Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Carey Barker	1/13/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

PROJECT PLANNING GUIDE

SOCIAL SCIENCE LECTURE HALL SEISMIC IMPROVEMENTS
Project No. 990019

UNIVERSITY OF CALIFORNIA, IRVINE

December 2019

Approved:

CFO and Vice Chancellor Ronald Cortez
Division of Finance & Administration

SOCIAL SCIENCE LECTURE HALL SEISMIC IMPROVEMENTS
(Project No. 990019)

University of California, Irvine

Project Planning Guide

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PROJECT PLANNING GUIDE
Social Science Lecture Hall Seismic Improvements
Project No. 990019

A. EXECUTIVE SUMMARY

The University of California, Irvine, proposes a seismic improvement project for Social Science Lecture Hall (SSLH) to address critical seismic needs for this key campus building, which was classified as a Seismic Performance Rating (SPR) of VI in the recent survey of facilities. Following the proposed retrofit the building will meet the requirements for a SPR of IV.This project was selected based on its level of seismic deficiency as well as the high occupancy and use of the building.

SSLH is a freestanding 9,280 gross-square-foot (gsf) structure constructed in 1994 as part of a complex of Social Science structures. The one-story building houses a 400-seat lecture hall that is utilized for general assignment classroom space nearly continuously throughout each day. Renovations will need to take place during summer quarter to minimize the impact to class schedules.

The engineering evaluation identified major load path deficiencies, and the conceptual design for the retrofit consists of two main elements:

- Provide steel plates to connect the high roof into the low roof for shear transfer.
- Strengthen the diagonal members of the transfer truss on the northern portion of the high roof to allow transfer of seismic demands from the high roof to the low roof.

While the lecture hall is off-line for the seismic retrofit, the campus will take advantage of the time to complete interior upgrades identified as part of an ongoing Classroom Enhancement program to be funded by non-State sources.

B. BACKGROUND AND STATEMENT OF NEED

Built in 1994, the Social Science Lecture Hall (SSLH), which totals 9,280 gsf (6,458 assignable-square-feet), was constructed as a part of the Social Science Plaza Buildings. This 400 seat lecture hall is one of only four similar sized classrooms on campus and is scheduled for classes an average of 54 hours/week. The single-story building consists of a curved high roof in the center of the building and flat sections of low roof at the ends and corners of the building. The gravity system consists of bare metal deck spanning to steel beams and trusses which are supported by concrete masonry (CMU) bearing walls and concrete columns. The structure is supported by reinforced concrete strip footings under the walls and columns.

This structure was assigned a SPR of VI during the Tier 1 assessment process. The following structural elements were found to be non-compliant:

- There is a load path deficiency present for seismic transfer between the low and high sections of the roof.
- The out-of-plane wall anchorage is overstressed
- The diaphragms are not adequately connected to the shear walls at points of discontinuity.

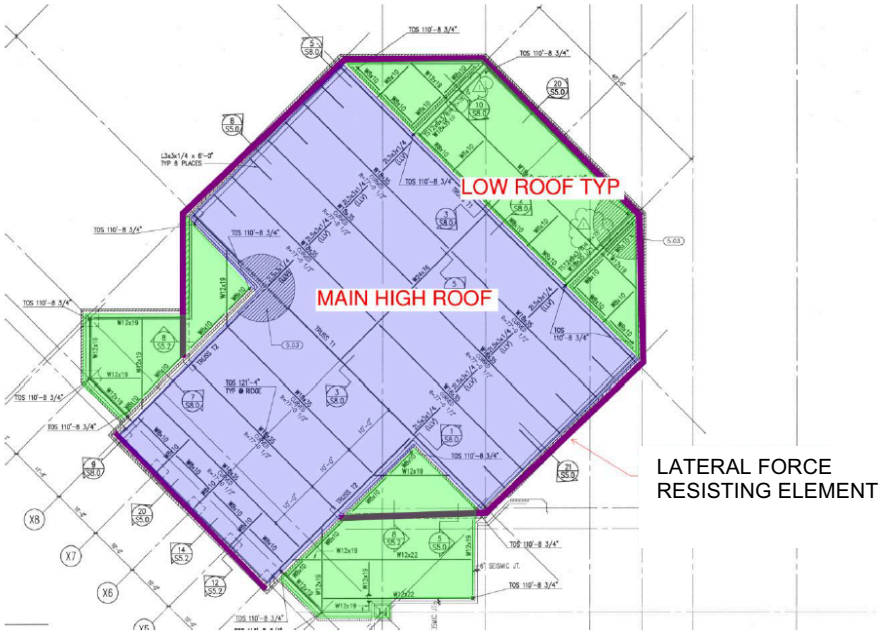


Figure 1: Social Science Lecture Hall Plan

Based on the results of the Tier 1 evaluation, an independent Tier 2 static analysis was undertaken to investigate the deficiencies that were identified.

The deficiency associated with the seismic load path and the related deficiency regarding the diaphragm to wall attachment for in-plane shear transfer was confirmed.

C. PROJECT DESCRIPTION

<u>Seismic Upgrade (State funded)</u>

To improve the building performance to a SPR of IV, the following conceptual design has been proposed:

- Provide steel plates to connect the high roof into the low roof shear transfer.

- Strengthen the diagonals at the trusses such that they act as compression members, allowing shear transfer through the diagonals where the tress interface between the low and high roofs.

The deficiency associated with the out-of-plane anchorage was mitigated through analysis. All of the structural CMU walls have adequate anchorage and anchorage diaphragm development, and no retrofit is required to address this initial area of concern.

Accessibility and Life Safety Improvements (State-funded)

The project will also address required accessibility and life safety improvements that were identified in a Facilities Condition Assessment report completed for the building in 2018. These include:

- Install / replace power door operators at exterior doors
- Replace panic door hardware
- Install card readers at exterior doors to allow remote lockdown of lecture halls

Classroom Enhancements (non-State funded)

The seismic renovations will require access from the interior of the lecture hall to complete the repairs to the structure without damaging the existing roof membrane. Work will be scheduled during the summer quarter, and classes will not be scheduled during this time. To take advantage of the vacant lecture hall as well as the economy of scale of a larger project, the campus is combining work from an ongoing Classroom Enhancement program, supported by campus funds, within this project. Proposed work includes:

- Replace interior finishes and fixtures
- Replace/add furnishings and equipment
- Upgrade classroom technology and controls

D. Cost Basis, Funding Plan, and Sustainability

The campus has completed a Tier 2 seismic analysis, a Facility Condition Assessment, and an initial cost analysis by an external consultant. Project costs will be further refined during detailed programming.

The proposed project will be funded by $2,261,000 in external financing supported by State General Funds (California Education Code Sections 92495 et seq.) and campus funds ($1,316,000).

The project will comply with the UC Policy on Sustainable Practices. As required by this policy, the project will adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

E. Project Implementation

The project will be implemented using a design-build delivery process. The campus will prepare an extensive bid package that outlines the detailed requirements for the project, including functional space requirements, design criteria for architecture, performance criteria for building systems, and site development and utility requirements. This package will be issued to prequalified design-build teams who will develop and submit preliminary plans and costs as part of the design-build competition.

The University has developed strategies for addressing both favorable and unfavorable market conditions to ensure the maximum amount of the project scope is built within available funds. Implementation of all project components will be subject to further assessment during detailed programming and design and limited by construction market conditions at the time of bid.

F. Relationship to University Mission and Objectives

The project supports the instruction and research mission of the University of California by providing seismically safe facilities for teaching and research.

G. Alternatives

UC Seismic Policy requires that the campus develop a plan for buildings so that no structures rated SPR of V or worse remain occupied beyond December 31, 2030. Social Science Lecture Hall supports an important teaching function on campus, and demolition of this structure was not considered for the following reasons:

- Other than the structural deficiency, the building is in relatively good condition based on a Facility Condition Assessment completed in 2018 with no significant deferred maintenance items.
- There are no existing alternative spaces to house the lecture hall function, and no replacement facilities are planned for new construction at this time.
- The cost of retrofit is significantly less than the cost of demolition and reconstruction of a new facility.

The UC Policy requires buildings to meet a minimum SPR of IV. Based on the evaluation of SSLH, a seismic upgrade to a SPR of III is feasible but significantly more invasive than the upgrade to a SPR of IV. Whereas the SPR IV upgrade mitigates serious deficiencies in the load path, the SPR III upgrade would augment structural elements that are currently capable of withstanding significant seismic demand. A SPR III upgrade would involve modifying the diaphragm to wall connection where the steel deck attaches to the ledger angle. This would involve removing the roofing at the perimeter of the building to add connections and strengthening steel beams in the diaphragm. While the incremental cost of improving the seismic rating to III is difficult to estimate, achieving this higher level would significantly increase the cost, expand the scope of non-structural finishes disturbed by the retrofit, and extend the already aggressive construction schedule beyond what could be completed within the summer quarter window of opportunity, resulting in unacceptable disruption to the lecture hall schedule and occupancy.

LOCATION PLAN

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
IRVINE
Campus

Project Name : Social Science Lecture Hall Seismic Improvements	**990018**		**CCCI:** 7404
			EPI: n/a
Project Title	**Campus Reference**	**Asset No.**	**Cost Indexes**

A. FUNDING SCHEDULE

	Totals	Prefunded	2019-20	2020-2021	2021-22	2022-23
D	$ 67,000			D $ 67,000		
C	$ 3,510,000			C $ 3,510,000		
E	$ -			E $ -		
Total:	$ 3,577,000			$ 3,577,000		

B. FUNDING REFERENCES

	Column (1)	(2)	(3)	(4) Total All Sources	
Account No.					
Source					

C. COST

			Campus Funded	State Funded	Total	%
0.	Site Clearance		$0	$0	$ -	0.0%
1.	Construction		$898,000	$1,651,000	$ 2,549,000	71.3%
2.	Exterior Utilities		$0	$0	$ -	0.0%
4.	Site Development		$0	$0	$ -	0.0%
5.	A&E/PP&C		$63,000	$116,000	$ 179,000	5.0%
6.	Campus Administration		$49,000	$91,000	$ 140,000	3.9%
7.	Surveys/Tests/Plans					
	& Specifications		$13,000	$25,000	$ 38,000	1.1%
8.	Special Items		$239,000	$279,000	$518,000	14.5%
	SUBTOTAL		**$ 1,262,000**	**$ 2,162,000**	**$3,424,000**	95.7%
9.	Contingency 6.0%		$54,000	$99,000	$153,000	4.3%
	TOTAL P-W-C		**$ 1,316,000**	**$ 2,261,000**	**$3,577,000**	100.0%
3.	Group 2&3 Equipment		$0	$0	$0	0.0%
	TOTAL PROJECT		**$ 1,316,000**	**$ 2,261,000**	**$ 3,577,000**	
	Available Funding					
	Anticipated Surplus (Deficit)				$ -	

D. FINANCING

State Funds (AB94)	$	2,261,000	
Campus Funds	$	1,316,000	
	$	**3,577,000**	

E. STATUS OF PROJECT:

Project Planning Guide

Campus	Name: Samara Larson		Signature: **Brian Pratt**	Budget No.	1
	Title: Pr. Ed. Facility Planner		Title: **Campus Architect**	Issue Date	12/06/19
	Prepared By:		Approved for Campus, Date:	Revised	
AVP-PPC	Program:	Fiscal:	Signature:	Revised	
			Title:	Revised	
	Cost		Approved for AVP-PPC, Date:	Revised	

/Volumes/UCI/Cap Planning/CP Volume/Capital Projects/Seismic Safety Policy Implementation (997152)/Humanities and SSLH Seismic Improvements/SSLH Seismic Improvements 990019 - bldg 212 CAAN 9223/[SSLH CIB Ver 1.4 jm.xlsx]CIB SHEET 1

Page 1 of 2

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
IRVINE
Campus

Project Name : Social Science Lecture Hall Seismic Improvement	990018		CCCI: 7404
			EPI: n/a
Project Title	Campus Reference	Asset No.	Cost Indexes

F. ANALYTICAL DATA

		Campus Funded	State Funded	Total
ASF - Proposed	ASF	6,458 ASF	6,458 ASF	6,458 ASF
ASF Current	ASF	ASF	ASF	ASF
OGSF - Proposed	OGSF	9,280 OGSF	9,280 OGSF	9,280 OGSF
Ratio (ASF Current/OGSF		0.70	0.70	0.70
Construction Cost per ASF	/ASF	$ 139.05 /ASF	$255.65 /ASF	$ 394.70 /ASF
Construction Cost per OGSF	/OGSF	$96.77 /OGSF	$177.91 /OGSF	$274.68 /OGSF
Total P-W-C Cost per ASF	/ASF	$203.78 /ASF	$350.11 /ASF	$553.89 /ASF
Total P-W-C Cost per OGSF	/OGSF	$141.81 /OGSF	$243.64 /OGSF	$ 385.45 /OGSF
Group 2&3 Equipment Cost per ASF	/ASF	$0.00 /ASF	$0.00 /ASF	$ - /ASF

G. CONSTRUCTION COST ANALYSIS

	Costs	Unit Costs $/ASF	Unit Costs $/OGSF	%	Remarks
Concrete & Structure					
Closing-In					
Finishing					
Group 1 Equipment					
a. SUBTOTAL-General Construction					
b. HVAC					
c. Plumbing					
d. Electrical					
e. Elevators					
f. Others					Identify:
TOTAL BUILDING					
COST ONLY				100.0%	
g. Additional Building Cost					Identify:
TOTAL BUILDING +					
ADDITIONAL COSTS					
h. Other Construction		Identify:			
I. Other Construction		Identify:			
TOTAL CONSTRUCTION					
COST		Same as Schedule C, Item 1 (line 24), Page 1			

H. NOTES:

Sub 8 Includes:

Acoustician	$	15,000	Interior Designer	$	20,000
Agency Review	$	15,000	Paleontologist/Tribal Monitor	$	-
Clinical consultant	$	-	Parking	$	15,000
Commission Building Systems	$	10,000	Peer Review: Civil, Architectural, and Waterproofing	$	10,000
Environmental : IS/MND and EP&S	$	-	Programming / Project DPP	$	300,000
Environmental Monitoring During Construction	$	2,000	Sampling (HAZMAT)	$	-
Facilities Management Utility Coordination / Shutdowns	$	20,000	Security Consultant	$	-
Geotechnical Report	$	30,000	Special Inspections: Architectural, Civil, Waterproofing	$	11,000
0	$	-	Topographic/As-Built Survey/CAD Base Sheets	$	20,000
Independent Seismic Review	$	30,000	Utility Infrastructure Coordination	$	10,000
Interest During Construction	$	-	Value Engineering/Constructability Review	$	10,000
			Wind Study	$	-
Subtotal Column "A":	**$**	**122,000**	**Subtotal Column "B":**	**$**	**396,000**
			Total	**$**	**518,000**

Budget No.	1
Issue Date	12/06/19
Revised	
Revised	
Revised	
Revised	

Prepared by: Samara Larson

Project Schedule

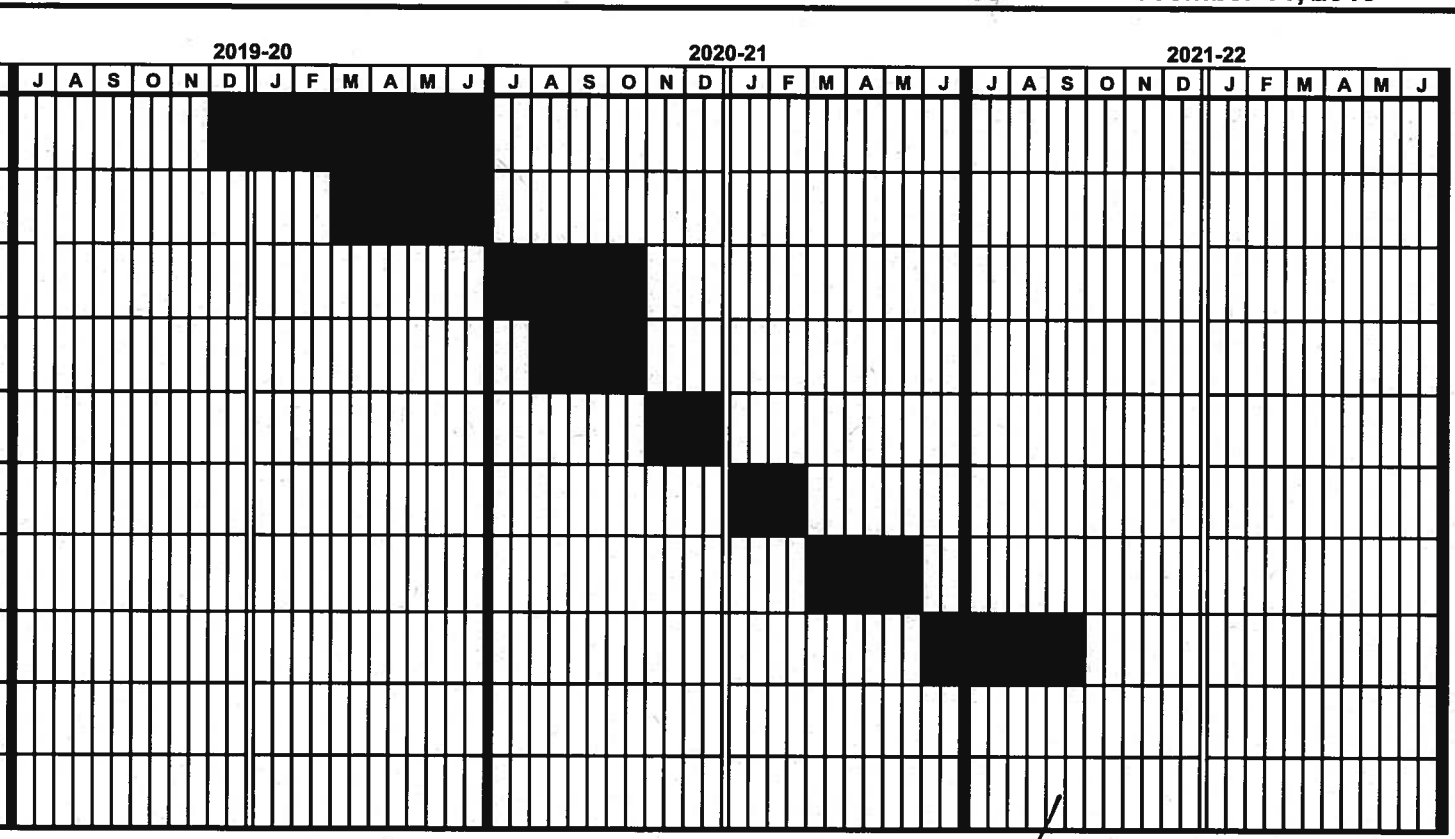
UNIVERSITY OF CALIFORNIA, IRVINE

Project Name: Social Science Lecture Hall Seismic Improvements

Project Number: 990019

DATE: December 11, 2019

ACTIVITY	No. of Months
Request / approval of State funding	7
RFQ for Planning/Programming	4
Design-Build Team Prequalification	4
Planning/Develop performance criteria	3
Bid / Proposal evaluation	2
Review proposal / award of contract	2
Design development / submittals	3
Construction	4
Cumulative Calendar Months	22



Approved:

Title: Brian Pratt, Associate Vice Chancellor
Design & Construction Services

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division Irvine **Project Account** 990019

Project Title Social Science Lecture Hall Seismic Improvements

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970** - When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: § *[Insert applicable CEQA Guidelines Section]*

☒ **II. CATEGORICALLY EXEMPT** - This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

X	Class 1:	Existing Facilities	____	Class 17: Open Space Contracts or Easements
____	Class 2:	Replacement or Reconstruction	____	Class 23: Normal Operation of Facilities for Public Gatherings
____	Class 3:	New Construction or Small Structures	____	Class 25: Transfer of Land: Natural Conditions/Historical Resources
____	Class 4:	Minor Alterations to Land	____	Class 30: Minor Actions: Prevent Hazardous Waste/Substances
____	Class 6:	Information Collection	____	Class 31: Historical Resource Restoration/Rehabilitation
____	Class 11:	Accessory Structures	____	Class 32: In-Fill Development Projects
____	Class 13:	Acquisition for Conservation	____	Class 33: Small Habitat Restoration Projects
____	Class 16:	Transfer of Land Ownership for Parks	____	Other: *[If other, identify which class under Section 15300]*

☐ **III. INITIAL STUDY** - This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152): *[Identify EIR from which Initial Study is tiered]*

☐ **IV. ENVIRONMENTAL IMPACT REPORT (EIR)** - It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☐ Programmatic ☐ Stand-Alone (Project-Specific) *[Identify EIR title]*

Additional project analysis:

☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR: *[Identify EIR from which document is tiered/based]*

PROJECT DESCRIPTION

Real estate transaction type: ☐Acquisition ☐Sale ☐Lease ☐Easement ☐License *[Include proposed use in project description below]*

The proposed project would renovate Social Sciences Lecture Hall (SSLH) to address critical seismic needs, which received a Seismic Performance Level rating of VI. SSLH is a freestanding structure (9,280 GSF) housing a 400-seat lecture hall that is utilized for general assignment classroom space nearly continuously throughout each day. To improve the building performance consistent with an expected SPL IV rating, a conceptual design is proposed to provide steel plates to connect the high roof into the low roof shear transfer as well as strengthen the diagonals at the trusses, allowing shear transfer through the diagonals where the tress interface between the low and high roofs. Improvements to the structure also includes classroom enhancements, with updates to interior fixtures, furnishings, and technology. Accessibility improvements will include updating panic door hardware and power door operators, and safety improvements will include the installation of card readers at exterior doors.

A Class 1 categorical exemption is applicable because the proposed project is the renovation of an existing building. No increase in the physical footprint would occur and expansion of use by faculty, staff, and students would be negligible to none. In accordance with Section 15300.2 of the CEQA Guidelines, there are no exceptions that would make the exemption inapplicable based on the project records.

V. Does this project conform to the approved LRDP? ☒YES ☐NO ☐NA *(If NO or NA, include explanation in Project Description above)*

VI. Carrie Metzgar 12/5/19 — Prepared by Carrie Metzgar — Date

Richard Demerjian 12/5/19 — Local Approved by Richard Demerjian — Date

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification ☐ Not Applicable

Signed — 12/6/2019 Date

FORM DATE 9/2016 (UCOP Form EIC)

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
San Diego - Revelle College Seismic Corrections (Mayer Hall & York Hall)	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$56,658	WC	$58,908

Revelle College Seismic Corrections (Mayer Hall & York Hall) - $56,658,000 for Working Drawings and Construction. Mayer Hall is a five-story structure, primarily made up of research and teaching laboratories for the Department of Physics, and has a Seismic Performance Rating (SPR) VI. York Hall houses primarily instructional laboratory space, general assignment classrooms, and lecture halls for the Division of Biological Sciences and Department of Chemistry and Biochemistry. York Hall is comprised of four connected structures in the shape of the letter 'E' (the west wing has a SPR of VI, and the north, south, and middle wings are SPR V). The project includes seismic corrections to Mayer and York Halls and both would be upgraded to SPR IV. As funds are available, high priority deferred maintenance would be addressed. Total project costs are estimated at $58,908,000, including Preliminary Plans ($2,250,000), Working Drawings ($4,500,000), and Construction ($52,158,000). The construction amount includes $43,585,000 for the construction contract, $3,130,000 for contingency, and $4,300,000 for architectural and engineering services as well as $1,143,000 for other construction costs. Preliminary Plans are scheduled to begin in January 2020 and complete in April 2020. Working Drawings are scheduled to begin in July 2020 and complete in November 2020. Construction is scheduled to begin in June 2021 and complete in November 2022.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**7674**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Colleen Connor	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

Project Planning Guide
UC San Diego

Revelle College Seismic Corrections (Mayer Hall & York Hall)
Project Number: 963460

2020-2021 Capital Improvement Program

December 2019

Approved: _____
Pradeep K. Khosla, Chancellor

UC San Diego
REVELLE COLLEGE SEISMIC CORRECTIONS (MAYER HALL & YORK HALL)
Project Planning Guide
December 2019

Table of Contents

Attachments:

CAPITAL IMPROVEMENT PROGRAM BUDGET
BUDGET DATA - GFF PROJECTS

UNIVERSITY OF CALIFORNIA
SAN DIEGO
Campus

Revelle College Seismic Corrections (Mayer Hall and York Hall)	963460	6352 / 6361	CCCI: 7674
			EPI:
Project Title	**Campus Reference**	**Asset No.**	**Cost Indexes**

A. FUNDING SCHEDULE Per C.I.P., dated

Totals	Prefunded	2020-21
$P 2,250	$P 2,250 CF	
W 4,500		W 4,500 SG
C 52,158		C 52,158 SG
58,908 (Tot. Project)	2,250	56,658

B. FUNDING REFERENCES

	(1)	(2)	(3)	(4)	Total
Account No.					963460
Source					

C. COSTS

		Mayer Hall	York Hall			Total	%
0.	Site Clearance	$ 375,000	$ 210,000			$ 585,000	1.0
1.	Building Construction	$ 29,000,000	$ 14,000,000			$ 43,000,000	73.0
2.	Exterior Utilities	$ -	$ -			-	
4.	Site Development	$ -	$ -			-	
5.	A&E Fees	$ 3,000,000	$ 1,300,000			$ 4,300,000	7.3
6.	Campus Administration	$ 1,400,000	$ 700,000			$ 2,100,000	3.6
7.	Surveys/Tests/Plans						
	& Specifications	$ 200,000	$ 200,000			$ 400,000	0.7
8.	Special Items	$ 4,825,000	$ 568,000			$ 5,393,000	9.2
	SUBTOTAL	$ 38,800,000	$ 16,978,000			$ 55,778,000	94.7
9.	Const Contingency 7.2%	$ 2,110,000	1,020,000			$ 3,130,000	5.3
	TOTAL P-W-C	$ 40,910,000	$ 17,998,000			$ 58,908,000	100.0
3.	Group 2&3 Equipment					-	
	TOTAL PROJECT	$ 40,910,000	$ 17,998,000			$ 58,908,000	
	Available Funding						
	Anticipated Surplus (Deficit)						

D. FUNDING SOURCE

Campus Funds	$	2,250,000
State General Funds Financing	$	56,658,000
TOTAL	$	58,908,000

E. STATUS OF PROJECT:

Project Approval

Campus	Name: Robin Tsuchida	Signature:	Budget No.	2	
	Title: Sr. Director of Project Management	Title: Eric C. Smith, PE, Associate Vice Chancellor	Issue Date	12/13/2019	
	Prepared by: Robert Northrop	Approved for Campus, Date:	Revised	1/6/2020	
AVP-PPC	Program:	Fiscal: Signature:	Revised		
		Title:	Revised		
	Cost:	Approved for AVP-PPC, Date:	Revised		

Form - CIB Budget Data 03/19
CPM Job # 5372
FM Job #

CAPITAL IMPROVEMENT PROGRAM BUDGET
BUDGET DATA - GFF PROJECTS

UNIVERSITY OF CALIFORNIA
SAN DIEGO
Campus

Revelle College Seismic Corrections (Mayer Hall and York Hall)	963460	6352 / 6361	CCCI: 7674
			EPI:
Project Title	**Campus Reference**	**Asset No.**	**Cost Indexes**

F. ANALYTICAL DATA

	Mayer Hall	York Hall		Total
ASF per PPG	58,000	67,000		125,000 ASF
ASF Current				ASF
OGSF	126,000	134,000		260,000 OGSF
Ratio (ASF Current/OGSF)	0.46 to 1.00	0.50 to 1.00	to 1.00	0.48 to 1.00
Bldg Construction Cost per ASF	$ 500.00 /ASF	$ 208.96 /ASF	$ - /ASF	$ 344.00 /ASF
Bldg Construction Cost per OGSF	$ 230.16 /OGSF	$ 104.48 /OGSF	$ - /OGSF	$ 165.38 /OGSF
Total P-W-C Cost per ASF	$ 705.34 /ASF	$ 268.63 /ASF	$ - /ASF	$ 471.26 /ASF
Total P-W-C Cost per OGSF	$ 324.68 /OGSF	$ 134.31 /OGSF	$ - /OGSF	$ 226.57 /OGSF
Gr. 2&3 Equip Cost per ASF	$ - /ASF	$ - /ASF	$ - /ASF	$ - /ASF

G. CONSTRUCTION COST ANALYSIS

H. NOTES: Line Item #8 Special Items

DPP & Predesign Study	175,000
APCD / Air Quality Testing / Permit Fees	35,000
Constructability Peer Reviews	175,000
Plan Check Fees	80,000
Hazardous Materials Consultant and Testing	70,000
Independent Seismic Review	250,000
Pre-Construction Services	350,000
LEED and Other Sustainability Fees	80,000
Special Design Consultant (Historical)	150,000
Existing Occupant Relocation Costs	4,028,000
Total	**$ 5,393,000**

Budget No.	2
Issue Date	12/13/2019
Revised	1/6/2020
Revised	
Revised	
Revised	

Prepared by: Robert Northrop

EXECUTIVE SUMMARY

UC San Diego proposes to provide seismic corrections to Mayer Hall, a 126,000 gross-square-foot concrete structure built in 1963 and York Hall, a 134,000 square-foot concrete structure built in 1966. Located adjacent to one another in the Revelle College neighborhood on the main campus, Mayer Hall and York Hall are essential resources for teaching and research at UC San Diego. Mayer Hall and the west wing of York Hall have a Seismic Performance Rating (SPR) of VI. Significant structural damage is anticipated in the event of a moderate to large earthquake.

Mayer Hall (126,000 gsf) serves as the center for physics study at UC San Diego, bringing together students and faculty to promote scientific collaboration, the sharing of resources, and the continued integration of instructional and research activities through hands-on learning and training in both research and teaching laboratories. York Hall (134,000 gsf) provides a considerable amount of undergraduate instructional laboratory space for the Division of Biological Sciences and the Department of Chemistry and Biochemistry, as well as general assignment classrooms and lecture halls.

Due to the age of these buildings, both have deferred maintenance needs; those with high priority may be addressed with any remaining funds once the seismic corrections are made. Upon completion of the proposed project, Mayer Hall and York Hall would be improved to SPR IV or better.

BACKGROUND AND PROBLEM STATEMENT

Mayer Hall is comprised of 34,600 assignable-square feet (asf) of research laboratories and 16,000 asf of research support space, academic offices, and 7,700 asf of undergraduate teaching laboratories for the Department of Physics. The undergraduate Physics' curriculum involves extensive and comprehensive laboratory classes, and many of the courses offered are part of the required course work for other undergraduate majors. For example, virtually all biology, engineering, chemistry, and earth science majors are required to complete at least one physics laboratory course; some of these majors require completion of two or more physics laboratory courses. Most of these classes take place in Mayer Hall.

York Hall houses approximately 50,000 asf of instructional laboratory space for the Division of Biological Sciences (Biology) and Department of Chemistry and Biochemistry (Chemistry), 10 general assignment classrooms and lecture halls totaling 9,200 asf, and 8,100 asf of research and research support space. Biology and Chemistry are among the top five majors at UC San Diego, with approximately 21 percent of undergraduates majoring in biology and 4.5 percent majoring in chemistry[1]. For those students not majoring in biology or chemistry, most undergraduate students are required to take at least one biology and one chemistry course sometime in their academic career because these departments have an extensive presence in the general education requirements of most majors offered at UC San Diego. Chemistry is the only non-impacted Science, Technology, Engineering, Math (STEM) major on campus and, as a result, the number of Chemistry majors is expected to increase at a pace that exceeds the overall growth projections. Combined, the Biology and Chemistry Departments provide instruction to more than 5,600 undergraduate students per year in the instructional laboratories housed in York Hall.

[1] *Data Source: https://ucpa.ucsd.edu/campus-profile*

Seismic Analysis – Mayer Hall

Mayer Hall is a five-story structure, with the lowest level partially built into grade, and consists of concrete one-way slabs spanning between concrete beams that are supported by concrete columns. The lateral system consists of concrete diaphragms spanning to concrete shear walls, with many of them being discontinuous. The foundation system consists of conventional continuous footings under walls and spread footings under columns. Mayer Hall is connected to Bonner Hall (building to the north) at multiple levels via an exterior breezeway / bridge. The bridge connections allow for lateral displacement along the axis of the bridge and restrained lateral displacement transverse to the bridge, except at Level 2 where the bridge is fully restrained from movement. Non-structural elements of interest on the exterior of the building include grouted stone panels that form the handrail system at the exterior balconies, as well as a precast concrete trellis that provides a mechanical screen at the roof.

In 2009, the Mayer Hall Addition and Renovation project was completed to provide much needed instructional laboratory space and offices for the Department of Physics. A Tier 1 seismic evaluation concluded that Mayer Hall Addition (93,000 gsf) has a Seismic Performance Rating of III and does not require seismic retrofit, therefore, the Addition is not part of the proposed project (see Attachment 4).

A Tier 2 seismic evaluation concluded that the original Mayer Hall building has a Seismic Performance Rating of VI. The analysis revealed that numerous shear walls in the building do not have adequate strength. Several existing columns that support discontinuous shear walls require strengthening for axial loads due to high overturning forces from shear walls above. Concrete diaphragms at Levels 2 and 3 in the area of the discontinuous walls are overstressed due to shear transfer from one wall to another. Collector elements at Levels 2 and 3 that tie the discontinuous walls to continuous walls in other portions of the building are also overstressed.

Seismic Analysis - York Hall

York Hall is comprised of four connected structures whose footprint is in the shape of the letter ‘E’, with an architecturally distinct open-air colonnade at Level 2 that forms a spine along the western façade facing Revelle Plaza and connects three wings. The north, south and middle wings of York Hall are four levels with Level 1 partially subgrade (see Attachment 5). The west wing (colonnade portion) of York Hall is SPR VI. The north, south, and middle wings are SPR V.

The west wing of York Hall is a 3-story structure with an open-air colonnade at Level 2 and concrete flat slabs at the roof, fourth and third levels. The original lateral system consisted of concrete diaphragms spanning to concrete and reinforced masonry shear walls on Levels 3 and 4, and cantilevered, flared concrete columns on Level 2, supported by grade beams spanning both directions. In 1993, a seismic retrofit was completed which added buttress shear walls to the east side of the building on Level 2 and strengthened shear wall boundary elements on concrete walls on Levels 3 and 4.

The Tier 2 analysis has shown that the added buttresses have adequate strength to resist the estimated seismic forces, although the connections to the original structure require strengthening. Additionally, a number of existing columns at the lower level (those directly below shear walls above) require strengthening for axial loads due to high overturning forces from discontinuous shear walls above. In the event of a moderate to large earthquake, significant structural damage is anticipated if the west wing is not corrected; the north, south, and middle wings which are connected to the west wing, would also likely sustain damage.

The north and south wings provide instructional laboratory space; two lecture halls are located in the center wing that provide 554 seats for undergraduate instruction. The third and fourth floors above the open-air colonnade provide offices and other educational support.

Historic Significance

Revelle College is one of four historic districts on campus, with seventeen buildings and one landscape area identified as historic resources. Historic districts typically consist of both contributing and non-contributing elements. Revelle College was the first undergraduate college to be developed on the upper campus, and it includes some of the earliest and most historically notable buildings.

Per the 2018 Long Range Development Plan (LRDP) Environmental Impact Report (EIR), York Hall is a significant historic resource of the campus. In addition, Mayer Hall and York Hall are both identified as "contributors" to the Revelle College Historic District (see Attachment 3, Project Location Map and Neighborhood Map). District contributors are those buildings or other features that help to constitute the historic character of the district. Generally, district contributors were constructed within the district's period of significance, relate to historic contexts and themes defined for the district, and retain enough of their historical appearance to convey their significance. Contributors within a historic district are typically unified by a consistent aesthetic and commonality of building materials, which add to an overall sense of a historical period. Pursuant to the 2018 LRDP EIR, any exterior modifications to historic resources must comply with the Secretary of the Interior's Standards for Rehabilitation.

Any proposed exterior modifications to the original Mayer Hall building and York Hall would be evaluated by a historic preservation professional to ensure compliance with the Secretary of the Interior's Standards for Rehabilitation, pursuant to the 2018 LRDP EIR requirements.

PROJECT DESCRIPTION

Mayer Hall: The seismic retrofit work of Mayer Hall would include reinforcement of existing shear walls and new shear walls to be added in areas where discontinuities currently exist. Shear walls should be added under discontinuous walls to mitigate any deficiencies with diaphragm, collector or column overstress that may occur. New foundation elements will be required where shear walls are added. The analysis also recommended that an ASCE 41 Tier 3 analysis, including material samples testing and non-linear analysis, be conducted on the building. Doing so may significantly reduce the number of existing walls that will need to be retrofitted. Upon completion of the proposed project, Mayer Hall would be corrected to SPR IV or better.

The scope of the seismic strengthening work would include additional reinforcement of existing shear walls; adding new shear walls under discontinuous walls; and modifications at existing foundations. Furthermore, the Tier 2 analysis recommended that the campus complete a detailed condition study of the existing grouted stone panel handrail system and the precast concrete trellis to determine if repairs to these elements should be completed as part of the retrofit work.

York Hall: The seismic retrofit work of the SPR VI portion of York Hall (west wing) (see Attachment 5) would include strengthening first floor columns for axial overturning loads; strengthening shear transfer from slabs to walls; and fiber wrapping columns as well as increasing foundations. Upon completion of the proposed seismic corrections of the west wing, the entire building, including the north, south, and middle wings, would be improved to SPR IV or better. The exact seismic solution will be the subject of

further assessment during design and it will be limited by project budget, recommendations related to historic review and approval of the design, and market conditions at time of bid.

Construction Impacts

At Mayer Hall, due to the walls requiring retrofit work being primary located at the ends of the building, and interior column retrofit work being minimal, construction is anticipated to be relatively un-intrusive. Access to the interior of the building would be limited to a few offices. Modifications would most likely be made to the interior sides of walls so as to maintain the continuity of the building envelope and the existing architectural character of the facade. The overall scope of work is small enough to be accomplished during summer break. Should timing of the project not align with summer break, work could be phased in small increments and coordinated with the building occupants, however, this would require a longer overall construction duration.

At York Hall, due to the extent of seismic retrofit, repair and abatement work, the campus has attributed a high level of difficulty because of the complexities involved with correcting a soft story while maintaining the historic appearance of the building. While a majority of the work will be outside of occupied spaces, the foundation work will need to be scheduled during summer or winter breaks to avoid disruption of classes and maintain access to the large teaching auditorium in the center of York.

Due to the close proximity of the buildings, the University plans to mobilize one contractor for work at both Mayer Hall and York Hall, which will cut down on construction cost and timeline.

FUNDING PLAN

The proposed Revelle College Seismic Corrections project has a total project cost of $58,908,000 and will be funded by $56,658,000 in external financing supported by State General Funds (California Education Code Sections 92495 et seq.) and $2.25 million in UC San Diego campus funds. Of the $56,658,000, the funds will be from two different Capital Outlay Budget Proposals associated with the University's 2020-21 Budget for State Capital Improvements: a) $52,158,000 will be funded from the Systemwide 2020-21 Seismic Program Supported by State Resources; and b) $4.5 million will be funded from the Systemwide 2020-21 Planning for Future State Capital Outlay.

COST BASIS

The campus has completed pre-design studies, including Tier 2 seismic analyses that informed the scope and cost analyses for the project. The structural engineer for the Tier 2 study has provided a preliminary cost range based on the scope identified in the study. This range includes significant variation due to a Tier 2 level of knowledge about the buildings. Cost estimates will be further refined when the Tier 3 study is complete. The campus is utilizing a construction manager/general contractor (CM/GC) delivery method.

SUSTAINABILITY

The project will comply with the *University of California Policy on Sustainable Practices*. As required by this policy, the project would adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

RELATIONSHIP TO UNIVERSITY MISSION AND OBJECTIVES

The project supports the instruction and research mission of the University of California by providing seismically safe facilities for teaching and research in campus academic buildings on the San Diego campus.

ALTERNATIVES

As of the date of this Project Planning Guide, only Tier 2 analyses have been completed on Mayer Hall and York Hall, and specific retrofit designs have not been fully vetted. The alternatives described below are preliminary and will be further refined upon receipt of Tier 3 analyses and through the project planning process:

1. **Retrofit:**

   Mayer Hall:

   While a Tier 3 analysis has not yet been completed on Mayer Hall, the Tier 2 analysis recommended an estimated cost per square foot of $310 to complete the seismic retrofit scope. Based on the Tier 2 study, upon completion of the proposed project, Mayer Hall would be corrected to SPR IV or better. The exact cost to achieve SPR III is unknown.

   York Hall:

   While a Tier 3 analysis has not yet been completed on York Hall, the Tier 2 analysis recommended reinforcement of the existing colonnade by strengthening existing concrete buttress walls with reinforcing bars and dowels; strengthening existing flared columns with steel plate or carbon fiber wrap; and strengthening existing footings with new reinforced concrete. This approach would seek to minimize modifications to the architectural expression and historic significance of the colonnade and would retain circulation paths along and through it. Based on the Tier 2 study, upon completion of the proposed project, York Hall would be corrected to SPR IV or better. The exact cost to achieve SPR III is unknown.

2. **Demolish only (relocate the functions into existing space that does not require seismic retrofit):**

   This is not an option for the campus. Not only is instructional and research space limited, but there are no other locations for which to relocate the Physics department, Division of Biological Sciences, or Department of Chemistry and Biochemistry on campus.

3. **Demolish and Replace:**

   If State funding were to be identified to demolish and replace Mayer Hall, the campus would consider this alternative however, at this time, funding for a complete replacement is not identified and therefore a retrofit is proposed. It should further be noted that the Department of Physics is a member of the Division of Physical Sciences. Physics was one of the founding departments of UC San Diego, and as such is located primarily in Mayer Hall, one of the first

structures built on campus in the Revelle College neighborhood. Per the 2018 Long Range Development Plan (LRDP), Mayer Hall while not a significant resource on its own, it has been identified a contributor to the Revelle College Historic District. Demolition of this structure would require additional environmental analysis (MND or EIR with public review).

York Hall has been identified as a significant historic resource as well as a contributor to the Revelle College Historic District. Demolition of this structure would require additional environmental analysis (MND or EIR with public review) and has the potential to cause controversy within both the campus and external community and could result in delays to the project. From an environmental perspective, this option is the least sustainable because the project would forego the savings in embodied energy associated with retaining the existing structure while incurring a significant carbon footprint due to the inherent embodied carbon in producing new concrete, fly ash content notwithstanding. The campus has determined that demolition of York Hall is not appropriate or warranted at this time.

Project Schedule

UNIVERSITY OF CALIFORNIA, SAN DIEGO

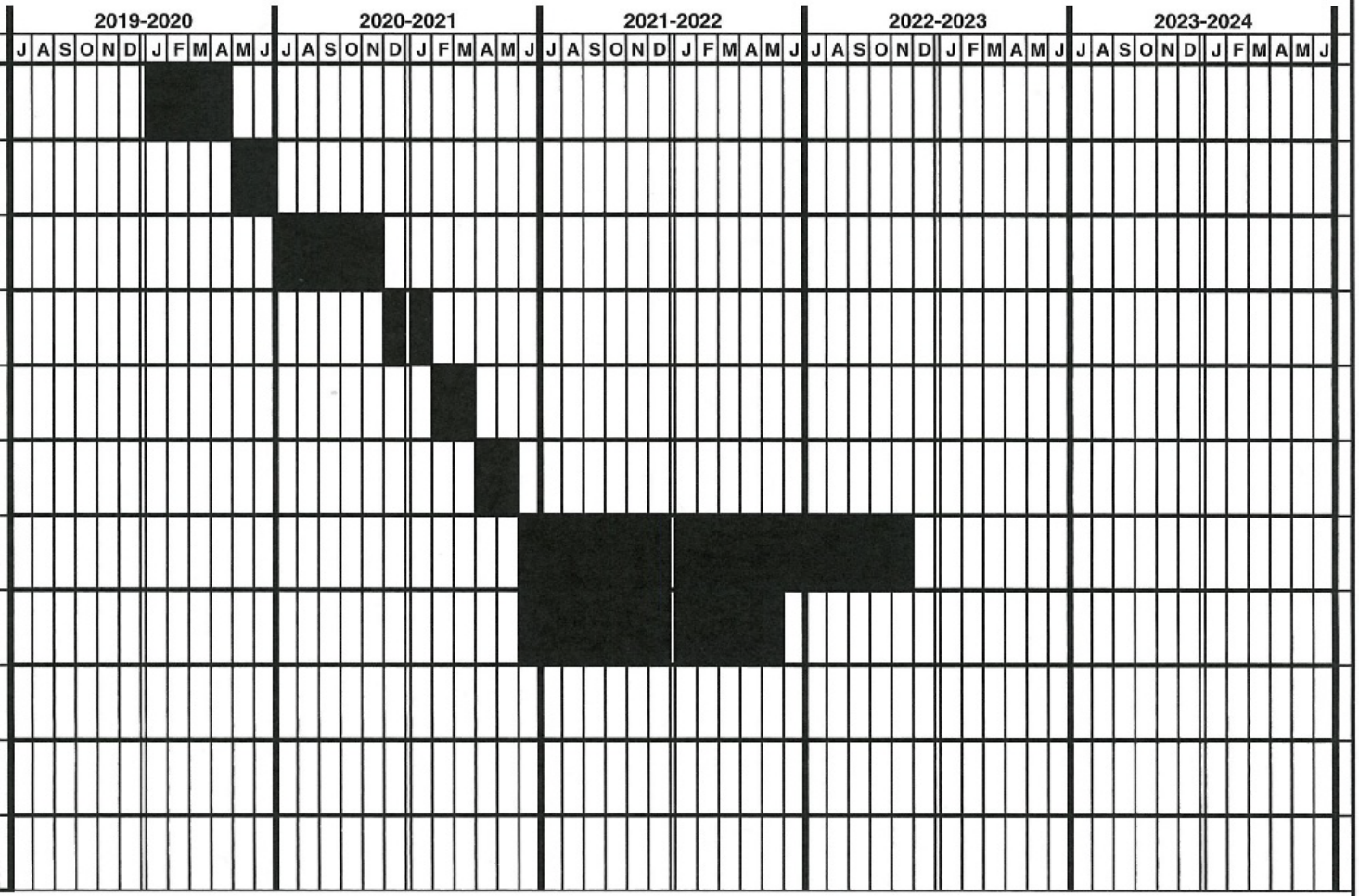
ATTACHMENT 1

PROJECT NAME: **Revelle College Seismic Corrections (Mayer Hall and York Hall)**

PROJECT # / PLANT ACCOUNT #: **5372 / 963460**

DATE: 1/6/2020

ACTIVITY	No. of Months
Preliminary Plans	4
Preliminary Plans Review	2
Working Drawings	5
Agency Review	2
Working Drawings Review	2
Bid/Award Contract	2
Construction Mayer Hall	18
Construction York Hall	12
Cumulative Calendar Months	**35**



Approved: _____

Title: Eric C. Smith, PE, Associate Vice Chancellor

CPM Design Bid Build Schedule 03/19

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division UC San Diego **Project Account** 963460

Project Title Revelle College Seismic Corrections (Mayer Hall & York Hall)

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (**X**) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970** - When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: § _____

☒ **II. CATEGORICALLY EXEMPT** - This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

X	Class 1:	Existing Facilities		Class 17:	Open Space Contracts or Easements
	Class 2:	Replacement or Reconstruction		Class 23:	Normal Operation of Facilities for Public Gatherings
	Class 3:	New Construction or Small Structures		Class 25:	Transfer of Land: Natural Conditions/Historical Resources
	Class 4:	Minor Alterations to Land		Class 30:	Minor Actions: Prevent Hazardous Waste/Substances
	Class 6:	Information Collection	X	Class 31:	Historical Resource Restoration/Rehabilitation
	Class 11:	Accessory Structures		Class 32:	In-Fill Development Projects
	Class 13:	Acquisition for Conservation		Class 33:	Small Habitat Restoration Projects
	Class 16:	Transfer of Land Ownership for Parks		Other:	

☐ **III. INITIAL STUDY** - This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152): _____

☐ **IV. ENVIRONMENTAL IMPACT REPORT (EIR)** - It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☐ Programmatic ☐ Stand-Alone (Project-Specific) _____

Additional project analysis:

☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR: _____

PROJECT DESCRIPTION

Mayer Hall is a 126,000 square-foot concrete structure built in 1963 and York Hall is a 134,000 square-foot concrete structure built in 1966; both located in the Revelle College neighborhood on the La Jolla west campus. Mayer Hall is five-stories and serves as the center for physics study at UC San Diego, York Hall provides a considerable amount of instructional lab space for the Division of Biological Sciences and the Department of Chemistry and Biochemistry. The York Hall building footprint is in the shape of the letter 'E' with a distinct open-air colonnade that worms the vertical spine along the western façade, connecting three wings: the top (north) and bottom (south) wing provide laboratory space; the center wing in an auditorium.

After completion of a Tier 2 seismic analysis, Mayer Hall was rated Seismic Performance Level (SPL) VI, which is "Very Poor". The colonnade portion of York Hall is a SPL VI, the north, south and middle wings are rated SPL V. Due to these ratings, Mayer Hall and York Hall require seismic corrections. The scope would include seismic corrections only, in compliance with the Secretary of the Interior Standards for rehabilitation. Conditions of approval attached.

V. Does this project conform to the approved LRDP? ☒YES ☐NO ☐NA

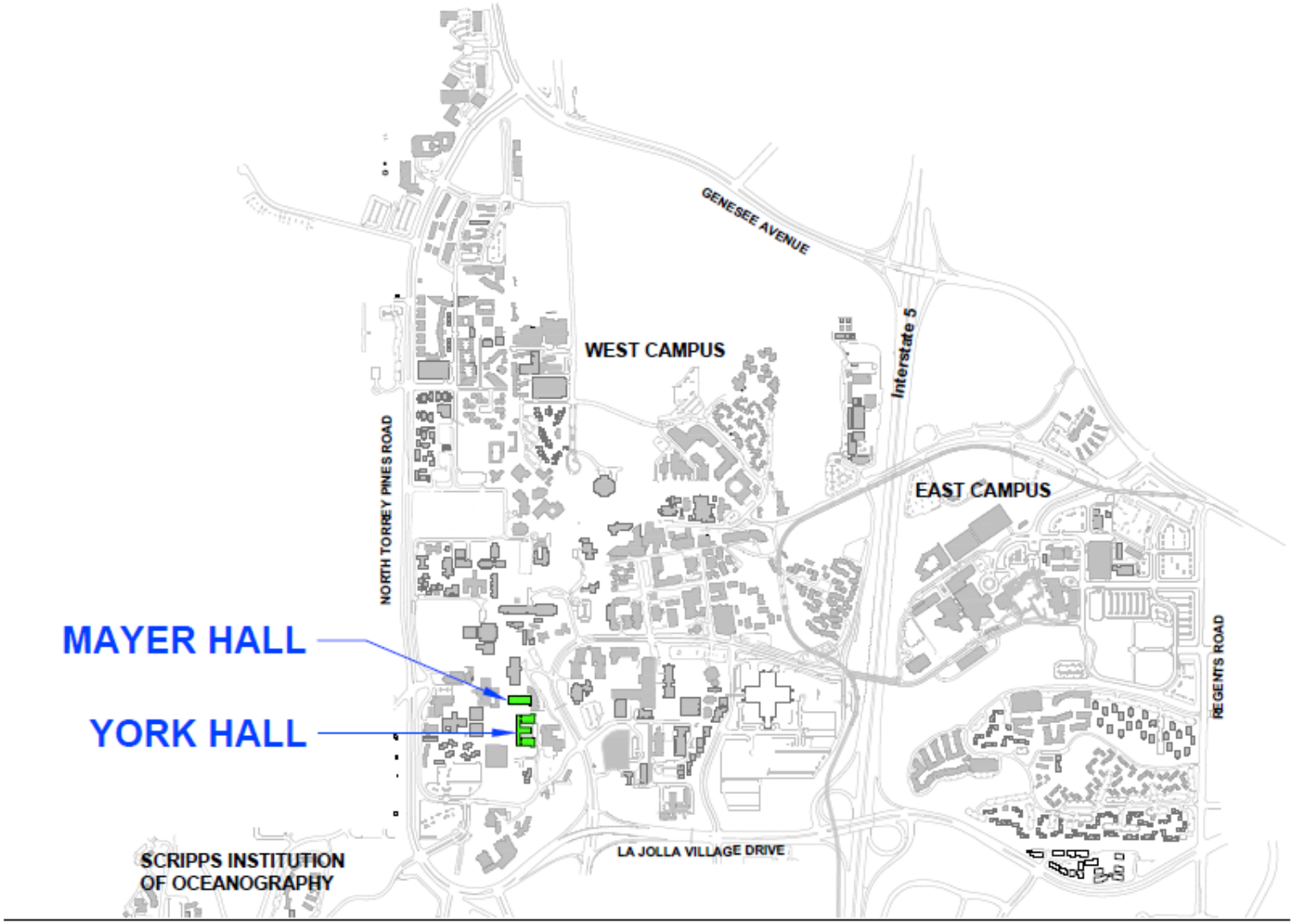
VI. Lisa Goodman — Prepared by; 12/11/2019 — Date; Lauren Lewis — Local Approved by; 01-10-20 — Date

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification

Signed _____ Date 01/10/2020

ATTACHMENT 3

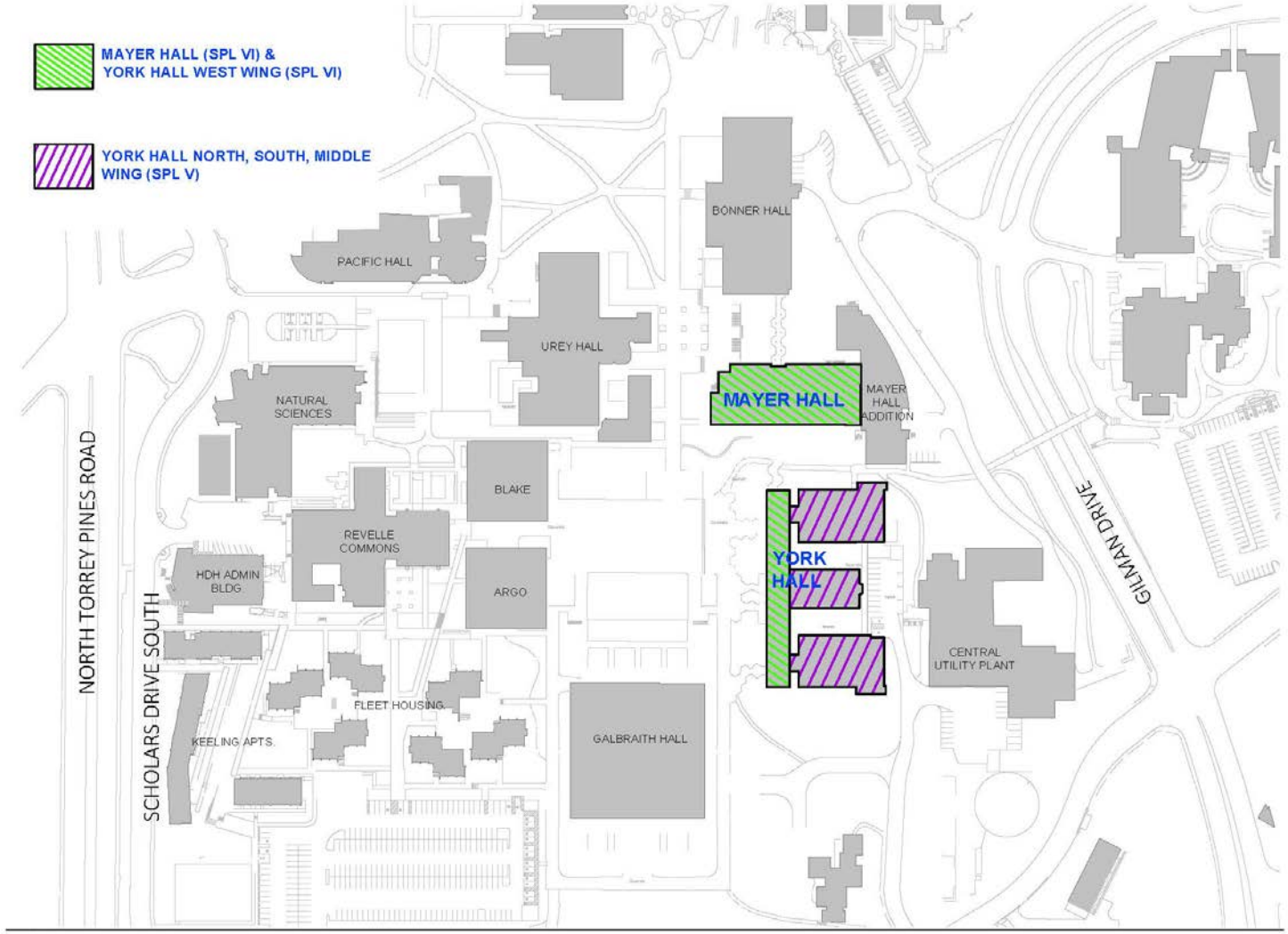


N.T.S.

UC San Diego
CAMPUS PLANNING

Revelle College Seismic Improvements
Mayer Hall and York Hall
12/11/2019

ATTACHMENT 4



UC San Diego
CAMPUS PLANNING

Revelle College Seismic Improvements
Mayer Hall and York Hall
12/13/2019

ATTACHMENT 5

York Hall West Elevation

ATTACHMENT 5

York Hall North Elevation

ATTACHMENT 5

York Hall Southwest Elevation

ATTACHMENT 5

York Hall East Elevation

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Santa Barbara - Music Building Unit 1 Seismic Corrections	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$15,000	PWC	$15,000

Music Building Unit 1 Seismic Corrections - $15,000,000 for Preliminary Plans, Working Drawings, and Construction. The project includes seismic corrections of the 37,644 gross-square-foot Unit 1 of the Music Building. The structure has a Seismic Performance Rating (SPR) of VI and will be improved to meet a SPR of IV. The project would also include abatement of hazardous materials, address upgrades required to comply with fire life safety codes and accessibility, and deferred maintenance focused on electrical systems, elevator, and mechanical system repairs. Total project costs are estimated at $15,000,000, including Preliminary Plans ($207,000), Working Drawings ($1,075,000), and Construction ($13,718,000). The construction amount includes $12,269,000 for the construction contract, $858,000 for contingency, and $591,000 for architectural and engineering services. Preliminary Plans are scheduled to begin in July 2020 and complete in December 2020. Working Drawings are scheduled to begin in February 2021 and complete in June 2021. Construction is scheduled to begin in February 2022 and complete in October 2022.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**7220**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Carey Barker	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

UC SANTA BARBARA

PROJECT PLANNING GUIDE
Music Building Unit 1 Seismic Corrections
Project No. 988711

December 2019

Approved:

Chuck Haines
Associate Chancellor, Finance and Resource Management
Sole Campus Capital Designee
University of California, Santa Barbara

PROJECT PLANNING GUIDE

Music Building Unit 1 Seismic Corrections

University of California Santa Barbara

Project No. 988711

December 2019

PROJECT PLANNING GUIDE

Music Building Unit 1 Seismic Corrections
Project No. 988711
University of California Santa Barbara

December 2019

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PROJECT PLANNING GUIDE

Music Building Unit 1 Seismic Corrections

Project No.988711

University of California Santa Barbara

December 2019

I Executive Summary

The Santa Barbara campus proposes seismic corrections of Unit 1 of the Music Building (Building 531). The Music Building was among the first permanent buildings constructed at UC Santa Barbara and is comprised of two wings that were designed by different architects 12 years apart—Unit 1 in 1954 and Unit 2 in 1966. Building codes have since become much more stringent, especially with regard to seismic design. The structure has a Seismic Performance Rating (SPR) of VI and will be improved to meet a SPR of IV.

The Music Building provides 57,250 assignable-square-feet (asf), in 105,811 gross-square-feet (gsf), supporting the Department of Music, including its offices, studios, classrooms, teaching/practice rooms, Lotte Lehmann Concert Hall, and Karl Geiringer Hall (for chamber music), and an outdoor amphitheater. The Music Building accommodates between 6,000 and 7,000 student per academic quarter, and the department stages over 200 musical events attracting approximately 20,000 people annually.

In December 2018, as part of the UC Seismic Program, the Music Building was evaluated according to the Tier 1 criteria**.** Unit 1 was determined to have a SPR of VI. Due to major load path deficiencies and structural irregularities, Tier 2 and Tier 3 evaluations were required and the results confirmed the Tier 1 findings.

The proposed Music Building Seismic Corrections project will address the seismic deficiencies identified in Unit 1 which were based on the Linear Dynamic Procedure (LDP) that evaluated the entire structural system including diaphragms and foundations as is required of a Tier 3 analysis. Results of the LDP evaluation were consistent with the SPR of VI and confirmed the following deficiencies:

Music Building Unit 1, Tier 3 Findings: SPR VI

- Overstressed exterior walls.
- Load path and vertical irregularities.
- Torsional deficiency in the east one-story portion of the building.
- Diaphragm deficiencies associated with openings adjacent to shear walls.
- Insufficient seismic gaps near the adjacent Unit 2 structure.

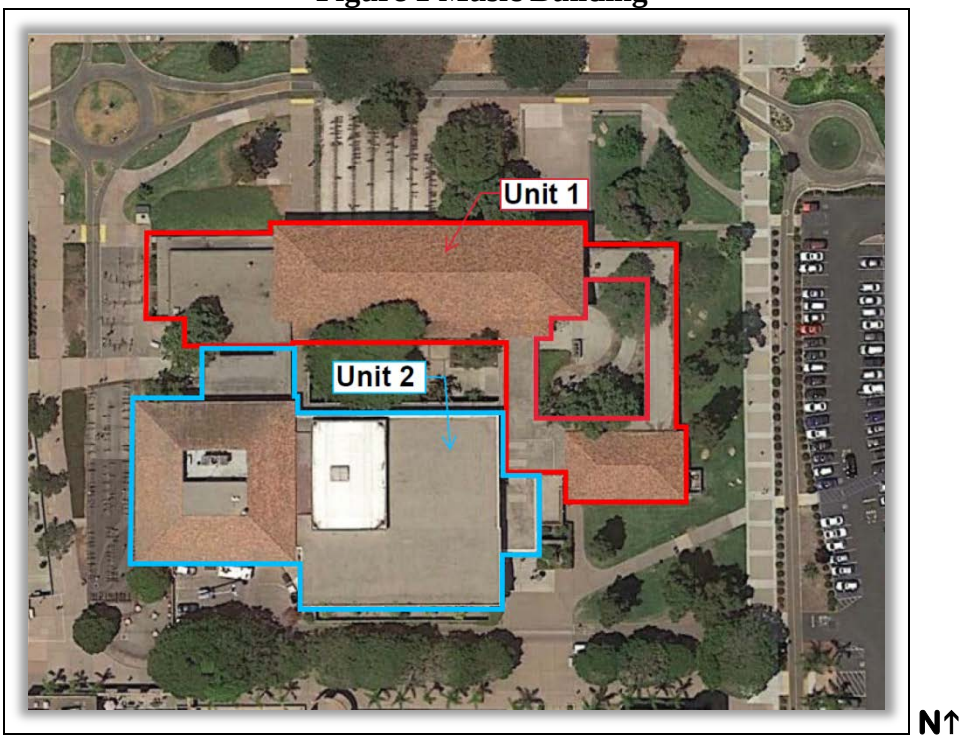
The proposed corrections to Unit 1 are based on a conceptual repair or retrofit approach that includes strengthening walls and columns, adding walls and providing connectors to roofs among other repairs that would improve the expected seismic performance of Unit 1 to a SPR IV and comply with UC Seismic Safety Policy. The project would also include abatement of

hazardous materials and address upgrades required to comply with fire/life safety codes and accessibility. Additionally, the project would include repairs to address critical deferred maintenance items described in the UC Facilities Conditions Assessment (FCA) report completed in the fall of 2019 for the Music Building, Unit 1. The deferred maintenance work identified in Unit 1 would focus primarily on electrical systems, elevator, and mechanical system repairs.

II Current Space: Music Building

The Music Building provides 57,250 asf (105,811 gsf) of academic space and has not benefited from a major renovation or consequential renewal since the original occupancies in the 1950s and 1960s. The Music Building is a two-wing, three-story complex constructed of masonry, concrete, plaster and steel. The buildings are designed with a central courtyard, amphitheater and a smaller auxiliary courtyard. The two building wings (Unit 1 and Unit 2) are connected by porticos and covered walkways or breezeways. Figure 1, below, delineates Unit 1 and 2.

Figure 1 Music Building



Unit 1 is comprised of a two-story main wing (see Attachment 3) with connecting one-story structures extending west and east. Note the flat roof (east side) which covers Lotte Lehman Concert Hall and departmental space, and the tiled roof (west side) that covers the Music Library.

The Unit 1 building was designed and constructed in 1954; it occupies the north and east perimeter of the Music Building site; it provides 17,530 asf (37,644 gsf) and consists of four interconnected structures that form the backdrop to the outdoor amphitheater. Covered walkways link the building structures together.

The one-story structure (west side) supports Karl Geiringer Hall (chamber music), the music repair shop and instrument check-out, and music practice studio; and, the one-story structure (east side) supports faculty offices and orchestral rehearsal hall. The two-story north structure, which connects with one-story structures to the east and west, provides nine music teaching/practice rooms, 25 individual practice rooms, equipment rooms, a musical instrument locker room, faculty and staff offices, storage, and the Henry Eichheim Collection of Musical Instruments.

Music Building- Space Summary	
	Unit 1
Description	ASF
Teaching/Practice	8,623
Research Lab/Studio	788
Geiringer Hall	2,205
Academic Office	3,537
Administrative Office	469
Other Musical Support Space	1,908
Total	17,530

III Problem Statement

A. SEISMIC DEFICIENCIES

The structural system and seismic design of the Music Building has been reviewed by three different structural engineers since 2005. The building was rated as part of the UC system-wide seismic evaluation program conducted in November and December of 2018. That evaluation returned a SPR of VI for Unit 1 of the Music Building, identifying significant structural deficiencies potentially affecting seismic performance. These deficiencies were documented in Tier 1 checklists (summarized below) and required Tier 2 and Tier 3 evaluation.

- Tier 1 Assessment for Unit 1: UC Seismic Performance Rating: VI
  - Lateral System Stress Check (wall shear, column shear or flexure, or brace axial as applicable)
  - Load Path
  - Geometry (vertical irregularities) Torsion
  - Heavy ceilings, features or ornamentation above large lecture halls, auditoriums, lobbies or other areas where large numbers of people congregate
  - Appendages

The subsequent Tier 2 and Tier 3 evaluation analyzed Unit 1 by using a Linear Dynamic Procedure (LDP) to further assess the deficiencies identified in Tier 1. The LDP was applied to the entire structural system including foundations and building diaphragms. The evaluation confirmed the initial findings and are described as follows.

- Tier 3 Evaluation for Unit 1: UC Seismic Performance Level Rating: VI
  - Reinforced masonry shear wall are overstressed at the 2-story building.
  - Load path and vertical irregularities where walls are offset.
  - Torsional deficiency in the east one-story portion of the building.
  - Diaphragm deficiencies associated with openings adjacent to shear walls.
  - Insufficient seismic gaps near the adjacent Unit 2 structure.

The evaluation further showed that the foundations and diaphragms are sufficient, although collector elements are recommended.

IV Project Description

The proposed project is informed by the structural engineer's seismic evaluation and recommended repairs to the Music Building, Unit 1. The proposed the seismic retrofit for Unit 1 would improve the building's seismic performance to meet or exceed performance criteria to comply with the UC Seismic Safety Policy. The project would also address code-required improvements triggered by the project, as well as abatement of hazardous materials. Concurrent with the retrofit, and with Unit 1 unoccupied, the project would also address critical deferred maintenance repairs described as high priority in the Facilities Condition Assessment (FCA) report.

A. MUSIC BUILDING – UNIT 1: SEISMIC RETROFIT

The scope of the Unit 1 seismic correction is informed by the Tier 3 Linear Dynamic Analysis and SPR IV classification objectives. The proposed conceptual seismic retrofit recommended by the structural engineer would include the following:

1. Provide new shotcrete walls to the 2-story building, including walls at the 2nd floor.
2. Add strong backs to brace the partial height CMU walls in the 2-story building.
3. Strengthen beams and columns under discontinuities.
4. Add concrete collectors in the 2-story building.
5. Strengthen existing concrete columns with concrete jacketing.
6. Provide steel anchorage plates at the top of walls and strength diaphragm shear walls.
7. Add collector to the 1-story west portion of the building to tie separate roofs together.
8. Add strong backing members to brace the top of the freestanding CMU wall. Anchor the strong members back to the existing low roof concrete slab.
9. Add shotcrete walls to the west end of the 1-story east portion of the building to brace the low roof diaphragm.

10. Add a new cast-in-place concrete wall at the west end of the 1-story to brace the low roof diaphragm. Provide a collector element at the roof level to develop forces into the new concrete wall.
11. Provide out of plane steel angle bracing of the CMU wall near the high point of the sloped roof.

Interior and exterior areas impacted by the retrofit work will be restored.

B. Code Upgrades

As proposed, the seismic retrofit will trigger code-required upgrades for fire/life-safety and accessibility, as per the Americans with Disability Act. Upgrades would ensure code compliance and may include fire alarms, improved egress and path of travel, restrooms, signage and door hardware to general public facilities. The campus also anticipates abatement of hazardous materials, based on known construction materials used when Unit 1 was built in the early 1950s.

C. Deferred Maintenance

The Music Building, Unit 1 has not benefited from a major renewal since it was occupied in 1954. The building's systems are original and have exceeded their expected life. In the fall of 2019, the campus completed a Facilities Condition Assessment (FCA) report for the Music Building, including Unit 1. The FCA identified deferred maintenance items based on risk and action timeframes, i.e., repairs needed within 1 year, 1 to 2 years, 3 to 5 years, or 6+ years. The project would address critical (within 1 year) FCA deferred maintenance items while the building is unoccupied during the retrofit. The primary focus would be on the electrical system which includes electrical controllers, emergency lighting, electrical panels, switch gear, a generator and variable frequency drive, as well as elevator repairs and air handling equipment.

V Cost Basis

Project costs are based on the Tier 3 seismic evaluation of the Music Building, Unit 1. Estimated construction costs were provided by the structural engineer and are based on the proposed conceptual retrofit to achieve the SPR of IV as per UC Seismic Safety Policy. Reasonable allowances are included for code compliance and hazardous materials abatement. Costs of deferred maintenance items are based on estimates developed as part of the FCA.

VI Sustainability

The project will comply with the University of California Policy on Sustainable Practices. As required by policy, the project will adopt energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

VII Relationship to the University's Mission and Objective

This project supports the instruction, research, and public service mission of the University of California by providing seismic corrections to the Music Building, Unit 1 which serves undergraduate and graduate students of the humanities and fine arts, supports faculty and research, and presents musical performances that are available to the campus community and general public.

VIII Project Alternatives

The scoping of the project did not include investigations or alternative retrofit scenarios that would exceed the UC seismic performance level IV. As proposed, the conceptual retrofit project would meet or exceed performance criteria to comply with UC Seismic Safety Policy.

Attachment 1

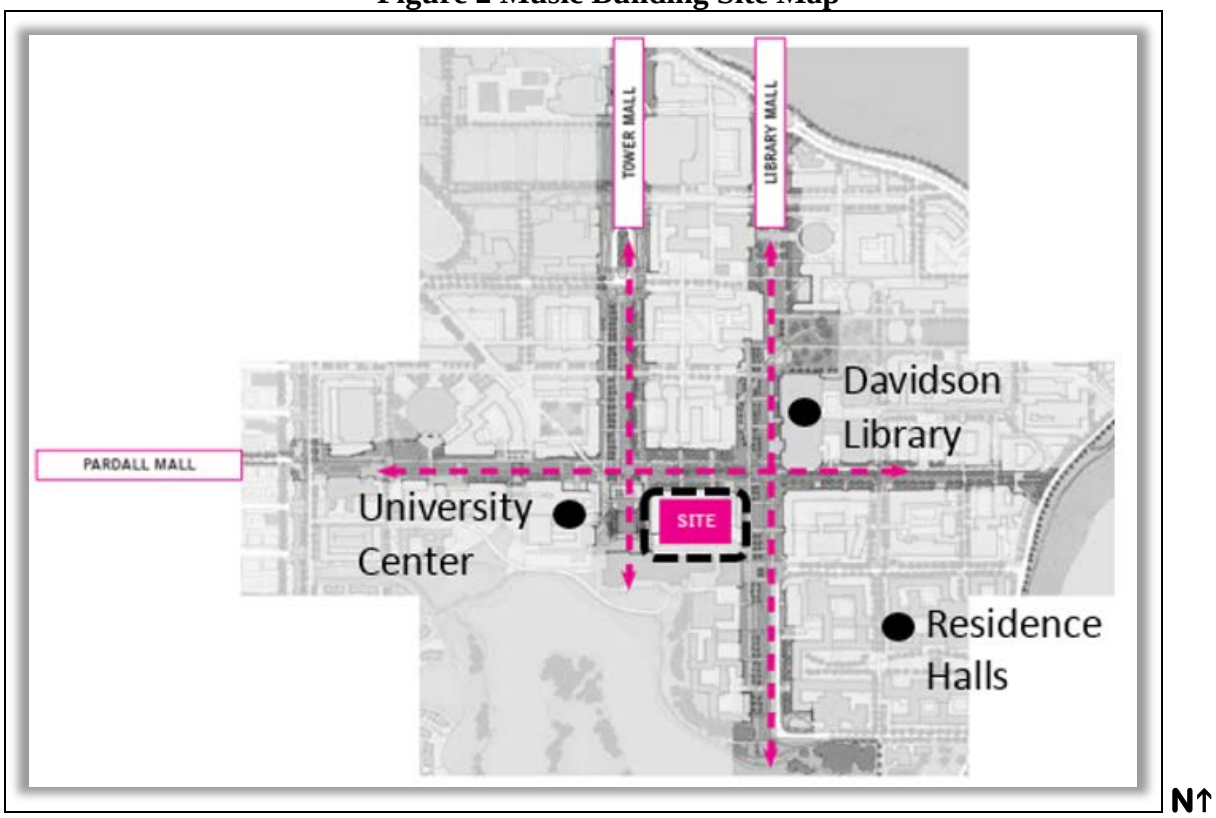
Project Location Map

Attachment 2

Project Site Map

The Music Building is located between the campus's two major north-south corridors—Storke Tower Mall and Library Mall as described in the campus LRDP. The site is adjacent to the University Center and next to the primary east-west campus corridor, the Pardall Mall, which extends to Isla Vista. Davidson Library is cattycorner from the Music Building, across the Pardall and Library Mall. See Figure 2, following.

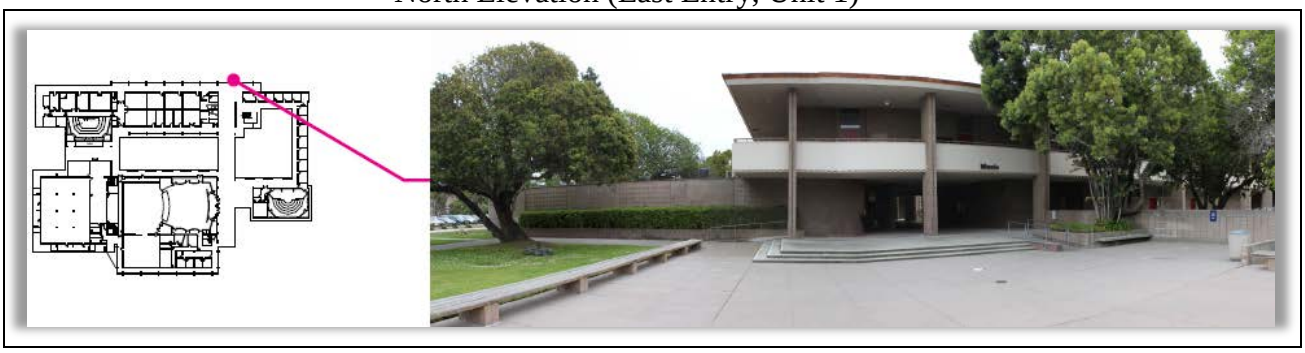
Figure 2 Music Building Site Map



Attachment 3

Music Building Images

North Elevation (East Entry, Unit 1)



North Elevation (West Entry, Unit 1)

Looking South

Northwest Corner Elevation (Unit 1)

Looking Southeast

West Elevation (Unit 1, Entry Breezeway from Storke Plaza, Unit 2 Music Library)

Looking East

Courtyard (Unit 2 (left), Unit 1 (right))

Looking West

Breezeway: Unit 2 Music Library (left), Unit 1 (right)

Looking West

CAPITAL IMPROVEMENT BUDGET •
BUDGET DATA

UNIVERSITY of CALIFORNIA
Santa Barbara (8)
Campus

Project Title: **Music Building Unit 1 Seismic Corrections**

988711	8531	CCCI: 7220
Campus Reference	Asset No.	EPI: N/A
		Cost Indexes:

A FUNDING SCHEDULE — Univ. Priority No.

Totals		Prefunded	2020-21	
$ P	207		P SE	207
W	1,075		W SE	1,075
C	13,718		C SE	13,718
E			E SE	
$ **15,000**	(Tot. Proj.)		15,000	

B FUNDING REFERENCES

	SEISMIC	DM	(2)	(3)	(4) Total All Sources	
Account No.:						
Source:						

C COSTS

		SEISMIC	DM	(2)	(3)	(4) Total All Sources	%
0	Site Clearance	$		$	$	$ -	0.0
1	Construction	10,629	1,640			12,269	81.8
2	Exterior Utilities					-	0.0
4	Site Development					-	0.0
5	External Fees	850	128			978	6.5
6	Internal Fees	420	64			484	3.2
7	Surveys, Tests, Plans, Specifications	105	16			121	0.8
8	Special Items	250	40			290	1.9
	SUBTOTAL	$ **12,254**	**1,888**	$	$	$ **14,142**	94.3
9	Contingency 7%	746	112			858	5.7
	TOTAL P•W•C	$ **13,000**	**2,000**	$	$	$ **15,000**	100.0
3	Group 2 & 3 Equipment	-	-			-	0.0
	TOTAL PROJECT	$ **13,000**	**2,000**	$	$	$ **15,000**	
	Available Funding						
	Anticipated Surplus (Deficit)	$		$	$	$	

D FINANCING

$		$
	General Funds Financing	$ 15,000,000
	TOTAL	$ 15,000,000

E STATUS OF PROJECT:

PPG

Name: Ed Schmittgen	Signature: Julie Hendricks	Budget No.	PPG
Title: Assoc Director, DCS	Title: Director, Design & Construction Services	Issue Date:	12/13/19
Ed Schmitt 12/13/19	Approved for Campus, Date: Julie Hendricks 12/13/19	Revised	
Program:	Fiscal: Signature:	Revised	
Cost:	Title:	Revised	
	Approved for AVP•PPC, Date:	Revised	
		Revised	

CAPITAL IMPROVEMENT BUDGET •
BUDGET DATA

UNIVERSITY of CALIFORNIA
Santa Barbara (8)
Campus

Project Title: **Music Building Unit 1 Seismic Corrections**

988711	8531	CCCI: 7220
Campus Reference	Asset No.	EPI: N/A
		Cost Indexes:

F ANALYTICAL DATA

	SEISMIC	DM	(3)	(3)	(4) Total All Sources
ASF per PPG	17,530 ASF	17,530 ASF	ASF	ASF	17,530 ASF
ASF Current	17,530 ASF	17,530 ASF	ASF	ASF	17,530 ASF
OGSF	37,644 OGSF	37,644 OGSF	OGSF	OGSF	37,644 OGSF
Ratio (ASF Current / OGSF)	0.47 to 1.00	0.47 to 1.00	to 1.00	0. to 1.00	0.47 to 1.00
Construction Cost per ASF	$ 606 / ASF	94 / ASF	$ / ASF	$ / ASF	$ 700 / ASF
Construction Cost per OGSF	$ 282 / ASF	44 / ASF	$ / OGSF	$ / OGSF	$ 326 / ASF
Total P•W•C Cost per ASF	$ 742 / ASF	114 / ASF	$ / ASF	$ / ASF	$ 856 / ASF
Total P•W•C Cost per OGSF	$ 345 / ASF	53 / ASF	$ / OGSF	$ / OGSF	$ 398 / ASF
Group 2 & 3 Equipment Cost per ASF	$ / ASF	/ ASF	$ / ASF	$ / ASF	$ / ASF

G CONSTRUCTION COST ANALYSIS

		Costs	Unit $/ASF		Costs $/OGSF	%	Remarks
	• Concrete & Structure	$					
	• Closing-In						
	• Finishing						
	• Group 1 Equipment						
a.	SUBTOTAL – Gen. Constr.	$	$		$		
b.	HVAC						
c.	Plumbing						
d.	Electrical						
e.	Elevators						
f.	Other						← Identify:
	TOTAL BUILDING						
	COST ONLY	$	$		$		← Identify:
g.	Additional Bldg. Costs						
	TOTAL BUILDING +						
	ADDITIONAL COSTS	$	$		$		
h.	Other Construction		← Identify:				
i.	Other Construction		← Identify:				
	TOTAL CONSTRUCTION						
	COST	$ 0	← Same as Schedule C, Item 1 (line 24), Page 1				

H NOTES:

8 **SPECIAL ITEMS**

In-house staff costs to support special services Special Items	27,000
Legal	20,000
Peer Review	50,000
CASP - Accessibility Consultant	20,000
Hazmat Abatement/Remediation services, includes consultants)	50,000
Hazmat Abatement/Remediation services, in-house staff)	24,000
Hazmat Surveys and Testing (see sub 7)	10,000
Record Drawings/Campus Modeling/Atlas/Archiving	6,000
Fire Protection/Life Safety Consultant	40,000
Fire Marshal	43,000
TOTAL	290,000

Budget No.	
Issue Date:	12/13/19
Revised	
Revised	
Revised	
Revised	
Revised	

Project Schedule

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

PROJECT: **Music Building Unit 1 Seismic Correction**
ACCOUNT NO. **988711**

DATE: December 13, 2019

ACTIVITY	No. of Months	July 2019-2020 July 2020-2021 July 2021-2022 July 2022-2023 July 2023-2024 July J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J
Preliminary Plans	6	
Preliminary Plans Review	1	
Working Drawings	5	
Agency Review	2	
Working Drawings Review	2	
Bid/Award Contract	3	
Construction	9	
Cumulative Calendar Months	28	

Approved: Julie Hendricks 12/13/19

Title: Julie Hendricks, Director Design & Construction Services

UNIVERSITY OF CALIFORNIA ENVIRONMENTAL IMPACT CLASSIFICATION

Campus/Field Station/Division Santa Barbara **Project Account** 988711

Project Title Music Building Seismic Corrections Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map with your submission.

☐ **I. EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970** - When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA. General/Statutory Exemption: §

☒ **II. CATEGORICALLY EXEMPT** - This project falls under the indicated Class(es) of Exemption(s), none of the exceptions to the exemption apply (15300.2), and there is no significant effect on the environment (for complete list see CEQA Guidelines Section 15300):

X	Class 1:	Existing Facilities		Class 17:	Open Space Contracts or Easements
	Class 2:	Replacement or Reconstruction		Class 23:	Normal Operation of Facilities for Public Gatherings
	Class 3:	New Construction or Small Structures		Class 25:	Transfer of Land: Natural Conditions/Historical Resources
	Class 4:	Minor Alterations to Land		Class 30:	Minor Actions: Prevent Hazardous Waste/Substances
	Class 6:	Information Collection		Class 31:	Historical Resource Restoration/Rehabilitation
	Class 11:	Accessory Structures		Class 32:	In-Fill Development Projects
	Class 13:	Acquisition for Conservation		Class 33:	Small Habitat Restoration Projects
	Class 16:	Transfer of Land Ownership for Parks		Other:	

☐ **III. INITIAL STUDY** - This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.

☐ Stand-Alone ☐ Tiered Initial Study (15152):

☐ **IV. ENVIRONMENTAL IMPACT REPORT (EIR)** - It is known that the project will have a direct or cumulatively significant effect on the environment and an EIR will be/has been prepared. Identify the type of EIR:

☐ Programmatic ☐ Stand-Alone (Project-Specific)

Additional project analysis:

☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR:

PROJECT DESCRIPTION The Santa Barbara campus proposes to address seismic deficiencies in the Music Building. The building, which is comprised of two separate wings connected by covered walkways and courtyards, was designed by different architects and constructed 12 years apart. Structurally, the Music Building is described as two components: Unit I which provides 37,644 gross square feet (gsf), and Unit II which provides 68,167 gsf. Combined, the Music Building encompasses 105,811 gsf that may be subject to seismic improvements. Work may include new shear walls, the addition of localized columns and foundations, bracing of walls, bracing and/or replacing heavy ceilings, strengthening beam to concrete connections, and strengthening beams at the penthouse. The project qualifies for a Class 1 exemption which allows for the repair and maintenance of existing structures involving neligible or no expansion of use. The proposed project involves improvements to existing structures to address seismic deficiencies with no expansion of use. In addition, none of the exceptions to the exemptions pursuant to CEQA Guidelines Section 15300.2 apply.

V. Does this project conform to the approved LRDP? ☐YES ☐NO ☐NA *[If NO or NA, include explanation in Project Description above]*

VI. Shari Hammond — Prepared by Shari Hammond — 3.21.2018 — Date

Local Approved by Alissa Hummer — 3-21-19 — Date

VII. OFFICE OF THE PRESIDENT

☒ Concur with Classification ☐ Do not concur with Classification

Signed — Date 3/22/2019

FORM DATE 9/2016 (UCOP Form EIC)

STATE OF CALIFORNIA
COBCP - Narrative
DF-151 (REV 07/19)

Fiscal Year	Business Unit	Department	Priority No.
2020-21	6440	University of California	

Budget Request Name	Capital Outlay Program ID	Capital Outlay Project ID *(7 digits. For new projects leave blank)*

Project Title	Project Status and Type
Berkeley - Centennial Bridge Improvement Project	Status: ☒ New ☐ Continuing Type: ☒ Major ☐ Minor

Project Category *(Select one)*

☐ CRI *(Critical Infrastructure)* ☐ WSD *(Workload Space Deficiencies)* ☐ ECP *(Enrollment Caseload Population)* ☒ SM *(Seismic)*

☐ FLS *(Fire Life Safety)* ☐ FM *(Facility Modernization)* ☐ PAR *(Public Access Recreation)* ☐ RC *(Resource Conservation)*

Total Request (in thousands)	Phase(s) to be Funded	Estimated Total Project Cost (in thousands)
$15,181	**WC**	**$27,681**

Centennial Bridge Improvement Project - $15,181,000 for Working Drawings and Construction. The project would replace a structurally deficient bridge, on UC owned land, located on a critical transportation route connecting the UC Berkeley Campus Park to the Hill Campus. The existing bridge structure, components and foundations are characterized in poor condition with signs of bridge structure movement and roadway subsidence. Centennial Drive is a publicly accessible roadway that also serves as an emergency exit/egress route for UC Berkeley, Berkeley Lab and the general public. The bridge is within close proximity to the Hayward fault, putting it at high risk of failure should an earthquake occur. Total project costs are estimated at $27,681,000, including Preliminary Plans ($800,000), Working Drawings ($1,374,000), and Construction ($25,507,000). The construction amount includes $21,868,000 for the construction contract, $1,604,000 for contingency, and $1,557,000 for architectural and engineering services as well as $478,000 for other construction costs. The Preliminary Plans are scheduled to begin in January 2020 and complete in April 2020. The Working Drawings are scheduled to begin in May 2020 and complete in January 2021. Construction is scheduled to begin in June 2021 and complete in May 2023.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed	CCCI
☐ Yes ☒ No		**6924**

Requires Provisional Language	Budget Package Status
☐ Yes ☒ No	☐ Needed ☒ Not Needed ☐ Existing

Impact on Support Budget

One-Time Costs	☐ Yes	☒ No	Future Costs	☐ Yes	☐ No
Future Savings	☐ Yes	☒ No	Revenue	☐ Yes	☐ No

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No

Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Colleen Connor	1/10/20	Dana Santa Cruz	1/13/20
Department Director	Date	Agency Secretary	Date

Department of Finance Use Only

Principal Program Budget Analyst	Date submitted to the Legislature

PROJECT PLANNING GUIDE

CENTENNIAL BRIDGE IMPROVEMENT PROJECT
January 2020

Approved for the Lawrence Berkeley National Laboratory – Berkeley Lab and UC Berkeley:

Rosemarie Rae 1/6/20
Rosemarie Rae Date
Vice Chancellor - Finance
and Chief Financial Officer
University of California, Berkeley

1/6/20
Michael T. Brandt Date
Deputy Director for Operations
Lawrence Berkeley National Laboratory
Berkeley Lab

University of California, Berkeley
2020-2021 Major Capital Improvement Program

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EXECUTIVE SUMMARY

Located on a 202-acre site in the hills above the UC Berkeley campus overlooking the San Francisco Bay, Lawrence Berkeley National Laboratory – Berkeley Lab (Berkeley Lab) is a multiprogram science lab in the national laboratory system supported by the U.S. Department of Energy (DOE) through its Office of Science. It is managed by the University of California and is charged with conducting unclassified research across a wide range of scientific disciplines. Berkeley Lab has trained tens of thousands of university science and engineering students who are advancing technological innovations across the nation and around the world.

The Centennial Bridge serves as a critical transportation resource for UC Berkeley and Berkeley Lab. Centennial Drive, which passes over Centennial Bridge, connects Stadium Rim Way, the Berkeley Stadium and the Berkeley Campus to the Hill Campus (see Attachment 2: Project Site Map). Over 5,500 vehicles pass under or over the bridge daily. Institutions immediately accessed from Centennial Drive are the UC Botanical Gardens, the Lawrence Hall of Science (LHS), the UC Berkeley Space Sciences Laboratory, the Mathematical Sciences Research Institute (MSRI), and Berkeley Lab. Centennial Drive is a publicly accessible roadway that also serves as an emergency exit or egress route for UC Berkeley, Berkeley Lab and the general public.

Centennial Bridge has aged and deteriorated significantly over the years and recent geotechnical and geologic studies have determined that the structure is located on top of a landslide-prone area. Ongoing differential settlement of the bridge and adjacent roadway creates dangerous driving and biking conditions and requires frequent maintenance efforts to repave or repair the roadway. Further, the bridge is within close proximity to the Hayward fault, putting it at high risk of failure should an earthquake occur. If the bridge fails and this emergency route is not available, there could be immediate severe impact to public safety along with long-term disruptions to the community and to operations at UC Berkeley facilities, MSRI, and at Berkeley Lab. The immediate risks to life and safety and to the ability to evacuate Berkeley Lab, the UC Berkeley campus, and eastern Berkeley jeopardize the safety of that population not only in the case of earthquakes, but also wildfires, and other natural or manmade disasters.

In early 2018, UC Berkeley initiated a study to identify an effective, reliable and cost-effective solution to address the structural issues associated with Centennial Bridge and to ensure the continued safe access for the Berkeley Lab and UC Berkley to their facilities as well as use by the public. The design team evaluated numerous alternatives for the replacement or rehabilitation of the bridge. The preferred alternative, chosen as the most feasible and cost-effective option, is to replace the bridge and span the landslide area.

The total cost of the project is estimated to be $27,681,000. UC Berkeley would manage the project. UC Berkeley has identified $12,500,000 of non-State resources and Berkeley Lab is requesting the use of $15,181,000 of external financing supported by General Funds (please refer to Funding Plan section for detail). DOE is the primary source of capital investment at Berkeley Lab; however, because Centennial Bridge is a Regents-owned asset located outside all DOE parcel lease agreements, it is not eligible for DOE funding.

BACKGROUND

Berkeley Lab is a DOE National Laboratory primarily situated on 202 acres of Regents-owned land in the Hill Campus that is leased to DOE. Berkeley Lab is operated under contract between the University and DOE and, as such, is a separate entity from UC Berkeley. Consistent with this contract and land leases, DOE constructs and maintains facilities and improvements for operating Berkeley Lab.

The Centennial Bridge Improvement project is listed in both UC Berkeley's and Berkeley Lab's chapter in the 2019-25 Capital Financial Plan. UC Berkeley identified Berkeley Lab as a key stakeholder for the project. UC Berkeley and Berkeley Lab staff will continue to work in partnership to prepare the California Environmental Quality Act (CEQA) document and obtain necessary approvals.

Description and Use of Bridge

Centennial Bridge structure is 55-years old and is a key transportation route between the Berkeley Lab and UC Berkeley. The inclined bridge is a skewed welded steel plate girder span with a reinforced concrete deck, founded on drilled piers into the soil below. The structure consists of five-inch tall vertical steel plate bridge bearings, abutment walls of reinforced concrete, wing walls of reinforced concrete cantilever retaining walls on conventional spread footings, and a pile cap supported by seven six-foot diameter drilled-belled caissons. Berkeley Lab controls and operates Lawrence Road, which is grade-separated from Centennial Drive, as Lawrence Road passes beneath Centennial Bridge.

Figure 1 – Centennial Bridge Crossover of Lawrence Road

Structural Deficiencies

An extensive field investigation was undertaken to verify existing conditions and are documented through site photographs and field notes. The bridge and wing walls exhibit evidence of deterioration and movement from the underlying landslides, causing movement of the bridge and its components. The existing bridge structure, bearings, abutment walls, wing walls, and bridge foundations all are characterized in poor condition with signs of movement and with increased risk of failure (refer to photographs below in Figures 2 through 4 indicating movement of structure).

Figure 2 – Abutment Separation

Figure 3 – Abutment From Above

Figure 4 – Concrete Retaining Wall

Centennial Bridge's poor performance is attributed to two primary landslide deposits that underlie the bridge's approach earth fills and structures. Previous investigations have identified two primary landslide deposits that converge at the bridge. Both deposits are considered active, with a documented history of incremental downslope movement under wet-weather conditions. Although neither landslide deposit has experienced a significant failure since 1983, the bridge's approach fills and structure exhibit indications[1] of continuing earth movement impacting the site.

Centennial Bridge is approximately two-thirds of a mile from the Hayward Fault, a major regional active fault. Previous geotechnical analyses have shown that the landslide deposits that underlie the approach fills may experience several feet of downslope movement in response to strong seismic forces, far greater than what the current bridge structure can be reasonably expected to tolerate.

[1] Since 1982, multiple geotechnical investigations have characterized earth movement in the vicinity of Centennial Bridge, including geologic maps created at the time of the 1982-1983 landslide, borings drilled in 1983, inclinometers installed in borings on both sides of Centennial Bridge, and a geotechnical and geologic study in 2009.

PROJECT DESCRIPTION

The Centennial Bridge Improvement Project would replace a structurally deficient bridge on Regents owned land located on a critical transportation route dissecting Berkeley Lab and connecting the UC Berkeley Campus Park to the Hill Campus (refer to Attachment 1: Location Map). In early 2018, UC Berkeley initiated a study to identify a long-term solution to the abutment movement and resulting roadway subsidence that has been on-going for decades.

A consulting team of engineering firms provided an analysis of feasible project alternatives, selecting a preferred alternative through consideration of site conditions, cost, seismic performance, constructability, public and private access, property and utility impacts, and expected service life.

The preferred design alternative would relocate a portion of Centennial Drive by creating a new bridge structure to a parallel alignment to the existing roadway (offset 40-feet to the south). Upon completion of the proposed project, Centennial Drive would cross the existing Lawrence Road over a new 250-foot-long viaduct structure. Lawrence Road would remain in its current configuration. The length of the driveway to Berkeley Lab's Strawberry Gate would increase by approximately 25-feet based on the location of the new bridge abutments. The existing bridge and Centennial Drive roadway would be removed during the final stages of construction. The profile of the new Centennial Drive would match existing profile. The roadway would consist of two 12-foot lanes with a 4-foot shoulder on each side. The design speed for this portion of Centenrial Drive is currently 20-mph and would remain so after completion of the project.

Geotechnical considerations

The proposed viaduct alternative substantially reduces the risk to Centennial Drive, which would be realigned to the south passing largely over the landslide area. The supports to the bridge that pass through landslide deposits would be designed to tolerate a limited amount of earthquake-induced landslide movement. The two approach fills leading up to the old Centennial Bridge would be removed after the new viaduct is open, reducing the magnitude of earthquake-induced landslide movement.

Structural considerations

Located within a landslide-prone area, the new viaduct is designed to accommodate possible landslide movement and mitigate the effect of landslide around the support elements. The removal of weak fill materials and reduction of soil volume on the landslide zone further reduces landslide potential. Construction of the viaduct would utilize a cast-in-place concrete box girder that is post-tensioned in place. In addition, the replacement bridge would be designed according to American Association of State Highway and Transportation Officials (AASHTO) standards.

Implementation

The new Centennial Drive roadway, bridge and approaches would be constructed while the existing roadway is still active. Lawrence Road would likely require a temporary shutdown

during installation of the bridge superstructure. Based on the proposed construction phasing, several temporary impacts to both UC Berkeley and Berkeley Lab have been identified including parking, facility access, roadway or lane closures and temporary facilities required for construction. The proposed re-alignment of Centennial Drive for the viaduct would eliminate the need for long-term roadway closures of both Centennial Drive and Lawrence Road during construction, although there would be periodic lane closures on Lawrence Road to accommodate the construction staging and activities.

Utility impacts

Two large utilities would be relocated[2]. On the west approach to the proposed viaduct, the existing 12-inch water line may need to be relocated or protected in the permanent condition. Under the proposed viaduct, there is an existing 36-inch storm drain pipe which would have to be relocated to the north or south to avoid the proposed columns. The proposed grading and landslide mass removal in-between the proposed Centennial Drive and existing Lawrence Road would require reconfiguration of the storm drain system that currently serves Berkeley Lab's U5 parking lot.

Permanent modifications

The construction of the viaduct alternative would result in the permanent relocation of a portion of Centennial Drive. This roadway relocation improves the profile grade from the existing condition and relaxes the tight curve on the west upslope side of the road. It also slightly increases the queue length at Strawberry Gate.

California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the University of California is the Lead Agency for the project and has the principal responsibility for implementing and approving the project and its accompanying environmental documentation. The University of California anticipates that CEQA review would be required for each of the proposed project options being considered; such review may include preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) or similar documentation.

[2] Existing utility layouts were examined based on record data received from UC Berkeley and Berkeley Lab; additional fieldwork will be required to determine the exact location, elevation, size and material of these utilities.

FUNDING PLAN

The proposed Centennial Bridge Improvement project will be funded by $15,181,000 in external financing supported by State General Funds (California Education Code Sections 92495 et seq.) and $12,500,000 in UC Berkeley campus funds.

COST BASIS

The campus has completed general pre-design studies (including alternatives analysis) and cost analyses for this project by an external consultant. Project costs will be further refined following additional study of the geotechnical and geological conditions at the project site.

SUSTAINABILITY

The project will comply with the University of California Policy on Sustainable Practices. As required by the policy, the project will adopt energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

RELATIONSHIP TO UNIVERSITY MISSION AND OBJECTIVES

The project supports the instruction and research mission of the University of California by providing seismically safe infrastructure for students, employees and the public.

ALTERNATIVES

An Alternatives Analysis Report dated October 16, 2018 prepared by JMA Civil, Inc. identified and analyzed a broad range of feasible alternatives in each of three categories (repair, replacement, and elimination). A total of nine initial alternatives were identified by the design team, with input from UC Berkeley and Berkeley Lab. The alternatives were vetted through significant discussion and analysis and led to the identification of four preferred alternatives that focused on replacement. Repair or retrofit options were eliminated during the analysis process over expressed concern for long-term performance and durability considerations. The four preferred alternatives were:

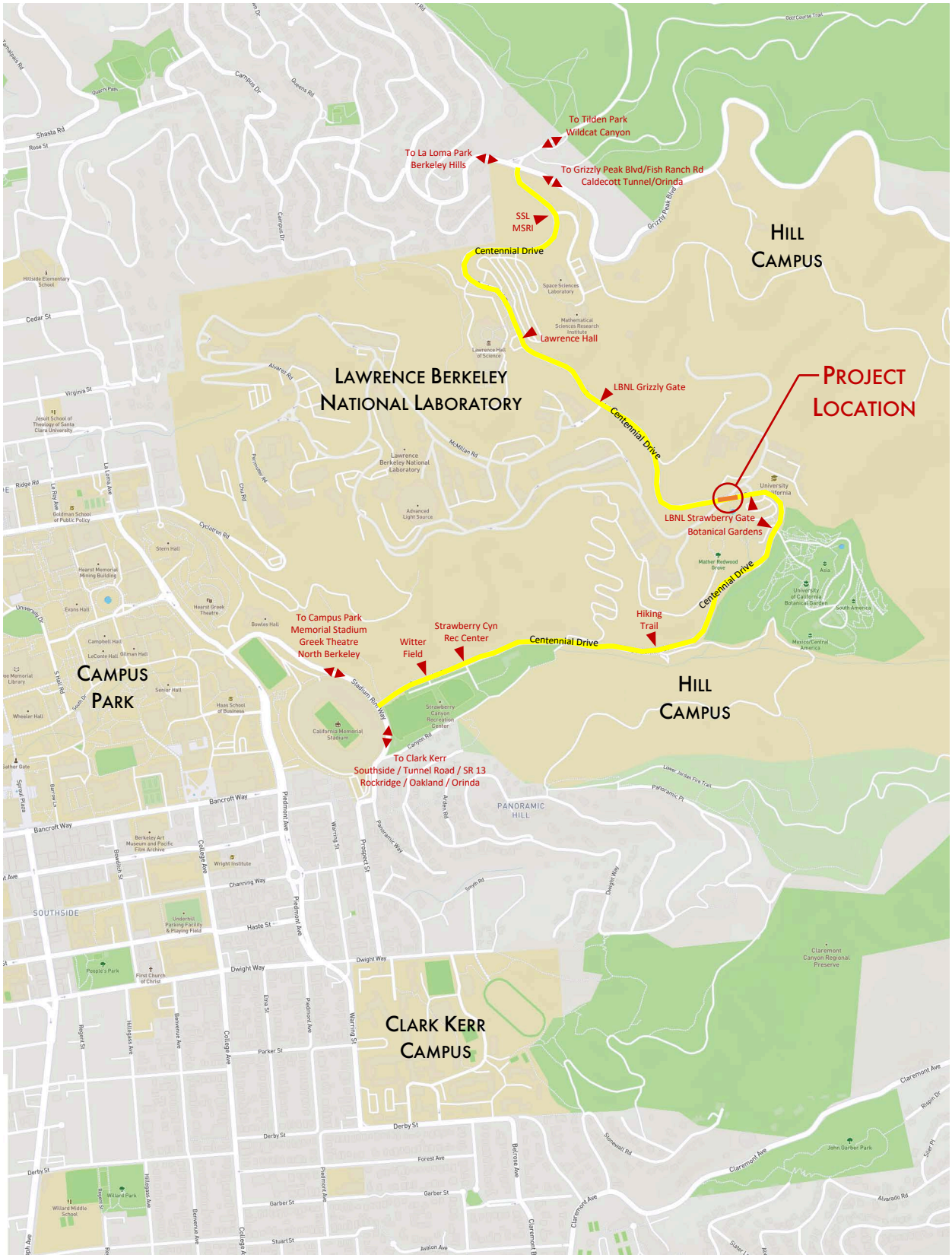
A. Relocated Short Bridge – to move the bridge out of the landslide area and reroute Lawrence Road
B. Centennial Viaduct – to replace the bridge and span the landslide area
C. Bridge Switch – to replace/ realign the bridge (angled to the north)
D. Single Intersection – to replace the existing overpass with an at-grade intersection

A detailed alternatives analysis was performed on the four selected alternatives which included evaluation of the geometry layout, geotechnical design factors, structural and seismic design criteria, construction phasing, utility impacts and overall estimated construction costs.

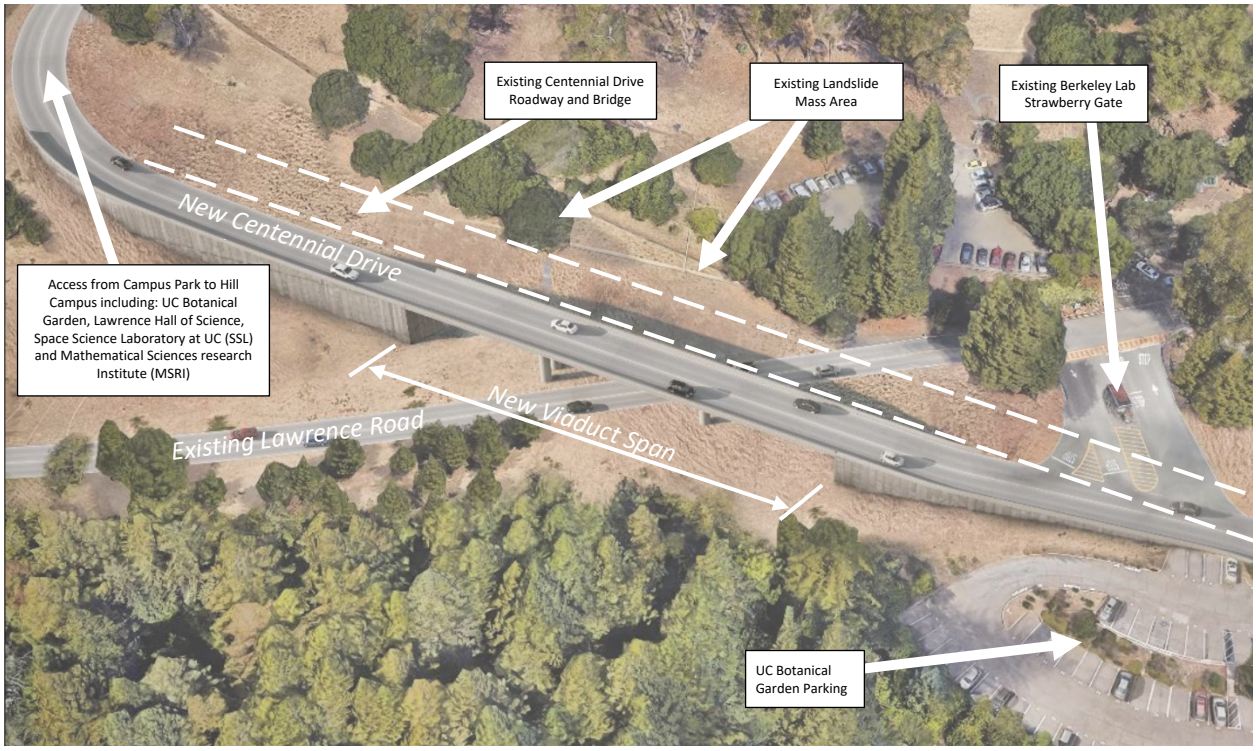
Four primary criteria were selected as the basis for evaluating and recommending a preferred alternative. These primary evaluation criteria were: cost, seismic performance, construction disruption, and long-term impacts. Other evaluation criteria, such as the structure design life, environmental impacts and utility impacts were determined to be generally equal across all the four preferred alternatives.

Based on the design details summarized in the Alternatives Analysis Report, with input from UC Berkeley and Berkeley Lab, and the collective team analysis, two alternatives, Alternative A – Bridge Relocation (to move the bridge out of the landslide area and reroute Lawrence Road) and Alternative B – Viaduct (to replace the bridge and span the landslide area), were chosen as the most feasible and cost-effective options. Given the complexity and costs associated with utility relocations, the proposed design alternatives were designed to reduce potential utility impacts wherever possible. For a variety of factors, including minimizing construction footprint impacts, the viaduct alternative – Alternative A – was preferred over the bridge relocation.

ATTACHMENT 1: LOCATION MAP



ATTACHMENT 2: PROJECT SITE MAP



ATTACHMENT 3: CAPITAL IMPROVEMENT BUDGET – BUDGET DATA

CAPITAL IMPROVEMENT BUDGET
BUDGET DATA

UNIVERSITY OF CALIFORNIA
BERKELEY CAMPUS

Centennial Bridge Improvement Project	912703	1674	CCCI: 6924 EPI: XXX
Project Title:	Project Number:	CAAN:	Cost Indexes:

A FUNDING SCHEDULE — Univ. Priority No.

Totals (000's)	Prefunded	2020-2021	2021-2022	2022-2023	2023-2024
P 800	P 800 (CF)				
W 1,374		W 1,374 (CF)			
C 25,507		C 15,181 (SG)			
E		C 10,326 (CF)			
(Tot. Proj.) $ 27,681	800	26,881	0	0	0

B FUNDING REFERENCES

	Column (1)	Column (2)	Column (3)	Total all Sources (4)
Account No:				912703
Source:	State Funds	Campus Funds		

C COSTS

		SG	CF			%
0	Site Clearance	$	$	$	$	0.0
1	Construction	12251	9617		21868	79.0
2	Exterior Utilities					0.0
4	Site Development					0.0
5	Fees	1003	1003		2006	7.2
6	A&E/PP&C		1557		1557	5.6
7	Surveys, Tests, Plans, Specs					
		55	55		110	0.4
8	Special Items	268	268		536	1.9
	SUBTOTAL	$ 13577	$ 12500	$	$ 26077	94.2
9	Contingency 7.3%	1604			1604	5.8
	TOTAL P-W-C	$ 15181	$ 12500	$	$ 27681	100.0
3	Group 2&3 Equipment					0.0
	TOTAL PROJECT	$ 15181	$ 12500	$	$ 27681	
	Available Funding					
	Anticipated Surplus (Deficit)	$	$	$	$	

D FINANCING

State Funds (AB 94)	$ 15,181,000
Campus Funds	$ 12,500,000
TOTAL	$ 27,681,000

E STATUS OF PROJECT:

Name:	Shannon Holloway	Signature:		Budget No.	
Title:	Director	Title:	Director, Capital Projects	Date	
Prepared By:	C.Tsang	Approved for Campus, Date:	01/06/2020	Orig Date	12/13/2019
Program:	Fiscal:	Signature:		Revised	
Cost:		Title:			
		Approved AVP-PPC, Date:			

Page 1 of 2

ATTACHMENT 3: CAPITAL IMPROVEMENT BUDGET – ANALYTICAL DATA

CAPITAL IMPROVEMENT BUDGET
ANALYTICAL DATA

UNIVERSITY OF CALIFORNIA
BERKELEY CAMPUS

Centennial Bridge Improvement Project	912703	1674	CCCI: 6924 EPI: XXX
Project Title:	Project Number:	CAAN:	Cost Indexes:

F ANALYTICAL DATA

	Column (1)	Column (2)	Column (3)	Total All Sources (4)
ASF per PPG 12/19	ASF	ASF	ASF	ASF
ASF Current	ASF	ASF	ASF	ASF
OGSF	OGSF	OGSF	OGSF	OGSF
Ratio (ASF Current/OGSF)	to 1.00	to 1.00	to 1.00	to 1.00
Construction Cost per ASF	/ASF	/ASF	/ASF	/ASF
Construction Cost/ OGSF	/OGSF	/OGSF	/OGSF	/OGSF
Total PWC Cost per ASF	/ASF	/ASF	/ASF	/ASF
Total PWC Cost per OGSF	/OGSF	/OGSF	/OGSF	/OGSF
Gr. 2&3 Equip. Cost/ ASF	/ASF	/ASF	/ASF	/ASF

G CONSTRUCTION COST ANALYSIS

	COSTS	UNIT COSTS $/ASF	UNIT COSTS $/OGSF	%	REMARKS
• Concrete & Structure	$				
• Closing -in					
• Finishing					
• Group 1 Equipment					
a. SUBTOTAL-Gen Constr.	$	$	$		
b. HVAC					
c. Plumbing					
d. Electrical					
e. Elevators					
f. Other					• Identify
TOTAL BUILDING					
COST ONLY	$	$	$	0.0	
g. Additional Bldg. Costs					• Identify
TOTAL BUILDING +					
ADD'L COSTS	$	$	$		
h. Other Construction		Identify			
i. Other Construction		Identify			
TOTAL CONSTRUCTION					
COST	$	Same as Schedule C, Item1 (line 24) Page 1			

H NOTES:

Items included under 8.0 Special Items:

Hazardous Materials Assessment	134
Physical & Environmental Planning Srv	158
Preconstruction Services	10
Project Reviews	31
Code Compliance Fees	204
TOTAL	537

Budget No.	
Date	
Orig Date	12/13/2019
Revised	

Prepared By: C.Tsang

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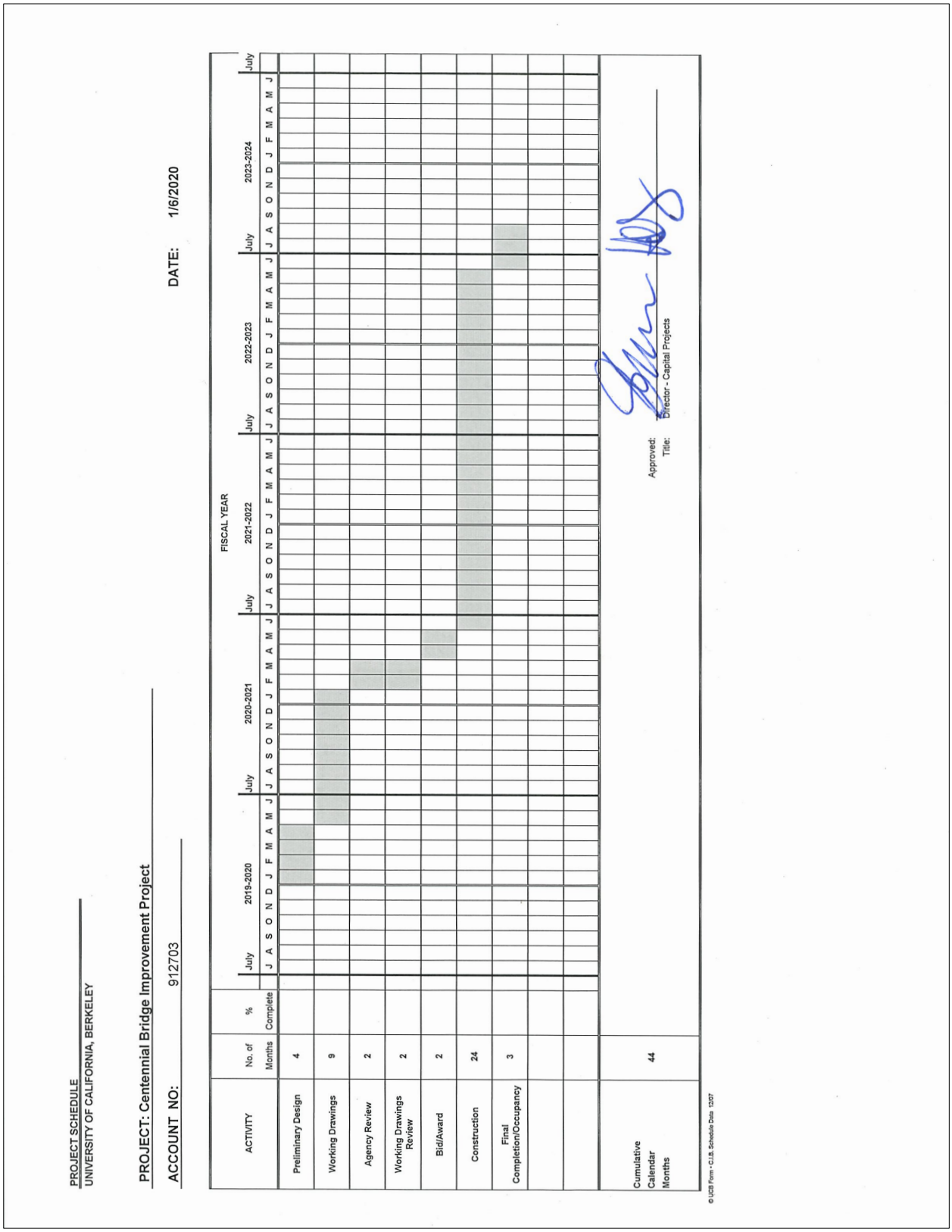
ATTACHMENT 4: SCHEDULE



PROJECT SCHEDULE
UNIVERSITY OF CALIFORNIA, BERKELEY

PROJECT: Centennial Bridge Improvement Project

ACCOUNT NO: 912703

DATE: 1/6/2020

ACTIVITY	No. of Months	% Complete	FISCAL YEAR 2019-2020 July J A S O N D J F M A M J	2020-2021 July J A S O N D J F M A M J	2021-2022 July J A S O N D J F M A M J	2022-2023 July J A S O N D J F M A M J	2023-2024 July J A S O N D J F M A M J July
Preliminary Design	4						
Working Drawings	9						
Agency Review	2						
Working Drawings Review	2						
Bid/Award	2						
Construction	24						
Final Completion/Occupancy	3						
Cumulative Calendar Months	44						

Approved:
Title: Director - Capital Projects

© UCB Form - C.I.B. Schedule Data 12/07

UNIVERSITY OF CALIFORNIA -- ENVIRONMENTAL IMPACT CLASSIFICATION

Campus: Berkeley **Project Account:** 12703A

Project Title: Centennial Bridge Improvement Project

For purposes of compliance with the California Environmental Quality Act of 1970 (CEQA), and Amended University of California Procedures for Implementation of CEQA, this project has been reviewed and initially classified as indicated below. Please check (X) as appropriate. Include project description and appropriate local map.

☐ I **EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970**
When it can be seen with certainty that there is no possibility the action will result in physical change to the environment (15061(b)(3)), or the action is specifically exempted by statute (15260-15285), the project is classified as generally exempt from CEQA.

General/Statutory Exemption: §

☑ II **CATEGORICALLY EXEMPT* --** This project falls under the indicated Class(es) of Exemption(s), none of the exeptions to the exemption apply (15300.2), and there is no significant effect on the environment. (For complete list see CEQA Guidelines Section 15300):

- ☑ Class 1: Existing facilities
- ☑ Class 2: Replacement or Reconstruction
- ☐ Class 3: New Construction of Small Structures
- ☐ Class 4: Minor Alterations to Land
- ☐ Class 6: Information Collection
- ☐ Class 11: Accessory Structures
- ☐ Class 13: Acquisitions for Conservation
- ☐ Class 16: Transfer of Ownership of Land in Order to Create Parks
- ☐ Class 17: Open Space Contracts
- ☐ Class 23: Normal Operations
- ☐ Class 25: Transfer of Ownership of Land to Preserve Open Space
- ☐ Class 30: Minor Actions to Prevent Release of Hazardous Substances
- ☐ Class 31: Historical Resource Restoration/Rehabilitation
- ☐ Class 32: Infill Projects
- ☐ Class 33: Small Habitat Restoration Projects
- ☐ Other:

***Exemptions should be supported by a memorandum to the file documenting project compliance with the specific exemption conditions and exceptions to ensure CEQA defensibility.**

☐ III **INITIAL STUDY --** This project is not statutorily or categorically exempt from CEQA; an Initial Study is to be prepared to determine if the project may have a significant effect on the environment.
☐ Stand-Alone Checklist ☐ Tiered Initial Study (15152):

☐ IV **ENVIRONMENTAL IMPACT REPORT (EIR) --** It is known that the project will have a significant effect on the environment and an EIR will be/has been prepared.
☐ Programmatic ☐ Stand-Alone (Project-Specific)
Additional project analysis:
☐ None/Findings Only ☐ Addendum ☐ Subsequent ☐ Supplement to EIR

Real Estate Transaction Type: ☐ Acquisition ☐ Sale ☐ Lease ☐ Easement ☐ License

Project Description: *[Insert brief project description, provide supporting documentation as appropriate]*

See next page for Project Description

V. Does this project conform to an approved LRDP? ☑ YES ☐ NO ☐ N/A

VI. CAMPUS ADMINISTRATION

Prepared by: T. Green Date: 1/3/2020 [sign] Timothy P Green

Local Approved by W. Hillis Date: 1/3/2020 [sign]

VII. OFFICE OF THE PRESIDENT ☐ Concur with Classification ☐ Do not Concur

Signed: Date: 1/10/2020

FORM DATE 02/2017 UCOP Form EIC

Project Description

Centennial Drive is the only public access through the Hill Campus, connecting the Campus Park to the west with major institutional facilities to the east. A 55-year old bridge along Centennial Drive is structurally unsound and located in an area prone to landslides. The project would replace this bridge by relocating Centennial Drive and constructing a new bridge structure to a parallel alignment offset 40′ to the south of the existing roadway. Centennial Drive would cross the existing Lawrence Road over a new 250′ long viaduct structure. The new structure would be designed to accommodate possible landslide movement and mitigate the effect of landslide around the support elements. Construction would utilize a cast-in-place concrete box girder post-tensioned in place. The project would not affect the alignment of Lawrence Road but would increase the length of the driveway to LBNL's Strawberry Gate. Additionally, the project would slightly alter the alignment of Centennial Drive to improve its profile grade from the existing condition and relax a tight curve on the west upslope side of the road. Upon completion of the structure, Centennial Drive would consist of two 12′ wide lanes each with a 4′ shoulder. The project may require the relocation of an existing 12″ water line and an existing 36″ storm drain pipe.

The project is categorically exempt under Class 1, Existing Facilities and Class 2, Replacement of Reconstruction. The project would be exempt under Class 1 as operational maintenance to ensure that the bridge meets current standards of public health and safety. The project is exempt under Class 2 as it involves reconstruction of an existing bridge with a new structure located in the same site and having substantially the same purpose and capacity of the structure replaced. The project is also exempt under Class 2 (c), as it involves the replacement or reconstruction of existing utility systems involving negligible expansion.