

<b>Institution</b>
Western Washington University
<b>Project Title</b>
STEM III
<b>Project Location (City)</b>
Bellingham, WA

## 1. Problem Statement

Within the College of Science and Engineering, the departments of Computer Science and Electrical Engineering are Western Washington University's (Western) fastest growing programs. In the four years prior to 2016, the number of students earning Computer Science degrees tripled to 130 degrees per academic year. In roughly the same time period, the number of students majoring in Electrical Engineering also tripled. Unfortunately, qualified students are being turned away from these majors due to a lack of adequate academic space on campus. In the 2018 spring quarter, qualified applicants to the Electrical Engineering program out-numbered available spaces within the program by two-fold. As a result, both programs are presently capped from lack of instructional and research space. Additionally, faculty hiring searches fail due to lack of physical resources to support the research and pedagogical expectations of new faculty.

In addition to Computer Science and Electrical Engineering, most of the other programs in the College of Science and Engineering are experiencing significant space shortages and, as a result, are capping growth. Students wanting to take required courses or major in these high-demand programs would benefit from additional space on campus.

## 2. Project Description

Western is proposing an approximately 50,000 gross square foot stand-alone building that will **1)** enable growth and resume student intake in the departments of Computer Science and Electrical Engineering and **2)** free up space within the existing Communications Facility and the Ross Engineering Technology Building to enable growth in the high-demand programs of Industrial Design, Materials Sciences and Plastics, and Composites Engineering. The new STEM III facility will consist primarily of teaching labs, research labs and classrooms, but will also provide some administrative and scholarly activity space.

### Programmatic Goals:

Presently at Western, highly qualified students wishing to pursue careers in Electrical Engineering and Computer Science are often frustrated by their inability to sign-up for courses or major in these programs due to a shortage of science academic space. Their frustration is amplified by the demands of employers throughout the state yearning to hire graduates in these fields.

This new STEM III facility will enable the department of Computer Science to grow its yearly production of bachelor's degrees by over 50%, from 130 in the 2015-16 academic year to over 200 degrees per year in the four years proceeding completion of STEM III. The department will similarly double the number of master's graduates produced from 10 to 20 per year.

STEM III will also enable the Electrical Engineering department to triple its present undergraduate degree production from 30 per year to 90 degrees per year, within four years after completion of the project. The

new facility will also enable the timely creation of a graduate program in Electrical Engineering. This graduate program has received considerable demand from students looking to begin careers in the field and from Washington state employers looking to fill jobs and boost the economy.

### 3. History of the Project:

The project objectives expressed in this proposal are jointly the product of the University working with the College of Science and Engineering's corporate advisory board. Western is increasingly becoming a recruitment hotbed for many of the State's primary employers of engineers and technologists. Western's corporate partners have expressed interest in funding research and instructional equipment for this STEM III project to enhance hands-on learning and help prepare students for the workforce.

Unprecedented growth in students majoring in STEM fields necessitated an urgent rethinking of the University's plans for STEM degree growth and how that will be supported over time. In support of program growth, our 2019-21 Capital Project Proposals and the priorities of the Institution are outlined below:

**STEM 1:** A stand-alone, approximately 50,000 GSF science instruction building formerly known as the Addition component of the Sciences Building Addition and Renovation project.

**STEM 2:** The Renovation of the 115,000 GSF Environmental Sciences Center to accommodate Environmental Sciences, Toxicology, Marine Sciences and Geology and components of the Energy Studies program.

**STEM 3:** A 50,000 GSF facility to accommodate student demand and growth within Western's Computer Sciences and Electrical Engineering programs.

**Classroom & Lab Upgrades:** A campus-wide program to upgrade general instructional space and specialized class-labs.

**Consolidated Academic Support Services Facility:** A freestanding building on the periphery of the campus that will accommodate non-student/academic operations. The project will free up STEM instructional space on campus and ensure that academic and student support services remain accessible in the campus core.

### 4. University programs addressed or encompassed by the project

The Electrical Engineering and Computer Science programs at Western are accredited by the Accreditation Board for Engineering and Technology (ABET). The programs are primary facilitators of interdisciplinary activities across the College of Science and Engineering and the campus as a whole. Beyond the campus, senior student collaborations with industry partners are the norm and Western is well known amongst industry partners for our ability to produce the most eminently employable graduates.

Student learning within the departments of Electrical Engineering and Computer Science is increasingly interdisciplinary in nature with cross collaborations in the development, design, and application of circuits, devices, and firmware for embedded systems and microcontrollers, communications, controls, and digital signal processing.

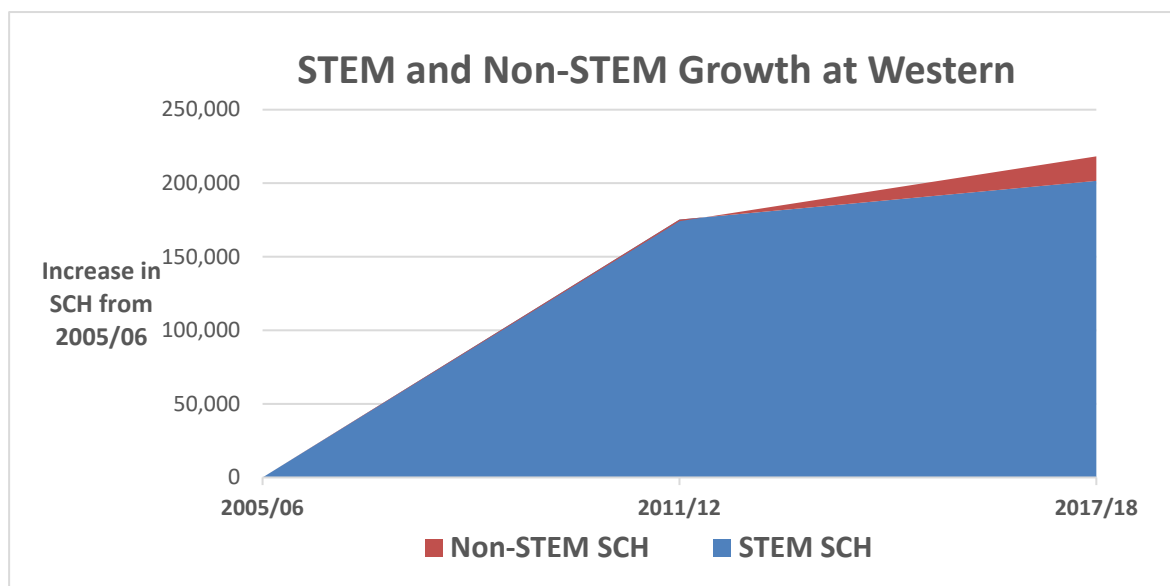
The Energy Concentration within Electrical Engineering includes a combination of advanced electrical engineering courses and interdisciplinary courses in the sciences, economics, policies, and the environment. Students engage in several projects in these courses that regularly require collaboration with faculty in Western's Institute for Energy Studies. The Institute for Energy Studies is a unique, interdisciplinary program with multi-college collaboration from ten separate departments within the Huxley College of the Environment, the College of Science and Engineering, and the College of Business and Economics.

## 5. Integral to Achieving Statewide Policy Goals:

Provide degree targets, and describe how the project promotes improvement on 2015-16 degree production totals in the OFM four-year public dashboard.

- a. Indicate the number of bachelor's degrees awarded at the close of the 2015-16 academic year.
  - 3,317 bachelor degrees were awarded at the close of the 2015-16 academic year.
- b. Indicate the number of bachelor's degrees awarded in high-demand fields at the close of the 2015-16 academic year.
  - 1,137 bachelor degrees were awarded in high-demand fields at the close of the 2015-16 academic year.
- c. Indicate the number of advanced degrees awarded at the close of the 2015-16 academic year.
  - 328 advanced degrees were awarded at the close of the 2015-16 academic year.

Non-STEM Student Credit Hours (SCH) continue to comprise the largest component of Western's academic programming; however, it is not where Western is growing. The diagram below employs a zero-base to best illustrate the dramatic shift in student demand in STEM disciplines since 2005-06. In 2017-18, STEM credit hours comprised 26% of all SCH at Western, yet it also accounted for almost all of Western's SCH growth.



**6. Describe how the project promotes access for underserved regions and place-bound adults through distance learning and/or university centers.**

Western reaches place-bound residents in underserved regions through the “Western on the Peninsulas”. The Peninsulas program is administered at Western’s Center at Olympic College in Poulsbo, and through satellite locations at Peninsula College and Everett Community College. Additionally, Western has academic programs serving students on the Olympic and Kitsap Peninsulas. We offer a BA program in Environmental Policy, a BS in Environmental Science and a BA in Business Administration. Western’s cybersecurity program at Poulsbo expands access by enabling graduates of the Kitsap-Olympic region’s community colleges, Olympic College and Peninsula College, to complete Western’s BS in Computer and Information Systems Security (CISS) without relocating to Bellingham.

To facilitate these programs, distance-learning technology is integrated into our active learning spaces and will be incorporated into this STEM III project. This technology allows all on-campus courses to be available in real-time to off-site place-bound students in these satellite locations. Conversely, courses taught in those locations will be made available to students on the Bellingham campus, creating a rich, diverse, and interactive learning environment that brings together our on-campus students with our place-bound students and adult learners in these satellite locations. It will also facilitate communications between our faculty and staff across these different locations.

**7. Integral to Campus/Facilities Master Plan:**

- a. Western’s Institutional Master Plan (IMP), approved by Western’s Board of Trustees in October 2001 and adopted as an amendment to the Western Washington University Neighborhood Plan by the Bellingham City Council in September 2001, will guide development of the University’s main campus until it reaches a capacity of 4,000,000 overall gross square feet of building space. The University is currently at just less than 3,300,000 gross square feet.
- b. The Institutional Master Plan<sup>1</sup> begins with the Institution’s heart and mission of further developing the academic core. Established as Western’s highest intensity use, this area is a conceptual 10-minute walk-zone situated deep within the campus. It is strongly pedestrian focused; imbued with a sense of sanctuary; and protected from off-campus influences. While the IMP will increase the overall existing built density, the academic core absorbs much of that planned growth by in-fill and modernization to accommodate all of the University’s main campus academic needs. It does this while retaining the desirable characteristics that define Western as it is today. Those characteristics include the continuity of pedestrian flow, the strong connections of the built and natural environment, the sense of a “community of learners,” the visual portals to the mountains, water, and adjacent neighborhoods, and the breakdown of scale. The STEM III building will be located within the academic core at a location near the existing science facilities and where service vehicles can easily access the building. The facility is located in IMP District 11 with land use classifications of Academic, Administrative/Support, and Open Space. (See Appendix D).

**8. Integral to institution’s Academic Programs Plan:**

This project is consistent with and supportive of the Institution’s Academic Programs Plan. Western continues to be rooted in an active teaching and learning environment with a liberal arts and sciences

---

<sup>1</sup> The Western Washington University Institutional Master Plan provides for capacity of growth but leaves project sequencing to the academic plan.

foundation with robust co-curricular, internship, research, creative, and community engagement opportunities. STEM III will continue Western's progress in ensuring that students can complete their degrees in a timely and qualitative manner and that education is provided in areas of high student and employment demand.

### **9. Suitability of Existing Space:**

The space assigned in the two departments is presently of varying quality. The larger concern is the shortage of quality STEM instructional space on campus, as this limits program growth in terms of student intake and faculty-recruitment. The physical separation of computer sciences and electrical engineering, which as described above would benefit from collaborative research, greatly limits the ability to facilitate natural and regular interactions between the two departments as well as any potential for resource leveraging. The Electrical Engineering department is most impacted by its present space situation in that the relatively small amount of space the department occupies, in the already heavily utilized Ross Engineering Technology Building, is largely ill-suited to the discipline.

The space currently assigned to the Computer Science Department in the Communications Facility on campus, while in relatively good condition, is inadequately sized to accommodate the demand for new students and new faculty hires. As stated above, both departments are presently capped in terms of student enrollment growth, and this is chiefly a result of spacing pressures.

### **10. Availability of Space/Utilization on Campus:**

Utilization of classrooms and class-labs remains high at Western (see Appendix D). Of concern is the extent to which class lab utilization, particularly in STEM disciplines, are very high. To better illustrate the situation, of the 126 class labs at Western in the Fall of 2017, twenty-seven class labs operated at greater than 16 Student Credit Hours (SCH) per week per seat; fifteen class labs operated at greater than 20 SCH per week per seat; six class-labs operated at greater than 30 SCH per week per seat and two (Chemistry) labs operated in excess of 40 SCH per week per seat with the highest utilization for a class-lab being 47 SCH. This situation presents access and safety issues and drives our request to expand the availability of STEM instructional space by adding much needed teaching and research labs.

All but one of the departments in Western's College of Science and Engineering are presently capped in terms of student enrollment growth. This is primarily due to the lack of space available on campus. The lack of instructional and research space precludes student intake into majors and the lack of research and administrative space limits Western's ability to compete in the higher education market place in serving students by recruiting and retaining high quality faculty.

# STEM III

## Appendix Contents

- A. Office of Financial Management Reports (CBS002)  
Project Cost Summary/C100
- B. Environmental Studies Facility *Space Needs Assessment Summary*  
Prepared by Ira Fink and Associates, Inc.
- C. Results Washington – Goal 1: World Class Education
- D. Availability of Space Table
- E. Program-related Space Allocation Assignable Square Feet Template

# **Appendix A**

## Capital Project Request

2019-21 Biennium

\*

Version: SV 2019-21 Capital Budget Request

Report Number: CBS002

Date Run: 8/7/2018 1:38PM

Project Number: 30000872

Project Title: STEM III

Project Class: Program

**Description**

Starting Fiscal Year: 2020

Agency Priority: 3

**Project Summary**

Western is proposing an approximately 50,000 GSF stand-alone building that will 1) enable growth and resume student intake in both the Computer Science and Electrical Engineering and 2) free up space within the existing Communications Facility and the Ross Engineering Technology Building to enable growth in the high-demand programs of Industrial Design, Materials Sciences and Plastics, and Composite Engineering. The new STEM II facility would consist of teaching labs, research labs and classrooms, and some administrative and scholarly activity space. Western is proposing \$6.5 million in State funding in the 2019-21 biennium for pre-design and design.

**Project Description**

Within the College of Science and Engineering, the Computer Science and Electrical Engineering are Western's fastest growing programs. In the four years prior to 2016, the number of students earning Computer Science degrees tripled to 130 degrees per academic year. During roughly the same period, the number of students majoring in Electrical Engineering also tripled. Unfortunately, qualified students are being turned away from these majors due to a lack of adequate academic space on campus. In the 2018 spring quarter, qualified applicants to the Electrical Engineering program out-numbered available spaces within the program by two-fold. As a result, both programs are presently capped from lack of instructional and research space. Additionally, faculty hiring searches fail due to lack of physical resources to support the research and pedagogical expectations of new faculty.

In addition to Computer Science and Electrical Engineering, most of the other programs in the College of Science and Engineering are experiencing significant space shortages and, as a result, are capping growth. Students wanting to take required courses or major in these high-demand programs would benefit from additional space on campus.

Western is proposing an approximately 50,000 gross square foot stand-alone building that will **1)** enable growth and resume student intake in the departments of Computer Science and Electrical Engineering and **2)** free up space within the existing Communications Facility and the Ross Engineering Technology Building to enable growth in the high-demand programs of Industrial Design, Materials Sciences and Plastics, and Composites Engineering. The new STEM III facility will consist primarily of teaching labs, research labs and classrooms, but will also provide some administrative and scholarly activity space.

Currently, Western's highly qualified students wishing to pursue careers in Electrical Engineer and Computer Science are often frustrated by their inability to sign up for courses or major in these programs due to a shortage of science academic space. The frustration is amplified by the demands of employers throughout the state needing to hire graduates in these fields.

The proposed STEM III facility will work in concert with Statewide Policy goals by enabling the Computer Science department to increase bachelor's degrees by over 50 percent, from 130 in the 2015-16 academic year to over 200 degrees per year in the four years proceeding completion of STEM III. The department will also double the number of master's graduates produced from 10 to 20 per year. STEM III will enable the Electrical Engineering department to triple its present undergraduate degree production from 30 to 90 degrees per year, within four years after completion of the project.

STEM III will be located within the academic core at a location near the existing science facilities and where service vehicles can easily access the building, fully supporting the Institutional Master Plan's goals and objectives. Distance-learning technology will be incorporated in this STEM III project, to serve place-bound students in underserved areas of the state.

The proposed STEM III project would begin August 2019 with completion in January 2023.

**Location**

City: Bellingham

County: Whatcom

Legislative District: 040



# 380 - Western Washington University

## Capital Project Request

2019-21 Biennium

\*

Version: SV 2019-21 Capital Budget Request

Report Number: CBS002

Date Run: 8/7/2018 1:38PM

Project Number: 30000872

Project Title: STEM III

Project Class: Program

### Description

#### Project Type

New Facilities/Additions (Major Projects)

New Facility: Yes

#### How does this fit in master plan

The STEM III building will be located within the academic core at a location near the existing science facilities and where service vehicles can easily access the building. The facility is located in IMP District 11 with land use classifications of Academic, Administrative/Support, and Open Space.

### Funding

Acct Code	Account Title	Estimated Total	Expenditures		2019-21 Fiscal Period	
			Prior Biennium	Current Biennium	Reappropriations	New Appropriations
057-1	State Bldg Constr-State	66,500,000				6,500,000
	<b>Total</b>	<b>66,500,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,500,000</b>

		Future Fiscal Periods			
		2021-23	2023-25	2025-27	2027-29
057-1	State Bldg Constr-State	60,000,000			
	<b>Total</b>	<b>60,000,000</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Operating Impacts

No Operating Impact

<u>Parameter</u>	<u>Entered As</u>	<u>Interpreted As</u>
Biennium	2019-21	2019-21
Agency	380	380
Version	SV-A	SV-A
Project Classification	*	All Project Classifications
Capital Project Number	30000872	30000872
Sort Order	Project Class	Project Class
Include Page Numbers	Y	Yes
For Word or Excel	Y	Y
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

**STATE OF WASHINGTON**  
**AGENCY / INSTITUTION PROJECT COST SUMMARY**

Agency	Western Washington University	
Project Name	STEM III	
OFM Project Number		

Contact Information		
Name	Rick Benner, FAIA	
Phone Number	(360) 650-3550	
Email	<a href="mailto:rick.benner@wwu.edu">rick.benner@wwu.edu</a>	

Statistics			
Gross Square Feet	50,000	MACC per Square Foot	\$682
Usable Square Feet	30,000	Escalated MACC per Square Foot	\$766
Space Efficiency	60.0%	A/E Fee Class	A
Construction Type	Laboratories (Research)	A/E Fee Percentage	7.67%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Alternative Public Works Project	Yes	Art Requirement Applies	Yes
Inflation Rate	3.12%	Higher Ed Institution	Yes
<a href="#">Sales Tax Rate %</a>	8.70%	Location Used for Tax Rate	Bellingham
Contingency Rate	5%		
Base Month	June-18		
Project Administered By	Agency		

Schedule			
Predesign Start	August-19	Predesign End	March-20
Design Start	April-20	Design End	April-21
Construction Start	August-21	Construction End	January-23
Construction Duration	17 Months		

Green cells must be filled in by user

Project Cost Estimate			
Total Project	<b>\$59,353,189</b>	Total Project Escalated	<b>\$66,499,914</b>
		Rounded Escalated Total	<b>\$66,500,000</b>

**STATE OF WASHINGTON**  
**AGENCY / INSTITUTION PROJECT COST SUMMARY**

Agency	Western Washington University	
Project Name	STEM III	
OFM Project Number		

**Cost Estimate Summary**

Acquisition			
Acquisition Subtotal	\$0	Acquisition Subtotal Escalated	\$0

Consultant Services			
Predesign Services	\$460,000		
A/E Basic Design Services	\$1,894,908		
Extra Services	\$1,196,000		
Other Services	\$1,777,335		
Design Services Contingency	\$266,412		
Consultant Services Subtotal	\$5,594,656	Consultant Services Subtotal Escalated	\$6,110,040

Construction			
GC/CM Risk Contingency	\$975,000		
GC/CM or D/B Costs	\$6,235,000		
Construction Contingencies	\$1,705,000	Construction Contingencies Escalated	\$1,920,853
Maximum Allowable Construction Cost (MACC)	\$34,100,000	Maximum Allowable Construction Cost (MACC) Escalated	\$38,283,410
Sales Tax	\$3,742,305	Sales Tax Escalated	\$4,204,454
Construction Subtotal	\$46,757,305	Construction Subtotal Escalated	\$52,531,503

Equipment			
Equipment	\$4,671,500		
Sales Tax	\$406,421		
Non-Taxable Items	\$0		
Equipment Subtotal	\$5,077,921	Equipment Subtotal Escalated	\$5,720,786

Artwork			
Artwork Subtotal	\$191,417	Artwork Subtotal Escalated	\$191,417

Agency Project Administration			
Agency Project Administration Subtotal	\$1,526,891		
DES Additional Services Subtotal	\$0		
Other Project Admin Costs	\$0		
Project Administration Subtotal	\$1,526,891	Project Administration Subtotal Escalated	\$1,720,196

Other Costs			
Other Costs Subtotal	\$205,000	Other Costs Subtotal Escalated	\$225,972

**Project Cost Estimate**

Total Project	<b>\$59,353,189</b>	Total Project Escalated	<b>\$66,499,914</b>
		Rounded Escalated Total	<b>\$66,500,000</b>

## Cost Estimate Details

Acquisition Costs					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	\$0		NA	\$0	

Green cells must be filled in by user

## Cost Estimate Details

Consultant Services				
Item	Base Amount	Escalation Factor	Escalated Cost	Notes
<b>1) Pre-Schematic Design Services</b>				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	\$460,000			
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$460,000</b>	<b>1.0580</b>	<b>\$486,680</b>	Escalated to Design Start
<b>2) Construction Documents</b>				
A/E Basic Design Services	\$1,894,908			69% of A/E Basic Services
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$1,894,908</b>	<b>1.0744</b>	<b>\$2,035,890</b>	Escalated to Mid-Design
<b>3) Extra Services</b>				
Civil Design (Above Basic Svcs)	\$55,000			
Geotechnical Investigation	\$28,000			
Commissioning	\$28,000			
Site Survey	\$17,000			
Testing	\$40,000			
LEED Services	\$22,000			
Voice/Data Consultant	\$17,000			
Value Engineering	\$12,000			
Constructability Review	\$12,000			
Environmental Mitigation (EIS)	\$45,000			
Landscape Consultant	\$45,000			
LCCA	\$85,000			
Acoustical Consultant	\$50,000			
Travel & Per Diem	\$120,000			
Renderings & Models	\$5,000			
Document Reproduction	\$10,000			
Advertising	\$5,000			
AV Consultant	\$20,000			
Elevator Consultant	\$10,000			
Wind Tunnel Study	\$10,000			
Laboratory Consultant	\$75,000			
Interior Design Consultant	\$35,000			
Security Consultant	\$25,000			
Code Consultant	\$15,000			
Envelope Consultant	\$30,000			
Displaced Functions Consultant	\$380,000			
<b>Sub TOTAL</b>	<b>\$1,196,000</b>	<b>1.0744</b>	<b>\$1,284,983</b>	Escalated to Mid-Design
<b>4) Other Services</b>				
Bid/Construction/Closeout	\$851,335			31% of A/E Basic Services
HVAC Balancing	\$80,000			
Staffing				
On-Site Reps.	\$500,000			
Commissioning	\$100,000			

Scheduling Consultant	\$46,000			
Construction Additional A/E	\$200,000			
<b>Sub TOTAL</b>	<b>\$1,777,335</b>	<b>1.1266</b>	<b>\$2,002,347</b>	Escalated to Mid-Const.
<b>5) Design Services Contingency</b>				
Design Services Contingency	\$266,412			
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$266,412</b>	<b>1.1266</b>	<b>\$300,140</b>	Escalated to Mid-Const.
<b>CONSULTANT SERVICES TOTAL</b>	<b>\$5,594,656</b>		<b>\$6,110,040</b>	

Green cells must be filled in by user

## Cost Estimate Details

Construction Contracts				
Item	Base Amount	Escalation Factor	Escalated Cost	Notes
<b>1) Site Work</b>				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Overall	\$5,500,000			
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$5,500,000</b>	<b>1.1023</b>	<b>\$6,062,650</b>	
<b>2) Related Project Costs</b>				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$0</b>	<b>1.1023</b>	<b>\$0</b>	
<b>3) Facility Construction</b>				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems				
D40 - Fire Protection Systems				
D50 - Electrical Systems				
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Overall	\$28,600,000			
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$28,600,000</b>	<b>1.1266</b>	<b>\$32,220,760</b>	
<b>4) Maximum Allowable Construction Cost</b>				
<b>MACC Sub TOTAL</b>	<b>\$34,100,000</b>		<b>\$38,283,410</b>	

<b>5) GCCM Risk Contingency</b>				
GCCM Risk Contingency	\$975,000			
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$975,000</b>	<b>1.1266</b>	<b>\$1,098,435</b>	
<b>6) GCCM or Design Build Costs</b>				
GCCM Fee	\$1,900,000			
Bid General Conditions	\$3,850,000			
GCCM Preconstruction Services	\$485,000			
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$6,235,000</b>	<b>1.1266</b>	<b>\$7,024,351</b>	
<b>7) Construction Contingency</b>				
Allowance for Change Orders	\$1,705,000			
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$1,705,000</b>	<b>1.1266</b>	<b>\$1,920,853</b>	
<b>8) Non-Taxable Items</b>				
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$0</b>	<b>1.1266</b>	<b>\$0</b>	
<b>Sales Tax</b>				
<b>Sub TOTAL</b>	<b>\$3,742,305</b>		<b>\$4,204,454</b>	
<b>CONSTRUCTION CONTRACTS TOTAL</b>				
	<b>\$46,757,305</b>		<b>\$52,531,503</b>	

Green cells must be filled in by user



## Cost Estimate Details

Equipment				
Item	Base Amount	Escalation Factor	Escalated Cost	Notes
E10 - Equipment	\$3,171,500			
E20 - Furnishings	\$1,500,000			
F10 - Special Construction				
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$4,671,500</b>	<b>1.1266</b>	<b>\$5,262,912</b>	
<b>1) Non Taxable Items</b>				
Other				
Insert Row Here				
<b>Sub TOTAL</b>	<b>\$0</b>	<b>1.1266</b>	<b>\$0</b>	
<b>Sales Tax</b>				
<b>Sub TOTAL</b>	<b>\$406,421</b>		<b>\$457,874</b>	
<b>EQUIPMENT TOTAL</b>	<b>\$5,077,921</b>		<b>\$5,720,786</b>	

Green cells must be filled in by user

## Cost Estimate Details

Artwork					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Project Artwork	\$0				0.5% of Escalated MACC for new construction
Higher Ed Artwork	\$191,417				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	\$191,417		NA	\$191,417	

Green cells must be filled in by user

## Cost Estimate Details

Project Management					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Agency Project Management	\$1,526,891				
Additional Services					
Other					
Insert Row Here					
PROJECT MANAGEMENT TOTAL	\$1,526,891		1.1266	\$1,720,196	

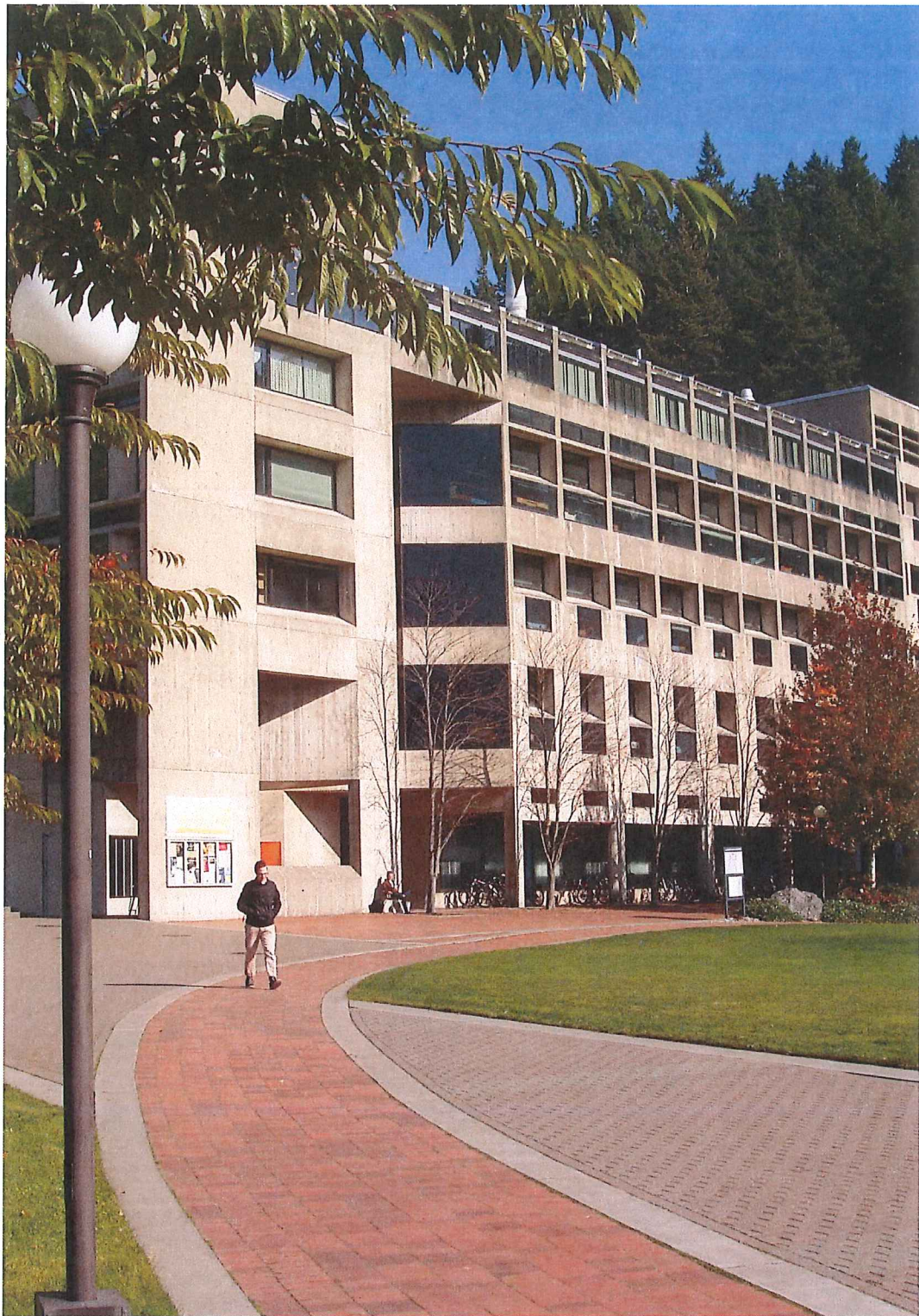
Green cells must be filled in by user

## Cost Estimate Details

Other Costs					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Mitigation Costs					
Hazardous Material					
Remediation/Removal					
Historic and Archeological Mitigation					
Plan Review	\$125,000				
M & O Assist	\$80,000				
OTHER COSTS TOTAL	\$205,000		1.1023	\$225,972	

Green cells must be filled in by user

# **Appendix B**



Ira Fink and Associates, Inc.

Environmental Studies Center. The Environmental Studies Center has 111,145 gross square feet and 63,526 assignable square feet.



## EXECUTIVE SUMMARY

### Space Needs Assessment

- This study is a broad-based, conceptual space needs assessment of the College of Sciences and Technology and the Huxley College of the Environment academic units at Western Washington University.
  - One premise of the study is that enrollment growth at WWU will be slow and total campus enrollment will remain at approximately 15,000.

### Primary Findings

#### *Huxley College of the Environment*

- Of the two colleges, the primary finding of the study is that the space needs of Huxley College require the most immediate attention.
  - **Facilities:** Huxley College space needs have substantially changed since the College was founded and facilities were built 40 years ago.
  - **Space:** Both Huxley College departments are consistently positioned in the lowest range of amount of space per faculty, per student, and per research unit among the WWU science and technology departments.
  - **Class Laboratories:** Moreover, the instructional laboratory spaces of the Huxley College units are in the poorest condition of the two colleges and in the most need of attention.

#### *College of Sciences and Technology*

- Among the College of Sciences and Technology (CST) units, four of the seven departments and both research units have relatively new space. Biology, Chemistry, Computer Science, Physics and Astronomy, AMSEC, SMATE are in recently renovated or otherwise relatively new space. These units have both contemporary space and space largely adequate for their needs. Geology needs better space. Mathematics needs both better space and more space. Engineering Technology requires a total review of its space and a plan to provide appropriate space for its newly designated engineering programs.

### Space for Scientific Instrumentation

- There is a collaborative desire for additional or replacement instrumentation since the instruments and their centers serve both disciplinary and interdisciplinary objectives.
  - To help guide this activity, an overall WWU plan for new and replacement instrumentation is needed.



### **Space Projections**

- To test alternatives, a series of eight separate space projection estimates, identified as Scenarios 1 through 8, were tabulated.
  - For the purposes of this study, Scenario 3 was chosen as a plausible planning projection. In Scenario 3, the faculty growth is based upon the Provost's estimates of growth from 2013 to 2018 or one new faculty member per department, whichever is greater. Faculty growth counts add one faculty member per department from 2018 to 2023.
- In Scenario 3, space needs for Huxley College would grow by 32,014 ASF from its existing 36,788 ASF in 2013 to 68,802 ASF in 2018 and an additional 3,106 ASF to 71,908 ASF in 2023.
- Space needs for CST would grow by 37,229 ASF from 231,599 ASF in 2013 to 268,828 ASF in 2018 and an additional 15,680 ASF to 284,508 ASF in 2023.
- Space needs for Scientific Technical Services would grow by an estimated 1,800 ASF based upon instrument requirements, or a growth from 7,337 ASF to 9,137 ASF.

### **Summary Report**

- This summary report is accompanied by three separate, standalone appendices, which together constitute an omnibus indicators report.
  - Appendix A is an expanded narrative, which includes a listing of space needs as identified by each department or unit.
  - Appendix B provides supplemental data, including detailed space benchmark analysis.
  - Appendix C presents the WWU room-by-room space database, both by building and by department.



# Appendix C



# GOAL 1: WORLD-CLASS EDUCATION

Expecting every child to receive a world-class education that prepares him or her for a healthy and productive life, including success in a job or career, in the community and as a lifelong learner

GOAL TOPIC	ACCESS			SUCCESS		
	All Washingtonians have access to education that prepares them to transition to elementary, middle, high school, postsecondary, career and lifelong learning opportunities			Washington's public schools provide innovative, high-quality opportunities and tools for every student to attain 21 <sup>st</sup> century skills to succeed in school, job, career and community		
SUB TOPIC	EARLY LEARNING	K-12	POSTSECONDARY	EARLY LEARNING	K-12	POSTSECONDARY
OUTCOME MEASURE	1.1. Increase the percentage of children enrolled in high-quality early learning programs from 2013 baseline to targets per program	1.2 Increase the percentage of schools rated exemplary or very good on the Washington School Achievement Index by 10% by 2017	1.3 Increase the percentage of population enrolled in certificate, credential, apprenticeship and degree programs from 13% in 2012 to 24.8% in 2023	2.1 Increase the percentage of children entering kindergarten who demonstrate they are ready by 2% per year through 2015	2.2 Increase the percentage of K-12 students who score proficient or better on statewide exams and graduate college- and career-ready from high school by 2% from 2013 to 2014	2.3 Increase attainment of certificates, credentials, apprenticeships and degrees from 72,000 to 149,000 by 2023
LEADING INDICATORS	1.1.a. Increase state-funded preschool enrollment slots from the 2012-2013 baseline of 8,391 slots to 22,807 slots by 2018-19 school year to serve 100% of eligible children whose families choose to enroll	1.2.a. Increase percentage of children enrolled in state-funded full-day kindergarten from 22% to 100% by 2017-18 school year	1.3.a. Increase number of students enrolled in STEM and identified high-demand employment programs in public 4-year colleges from 31,282 to 32,642 by 2016-17	2.1.a. Increase by 2% each year, 2012-13 through 2015, the percentage of children who demonstrate readiness skills for kindergarten in these areas: social-emotional, physical, language, cognitive, literacy, and math	2.2.a. Increase percentage of students proficient in 4 <sup>th</sup> grade reading and writing, 7 <sup>th</sup> grade math and 8 <sup>th</sup> grade science by 2% from 2013 to 2014	2.3.a. Increase number of graduates in STEM and identified high-demand employment programs in public 4-year colleges from 10,726 to 11,661 by 2017-18
	1.1.b. Increase number of children served in licensed child care settings and preschools participating in Washington's Quality Rating and Improvement System (QRIS) from December 2013 baseline of 60,719 children to 87,144 children by December 2015	1.2.b. Increase number of high school students who access high-quality online learning by 10% per year from 2013 to 2017	1.3.b. Increase the number of students who are enrolled in academic transfer STEM courses in public community and technical colleges from 41,936 in 2012-13 to 42,775 by 2016-17	2.1.b. Increase number of early learning providers who achieve level 3 or above in Early Achievers (voluntary quality rating and improvement system) from 2013 baseline of 253 programs to 1,471 programs by December 2015	2.2.b. Increase percentage of students in a cohort who meet standards on all high school exit exams in or by 10 <sup>th</sup> grade by 2% from 2013 to 2014	2.3.b. Increase the number of graduates in academic transfer STEM in public community and technical colleges from 1,987 in 2012-13 to 2,027 in 2016-17
	1.1.c. Increase percentage of infants and toddlers, who due to developmental delays receive early intervention services from 2013 baseline of 2.2% to national average of 2.4% by December 2015	1.2.c. Increase access to effective dropout prevention programs offered by school districts and available to students from X to X by 20XX	1.3.c. Increase the number of students who are enrolled in high employer demand professional-technical programs in public community and technical colleges from 40,759 in 2012-13 to 41,574 by 2016-17		2.2.c. Increase percentage of high school students who graduate from high school in 4 years and 5 years by 2 percentage points per year from 2013 to 2018	2.3.c. Increase the number of students earning awards in high employer demand professional-technical programs in the public community and technical college system from 12,539 in 2012-13 to 12,790 in 2016-17
	1.1.d. Increase the STEM math and science training opportunities for early learning professionals by 20% from 2013 baseline total by June 2015	1.2.d. Increase percentage of low-performing students receiving learning assistance intervention from X to X by 20XX	1.3.d. Increase percentage of eligible students who sign up for College Bound program from 80% to 92% by 2017		2.2.d. Reduce opportunity gaps for all students through proficiency in reading, math, science (including biology for high school) by 2 percentage points from 2013 to 2014	2.3.d. Increase the percent of adult basic education and English as a second language students in public community and technical colleges who transition to pre-college or college-level within 2 years from 12% in 2010-11 to 15% in 2016-17
	1.1.e. Increase by 10% the number of parents/families who have access to support through voluntary home visiting services from June 2013 baseline by June 2015	1.2.e. Increase percentage of public schools that provide access to all required subject areas (arts, world languages, career and technical education, fitness, social studies) from X to X by 20XX	1.3.e. Increase percentage of eligible students who receive State Need Grant from 70% in 2013 to 85% in 2017		2.2.e. Decrease percentage of recent high school graduates enrolled in pre-college or remedial courses in college from 40% to 35% by 2017	2.3.e. Increase percentage of postsecondary graduates from 4-year colleges who during the 4th quarter after graduation are either enrolled in postsecondary education or training or are employed in Washington from 80% to 82% in 2016-17
<div><div>Governor's Goal Council</div><ul style="list-style-type: none"><li>African American Affairs Commission – Ed Prince</li><li>Arts Commission – Lisa Jaret</li><li>Center for Childhood Deafness &amp; Hearing Loss – Richard Hauan</li><li>Community &amp; Technical Colleges – Marty Brown</li><li>Council of Presidents – Paul Francis</li><li>Early Learning – Bette Hyde</li><li>Education Ombuds – Stacy Gillett</li><li>Office of Financial Management – Paula Moore</li><li>Policy – Marcie Maxwell</li><li>Results Washington – KayLyne Newell</li><li>School for the Blind – Dean Stenehjem</li><li>State Board of Education – Ben Rarick</li><li>Student Achievement Council – Gene Sharratt</li><li>Superintendent of Public Instruction – Alan Burke</li><li>Workforce Training &amp; Education Coord. Bd. – Eleni Papadakis</li></ul></div>						
		1.2.g. Increase percentage of National Board certified teachers who teach in a high-poverty school by 10% per year from 2013 to 2017	1.3.f. Increase number of families saving for postsecondary education and training expenses using the Guaranteed Education Tuition (GET) from 152,000 in 2012 to 182,000 in 2017	<div><div>NOTE: Data with a purple dotted line will be recalibrated after Common Core test results are available in 2015</div><div>Data separated by Native American, Asian, Pacific Islander, African American, Hispanic, Caucasian, English Language Learners, Students with Disabilities, Low Income</div></div>		
		1.2.h. Increase percentage of first-year teachers with active, qualified mentor by 10% per year from 2013 to 2017	1.3.g. Increase project-based, career, workplace, community learning opportunities that provide STEM and 21 <sup>st</sup> century skills from X to X by 20XX		2.2.f. Increase number of K-12 schools recognized as innovative through meeting criteria listed in statute from 34 to 59 by 2017	2.3.f. Increase the percentage of postsecondary graduates from public community and technical colleges who during the 3rd quarter after graduation are either enrolled in postsecondary education or training or are employed in Washington from 80% in 2012-13 to 82% by 2016-17
		1.2.i. Increase percentage of sign language interpreters meeting newly established state performance standards from 33% in 2012-13 school year to 100% in 2016-17 school year	1.3.h. Increase the number of students enrolled in online and hybrid courses in public 4-year colleges from 12,151 to 13,366 by 2016-17		2.2.g. Increase number of students who take high school courses to prepare them for STEM fields from X to X by 20XX	
		1.2.j. Increase percentage of teachers and principals rated distinguished from X to X by 20XX	1.3.i. Increase the number of students entering public higher education who access online learning (online and hybrid courses) in public community and technical colleges from 186,232 in 2012-13 to 189,957 in 2016-17		2.2.h. Increase percentage of high school graduates who during the 3rd quarter after graduation are either enrolled in postsecondary education or training or are employed in Washington from X% to X% by 20XX	
					2.2.i. Increase the percentage of entering 9th graders who after 4 years are either employed in Washington or enrolled in postsecondary education or training during the 3rd quarter from X% to X% by 20XX	
			STEM: science, technology, engineering and mathematics			



# **Appendix D**

<div> <div>AVAILABILITY OF SPACE</div> <div>2019-21 Four-year Higher Education Scoring Process</div> <div>REQUIRED FOR ALL CATEGORIES EXCEPT LAND ACQUISITION AND INFRASTRUCTURE.</div> </div>				
Project Name:		STEM III		
Campus Location		516 High Street, Bellingham, WA 98225		
Identify the average number of hours per week each (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2018 on the proposed project's campus. Please fill in the green shaded cells for the <b>campus</b> where the project is located.				
<b>(a) General University Classroom Utilization</b>		<b>(b) General University Lab Utilization</b>		
Fall 2017 Weekly Contact Hours	171,070	Fall 2017 Weekly Contact Hours	38,009	
Multiply by % FTE Increase Budgeted	0.00%	Multiply by % FTE Increase Budgeted	0.00%	
Expected Fall 2018 Contact Hours	171,070	Expected Fall 2018 Contact Hours	38,009	
Expected Fall 2018 Classroom Seats	7,719	Expected Fall 2018 Class Lab Seats	2,037	
<b>Expected Hours per Week Utilization</b>	<b>22.2</b>	<b>Expected Hours per Week Utilization</b>	<b>18.7</b>	
HECB GUC Utilization Standard	22.0	HECB GUL Utilization Standard	16.0	
Difference in Utilization Standard	1%	Difference in Utilization Standard	17%	
If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving that level of utilization.				

# **Appendix E**

**Program-related Space Allocation**  
**Assignable Square Feet Template**

Input the assignable square feet for the proposed project under the appropriate space type below:

Type of Space	Points	Assignable Square Feet	Percentage of total	Score [Points x Percentage]
Instructional Space (Classroom, Lab, Library)	6	25,000	83.3	5.0
Student Advising/Counseling	4		0.0	0.0
Childcare	1		0.0	0.0
Faculty Offices	4	5,000	16.7	0.7
Administrative	3		0.0	0.0
Maintenance/Central Stores/Student Center	4		0.0	0.0
<b>Total</b>		<b>30,000</b>	<b>100.0</b>	<b>5.7</b>