

DECISION PACKAGE TITLE: ENGINEERING GEOLOGY AND HYDROGEOLOGY

Recommendation Summary Text:

We propose establishing new degree programs in Engineering Geology and Hydrogeology at the BS and MS level, and a MS in Applied Geoscience aimed at professionals in the geosciences. Outcomes will include more robust water and land-use planning and policies which are informed by qualified licensed engineering geologists and hydrogeologists. Qualified engineering geologists protect the health and welfare of our citizens by characterizing geological features and hazards such as landslides, flooding, and earthquakes and assess risks and impacts of these hazards on civil works. Similarly, more qualified licensed hydrogeologists will result in improvements in our understanding of water resources and produce better, data-driven planning and policy regarding water use, availability, and water quality.

Fiscal Detail: [BUDGET AND FINANCIAL PLANNING (BFP) WILL COMPLETE THIS SECTION BASED ON ACCOMPANYING COST & REVENUE TEMPLATE]

	2021-22	2022-23	2021-23
RESOURCES			
Fund xxx, Net Tuition			
Fund 001, General Fund - State	\$ -	\$ -	\$ -
Total Resources	\$ -	\$ -	\$ -

USES (EXPENDITURES)			
Faculty	\$ -	\$ -	\$ -
Graduate Teaching Assistants	\$ -	\$ -	\$ -
Exempt	\$ -	\$ -	\$ -
Classified	\$ -	\$ -	\$ -
Hourly	\$ -	\$ -	\$ -
Salaries and Wages	\$ -	\$ -	\$ -
Employee Benefits	\$ -	\$ -	\$ -
Goods and Services	\$ -	\$ -	\$ -
Equipment	\$ -	\$ -	\$ -
Total Expenditures	\$ -	\$ -	\$ -

STAFFING FTE (B6)		
Faculty	0.00	0.00
Professional Staff	0.00	0.00
Classified Staff	0.00	0.00
Hourly	0.00	0.00

Total FTE	0.00	0.00
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Package Description

Narrative Justification and Impact Statement:

Land use, water use and availability, water quality, global change impacts, hazards and mitigation are all important societal issues that fall within the realm of the geosciences. To a certain degree, Western Washington University is addressing the state and national priorities to meet societal challenges in availability and quality of ground and surface waters, in evaluating and mitigating effects of geological hazards on people and property, and working with regional and national teams to better understand how our changing climate impacts these earth resources. To more thoroughly understand and address these issues and opportunities, we propose a new set of programs and partnerships with other groups. These will serve to address critical workforce needs, to provide better land and water use information to Washington State citizens and stakeholders, and will expand STEM access and capacity for Washington residents.

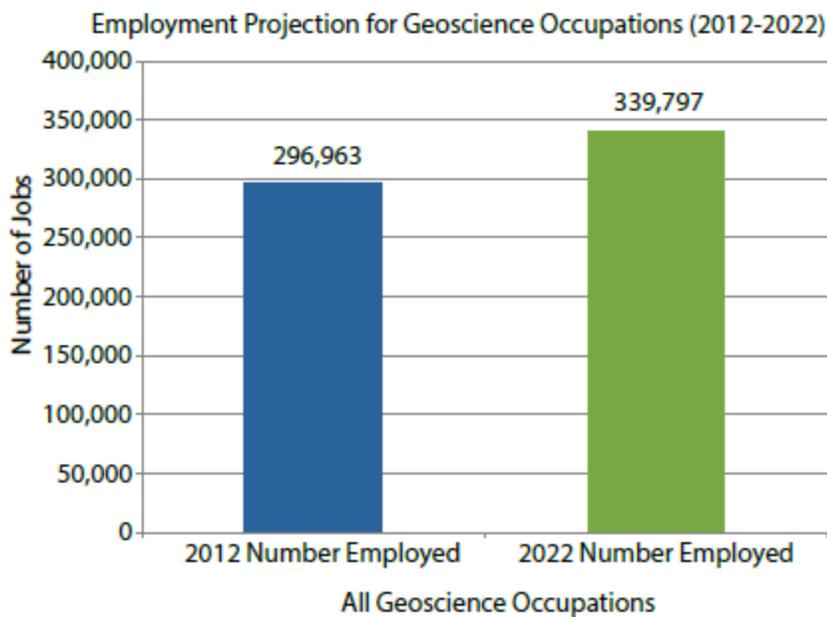
This proposal is made at an important juncture for our state. In the face of increasing population, and the prospect of larger net migration of citizens to Washington from other regions in the US, demands for water and land resources in the state will grow, and in some cases confront limits on resource availability or hazards associated with the geology of specific areas of our state. These resource issues will also be impacted by climate change, and by existing long-term geological hazards intrinsic to our state.

These present and future concerns clearly require an enhanced ability to understand and sustainably utilize our water and land resources; and the geoscience professionals that will be needed to help evaluate and address these concerns may be in short supply. Presently, Washington State is one of the top employers of geoscience professionals in the nation (2018 figures from Federal Bureau of Labor and Statistics (BLS)). Employment demand for geoscientists in Washington is forecast by BLS to grow by more than 18% by 2026, at which time Washington would be among the top four states for overall employment of geoscientists in the USA. Similar demographic and employment trends have been projected by other organizations, such as the American Geoscience Institute (AGI).

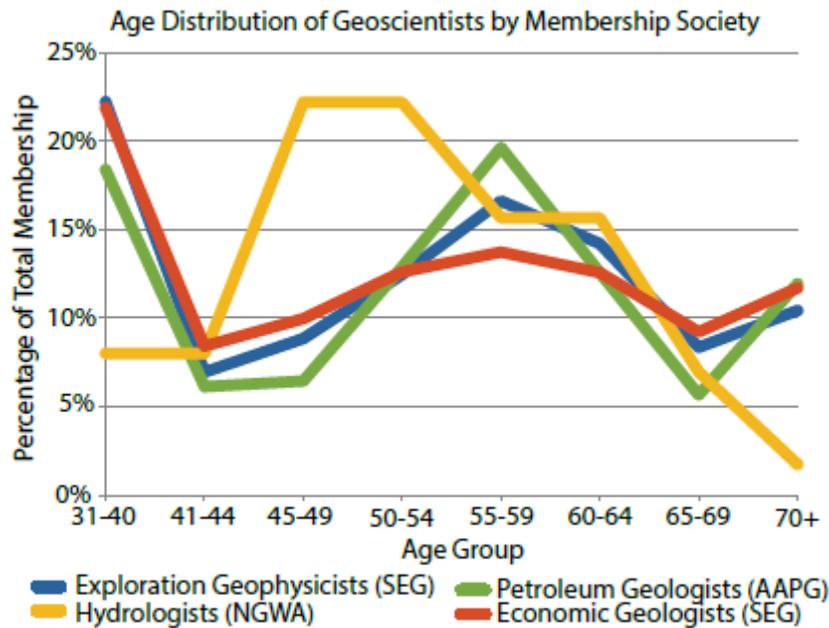
A 2018 AGI Status Report of the Geoscience workforce states “There were approximately 312,000 geoscientists employed in the United States in 2016. Over the next decade, there is predicted to be an 11% growth in geoscience full-time equivalents (FTE), as well as a potential loss of 48% of the workforce as they reach retirement. Due to these changes, AGI predicts a shortage of 118,000 FTEs by 2026. While many of these positions will be filled by newly trained geoscientists, the work-force, in anticipation of

these changes, has begun to implement new, innovative technologies to increase productivity and address the future shortage of FTEs in the geosciences.”

In the face of this increased demand for geoscience professionals in Washington, data from the WA Geologists Licensing Board indicates that of the ~2800 professional geologists who currently hold licenses (in Geology, Engineering Geology, or Hydrogeology), 62% of these are older than 55. So while need and demand for geoscience professionals will be high in the coming decade, the demographics of the profession points to a significant shortfall in the availability of qualified professionals in this field within our state by the year 2026.



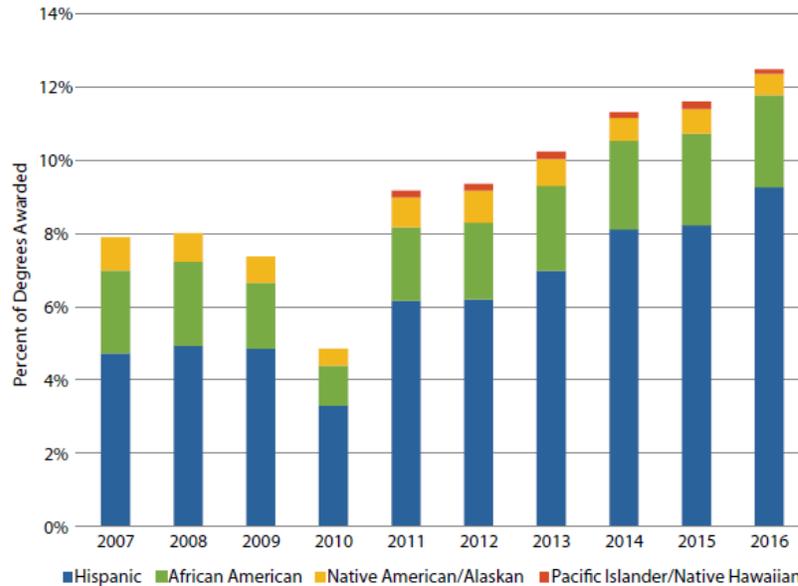
Above: from AGI status of Geoscience workforce (2014 edition) illustration of projected employment shortfall, using data from Federal Bureau of Labor Statistics (BLS).



Above: from AGI status of Geoscience workforce, illustrating aging population of geoscience professionals. Washington State figures for professional geologists, hydrogeologists, and engineering geologists are in line with data for SEG, AAPG members shown above.

A related, but important, aspect of this demographic situation is that the gender and ethnic diversity of geology license holders in Washington State is low. According to the WA Licensing Board, women geoscientists make up only 24% of current licensed geologists, 18% of licensed hydrogeologists, and 13% of licensed engineering geologists. Demographic information that tracks ethnic diversity of geology license holders is not kept by the State of Washington, however, it is known that overall, the geosciences have very low participation rates for all minority groups. Low participation rates of women and underrepresented ethnic groups will, if they persist, significantly hamper the ability of the profession to attract and retain an increasing number of new geoscience professionals; and this adverse effect will grow as the population of the state becomes more diverse over time. For this reason, the activities proposed here will include significant efforts to reach out to, and recruit, a more diverse set of students into the new (and existing) geoscience degree programs at WWU.

Figure 4.12: Percentage of Geoscience Bachelor's Degrees Awarded to Underrepresented Minorities



AGI Geoscience Workforce Program; Data derived from IPEDS

Above: percentage of geoscience BS degrees awarded nationwide to ethnic minorities. These data illustrate long-term and significant problems in recruiting and retaining underrepresented students in the geosciences nationwide.

Data for the past decade for WWU students who graduated with a BS in Geology (1275 total students) are similar to national demographics. The demographics of Geology UG majors since 2010 indicates that geology degree holders were 57% male, 43% female (using available, binary data), and were 15% students of color, and 85% Caucasian. Figures for MS graduates (217 total students) are similar, with 51% male and 49% female, and 10% students of color, 90% Caucasian.

The WWU Geology program places a high priority on making progress to increase diversity. Within WWU and its colleges, many efforts to improve the gender and ethnic diversity of WWU STEM, and geoscience, graduates are underway, and new programs are being developed. Undergraduates will be recruited into this new program using the developing the Advancing Excellence and Equity in Science (AEES) program as a pathway to increase both success of new STEM students and the diversity of the students in these degree programs.

The WWU Geology Department will also increase its outreach and recruitment efforts to selected 2-yr colleges in order to reach a larger, and more diverse, set of potential geoscience majors. A first step in this direction will include developing clearer articulation plans or agreements with 2-yr colleges, along with the development of an AS-T degree tailored for the geosciences. WWU will be also be able to effectively work with other higher-education institutions, and with state agencies, for this long-term

program. Long-term data show the WWU Geology program has produced more licensed geologists than any other higher-education program in the state, and in some years more WWU alums gain licensure than the combined alumni from UW and WSU. Allied programs in water quality (Institute for Watershed Studies), Marine and Coastal Science (new MACS program), and hazards planning in the Huxley College of the Environment, provide many existing opportunities and pathways for collaboration with affiliated faculty and their students, which the programs proposed here will significantly strengthen.

Please see the Appendix at the end of the document for the proposed degree programs.

a) What specific performance outcomes does the agency expect?

The main goals of this request are to establish new degree programs at WWU in Engineering Geology and Hydrogeology at the BS and MS levels, to work with other geoscience programs in the state to develop streamlined articulation agreements with 2-yr colleges, and to develop a 4+1 BS-MS program in applied geoscience. Through targeted student recruitment an important related goal is to increase the diversity of geoscience degree holders. Overall outcomes will be to **increase the number and diversity of licensed professional geologists/engineering geologists/hydrogeologists in WA**, and concurrently increase the overall STEM-major capacity at WWU.

The program that we hope to establish at WWU will also **leverage and improve synergistic efforts in allied fields among existing programs at WWU** in the Institute for Watershed Studies, the new Marine and Coastal Science program, and research and teaching programs in the Geology, Environmental Sciences, and Environmental Studies Departments. We will also **undertake an effort to more closely collaborate with programs at other state universities**, e.g., the University of Washington (UW; Civil Engineering Department and programs in hydrology and geotechnical engineering), Washington State University (WSU; Water Research Center), and the Central Washington University (CWU) Department of Geological Sciences, and state and federal agencies such as the WA Department Natural Resources, and the US Geological Survey.

This proposed program can also be used as a **vehicle to nucleate some evolving collaborations with specific research groups in the USGS and the WA-DNR**. Currently, the Geology Department is hosting a USGS coastal geologist (Dr. Eric Grossman) who, under a soon to be approved MOU between the USGS and WWU will have his permanent work location on the Bellingham campus. His research group works on issues related to sea-level changes, habitat health, and coastal hazards assessment for the Salish Sea, and includes ongoing collaborations between his USGS group, regional Tribal Nations, and WWU staff, faculty, and students in Geology, Environmental Sciences and Marine and Coastal Science. His research group is likely to grow, and would be a natural partner to the programs proposed here. Other USGS groups include

the Ferndale Field Office of the Washington Water Science Center, currently in a business park on Slater Road, near the garbage dump in Ferndale, who work to deploy and collect stream-gauge and water quality data in the region, and possible expansion of the Cascades Volcanic Observatory/Pacific NW Seismic Network to include a field office at WWU.

b) Performance measure detail.

Targeted enrollment in the WWU BS E&H program would be 30 degrees awarded each year, with 60-90 majors enrolled. A goal would be to have at least half of these students recruited from diverse sources (working with the AEES program for first-year students) and from 2-yr colleges. The MS program would produce 10 MS degrees and 15-20 majors in its initial stages. While difficult to estimate, a proportion of students currently in the Geology BS, or the Environmental Sciences BS offered by the Environmental Sciences Department, may choose this program, resulting in additional capacity and slightly lower demand for those degrees. Given plans for the Environmental Sciences Department to restrict majors and cap enrollments, these new degree programs should represent a viable alternative for many students who are unable to gain entry to that degree program.

The following metrics will be used to evaluate the performance of the program:

- The number of Engineering Geology/Hydrogeology BS degrees awarded
- The number of Applied Geoscience MS degrees awarded
- Placement rates of graduates with employers in Washington and in other states
- The effect of the program on the total number of degrees awarded in STEM
- The effect of the program in advancing the diversity pool of graduates

c) Is this proposal an expansion or alteration of a current program or service? If so, provide detailed historical financial information for the prior two biennia.

Long-term data show the WWU Geology program has produced more licensed geologists than any other higher-education program in the state, and in some years more WWU alums gain licensure than the combined alumni from UW and WSU. The Geology Department has core elements for an engineering geology and hydrogeology degree in place. We have a broad curriculum and active faculty that would integrate and support the degree plans. And, there is strong student interest.

Allied programs in water quality (Institute for Watershed Studies), Marine and Coastal Science (new MACS program), and hazards planning in the Huxley College of the Environment, provide many existing opportunities and pathways for collaboration with

affiliated faculty and their students, which the programs proposed here will significantly strengthen.

d) Is this decision package essential to implement a strategy identified in [Western's strategic plan](#)?

This proposal also effectively addresses and aligns with the core themes of the WWU Strategic Plan, with the six Strategic Goals for the College of Sciences and Engineering, and with elements of the Geology Department 6-year strategic plan that was developed to respond to these institutional goals.

Advancing Inclusive Excellence: This proposal will leverage current participation in the outreach, recruitment, and support system being developed for natural sciences majors through the Advancing Excellence and Equity in Science (AEES) program, and by developing partnerships and out-reach and recruitment plans with 2-yr colleges to be selected to maximize the potential to recruit a more diverse pool of students into these geoscience degree programs. Current 2-yr colleges with existing geoscience programs and faculty that would be well-aligned as partners for this program are Olympic College, Seattle Central CC, North Seattle CC, South Seattle CC, Spokane CC, and Highline College.

Increasing Washington Impact: As described in the body of this proposal, the programs to be established here will address many societal needs- water availability and quality, improved understanding and mitigation of geological hazards, better and more sustained efforts to mitigate effects of climate change. In addition, the programs will increase capacity in STEM degree programs, and will specifically address a significant workforce requirement for more qualified geoscience professionals in this state.

Enhancing Academic Excellence: The new degree programs will build on highly successful and high-quality degrees offered by the WWU Geology Department, and allied programs in Environmental Science, and Marine and Coastal Science. The new faculty, staff, and graduate and under-graduate students who will be hired, and who will graduate from, this program will all enhance and expand the impact of these quality programs while advancing critical state needs.

WWU Strategic Plan Goals met:

Goal #1: Western will provide a transformational education grounded in the liberal arts and sciences based on innovative scholarship, research, and creative activity. This program will ensure and expand student access to a wider range of undergraduate, graduate, and professional programs via the introduction of these new degree, and expanding capacity in the geosciences and allied programs, meeting **Goal 1A**. Many of the topics and disciplines included in the geosciences, and in particular within hydrogeology, engineering geology, and climate/geological hazards will directly provide additional tools and experiences to activate intellectual curiosity and apply these tools

and curiosity to important societal issues, meeting **Goal 1B**. The project will increase the support and infrastructure within the geosciences and allied programs, bolstering research, teaching and creative activity in these fields, thus meeting **Goal 1C**. Because the programs proposed here will increase opportunities and experiences in field settings, and in working with off-campus industry and agency partners, this program will directly aid in meeting **Goal 1D**, to ensure that all students have access to high quality educational experiences beyond the classroom. Finally, the new technological and infrastructure elements of the programs proposed here, along with bolstering allied programs and directly addressing important resource and geohazards problems through engagement with local, regional, and national partners, directly addresses **Goal 1G**.

Goal #2: Western will advance a deeper understanding of and engagement with place. Many elements of geoscience teaching and research have meaningful and valuable intersections with the physical location and environment, which are fundamental to place. The natural environment, and how this aspect of place has been modified by the built environment, is at the core of applied geosciences such as hydrogeology and engineering geology. A better understanding of concepts of place will inform the development of the new programs proposed here via targeted local and regional partnerships. These programs can meet aspects of **Goal C** by providing an enhanced understanding of the geological environment and evolution of the region, and will include experiences in natural and classroom settings. A better understanding of our regional and local geological setting, hazards and conditions posed by this setting, and important questions such as water availability and impacts of climate changes will be fostered by the programs developed as part of this proposal, and these can in turn be used to directly inform and improve the geological sustainability of the University and its operations, thus meeting **Goal 2E**. Likewise, these same programs that lead to improved understanding of the natural, geological environment (which essentially is the physical manifestation of our planet), will provide our students with knowledge, skills, and abilities to understand aspects of the geosciences that promote thriving communities, and so this will help meet **Goal 2F**. Working directly with WWU and local, regional, national and tribal communities to better understand aspects of engineering geology and hydrogeology, and to develop direct partnerships with those communities, will increase engagement, and so help accomplish **Goal 2G**. The geosciences have, among the departments and programs in the College of Science and Engineering, better prospects for advancing elements of place as outlined in this goal, as a better understanding of, and respect for, the whole Earth is a foundational element of our program.

Goal #3: Western will foster a caring and supportive environment where all members are respected and treated fairly. **Goal 3F** is well-addressed by this proposal. An important element in this project will be to expand the networks and connections between faculty, students, staff, and alums working on issues and projects in the geosciences, specifically in hydrogeology and engineering geology. The Geology Department has a broad network of alumni in these fields that will serve as a solid basis for further advancement in this area, for example the current State Geologist and State Earth Science manager is Casey Hanell, a WWU geology alum.

Goal #4: Western will pursue justice and equity in its policies, practices, and impacts: While the Geology Department respects, and in some cases exercises leadership in, the elements in this goal, the programs proposed here will only directly address **Goal 4C**, by seeking to recruit, retain, and graduate larger numbers of under-represented and first-generation UG and MS students.

This proposal also effectively addresses and aligns with many of the Strategic Goals for the College of Sciences and Engineering, and with elements of the Geology Department 6-year strategic plan that was developed to respond to these institutional goals. These include:

- Investing in programs that support student success
- Improving access to STEM by pursuit of targeted growth opportunities
- Developing programs that meet the needs of our students and the State
- Investing in infrastructure, faculty, staff, and student research
- Supporting graduate program quality and access
- Expanding interdisciplinary skills

e) How does this package relate and contribute to the [Governor's Results Washington goal areas and statewide priorities?](#)

This proposal is attractive for external funding because the activities and programs that will be enabled by this request will help to directly address several critical needs of the state and our society, and beyond, that are related to changes in the present climate, and its impacts on water quality and availability, on geological hazards and mitigation and monitoring techniques, all of which will pose challenges to land use and availability. The programs proposed here directly address and align perfectly with many of the priorities for action proposed by the Governor in his current budget proposal.

This proposal fulfills the number one goal to increase access to higher education (1.3); specifically those related to the number of students enrolled in STEM programs and graduating from STEM programs and identified high-demand employment programs (1.3a, b, d, f, h, i). Additionally, our plan supports the goal to uphold a Sustainable, Efficient Infrastructure, including water (Healthy Lands (3.1) and Clean, Cool Water (3.2)) by increasing the number of Washington licensed Geologists, Engineering Geologists, and Hydrogeologists.

f) What are the other important connections or impacts related to this proposal?

Other stakeholders such as geoscience businesses, as well as tribal, state, local, and national agencies are highly supportive, including Washington State Department of Natural Resources, Department of Transportation and Department of Ecology offices. Additionally, this request is related to a regulatory matter, in that it helps to improve the

education and training of Washington licensed Geologists, Engineering Geologists, and Hydrogeologists.

g) What alternatives were explored by the agency, and why was this alternative chosen?

A strategic goal of Western is to build upon our strengths to address critical needs in the State of Washington. Our strategic planning process explores many alternatives for meeting that strategic goal. This alternative was chosen to allow the institution to meet the growing needs of the State, as well as serving the growing demand for STEM degrees overall at WWU and within the State.

h) What are the consequences of not funding this package?

The “no action” alternative will result in fewer geoscience degrees awarded, and fewer qualified licensed engineering geologist and hydrogeologists addressing critical land-use planning, infrastructure development, hazard mitigation, and water resource issues facing the state in the decades to come.

i) What is the relationship, if any, to the state’s capital budget? How does this proposal impact state facilities?

Space:

Seven offices (700 asf) and five labs (2000 asf) for added faculty and staff.

Two additional class-lab spaces (1600-2000 asf)

In addition, collaborative space for outside partners. Should include and explore both industry use (a geotech lab, for example), but also state/federal agency partners (DNR staff on site, USGS staff on site) and leverage private, state higher-ed, state agency, and federal agency resources. (500 to 5000 asf)

j) What changes would be required to existing statutes, rules, or contracts, in order to implement the change?

NA

k) Does this Decision Package include funding for any IT-related costs, including hardware, software, (including cloud-based services), contracts or IT staff? If so, please identify.

NA

l) Expenditure and revenue calculations and assumptions.

WWU Request:

Personnel:

Faculty:

Two 1.0 FTE Engineering Geology/Civil Engineering, in fields that span rock/soil mechanics, slope stability. One could be shared with Engineering/AMSEC, and could meet increased demand for Phys 161-163 as part of their teaching appointments.

Two 1.0 FTE Hydrogeology/Hydrology, in fields that include water geochemistry/quality, regional climate/climate change modelling, field (well) based experimentalist. Both positions could be shared with Huxley and/or institutes.

One 1.0 FTE Chemistry/geochemistry, to support this program, and in part allied programs in Geology, Marine Science, Environmental Sciences.

Staff:

0.5 FTE Program Advisor: needed to help coordinate efforts and partnerships to recruit and retain diverse students in these programs, and to assist faculty and staff in development of partnerships with industry, government, academic programs, to coordinate projects with outside entities and affiliated faculty/programs, foster working relationships with 2yr and allied four year colleges/universities.

0.3 FTE increase to Geology UG coordinator office staff to support academic program,

Two 1.0 FTE lab support staff in geotechnical, computational, and geochemistry. Latter would support programs in MACS, AMSEC, others, and can be shared with STS.

Four 1.0 FTE Graduate TA positions to support the MS thesis option.

m) Which costs and functions are one-time? Which are ongoing? What are the budget impacts in future biennia?

One-time costs:

New faculty start-up (\$100k for each faculty)

Pooled lab/class-lab equipment: \$500,000

Program recruitment and outreach: \$40,000 in each of the first years

Ongoing non-personnel costs would include an operating budget to support program activities, as well as to support and maintain lab and computational facilities needed for the research and teaching programs proposed here.

Item	Year one	Year two	Total
Faculty	2 FTE: \$210,000	3 FTE: \$325,000	\$535,000 (5 FTE)
Staff	1.3 FTE: \$100,000	1.5 FTE: \$130,000	\$230,000 (2.8 FTE)
Start-up*	\$200,000	\$300,000	\$500,000
Operating	\$15,000	\$15,000	\$30,000
Grad TA	2 FTE: \$33,000	2 FTE: \$36,000	\$69,000 (4 FTE)
Program recruitment*	\$40,000	\$40,000	\$80,000
Pooled equipment*	\$250,000	\$250,000	\$500,000
One-time costs		Total	\$1,080,000
Recurring costs		Total	\$860,000

*one-time costs. Other costs are ongoing to program budget. Total request: \$1,940,000

Note that total figures include fully budgeted ongoing costs.

Appendix: Proposed Degree Programs

BS degree in Engineering & Hydrogeology Geology

Chem 161-163

Phys 161-163

Math 124, 125, 204

Other Statistics / Comp Sci

Geol 211, 213*, 311 or 306, 314*, 318, 352, 413*, 415, 452, 470, 472*, 473*

ENGR 170 or MSCI 204

ENGR 214, 225

Geol 3xx (rock and soil mechanics)

Project-based 6 credit capstone

*existing courses that would be taught more often, increasing program capacity, by new faculty proposed here

WWU program would share some of the new resources in the Coastal/Marine program (coastal processes, sea-level), would enhance or could include addition of geomaterials faculty to AMSEC, and contribution/shared faculty in rock-mechanics in the Engineering Department (could teach statics, dynamics, mechanics of materials). Water quality/resources would share/provide resources to Huxley College and its Institutes. Ultimately a build out of this program will help bolster STEM capacity in these other

allied programs. The impacts on other programs (course demand) would be in Chemistry, Math, and Physics.

MS degree in Engineering Geology & Hydrogeology:

Geol 5xx: Advanced EG, Advanced HG, planning/policy elective

Option for thesis, or year-long industrial/applied project

4+1 BS+MS option: complete 45 credits of the courses in BS E&H-G degree- apply in Junior year to 4+1 program- count 15 credits of 400/500 courses as 500 level for MS- do year-long industry/applied project

We will/should also explore this degree as a path for students with a BS in Environmental Science, who often have difficulty entering the geoscience field because that degree lacks important elements of geology needed for professional licensure.

MS degree in Applied Geoscience

This program would be designed to serve returning/existing geoscience professionals who require additional education for career advancement and to facilitate licensure for specialty (Engineering Geology and Hydrogeology) professional licenses required by the State.

Existing programs are offered by University of Pennsylvania (<https://www.sas.upenn.edu/lps/graduate/msag>), UW-Earth and Environmental Sciences (<https://www.ess.washington.edu/education/grad/message/>), and can serve as models for the curriculum needed for this proposed degree.

We will also explore a Statewide Academic Program coordination model, such as WWU BS degree admissions agreement/pathway to UW-CE MS programs in Geotechnical and Environmental Engineering. We could also develop an AS-T program for Geology/CE/Hydrology at state 2-yr colleges and include admission/articulation agreements from 2-yr programs to CWU/WWU. Develop transfer/articulation/partnership with Northwest Indian College (NWIC) and use the WWU/HHMI AEES model to develop/mentor new students in these programs. Develop 4+1 BS+MS degrees with UW-CE and WSU- WWU/CWU students to those programs, and WSU/UW undergrads in geoscience can feed to WWU and CWU MS program.

Use this tab to enter personnel budget

All Positions assumed to be permanent & recurring unless noted otherwise

Enter Proposed Annual salary, Headcount, and FTE

PLEASE INCLUDE BOTH HEADCOUNT AND FTE

STATE BIENNIAL BUDGET REQUEST YEAR 1

STATE BIENNIAL BUDGET REQUEST YEAR 2

FY2021-22

FY2022-23

POSITION TITLE	Full Time Average CUPA Salary (Divisional Budget Personnel to Provide CUPA)	FY2021-22							FY2022-23					
		Proposed Annual Salary	Headcount	FTE	Budgeted Salary	Benefits	TOTAL	Proposed Annual Salary	Headcount	FTE	Budgeted Salary	Benefits	TOTAL	
Faculty Salaries														
Assistant Prof Engineering Geology	\$74,591	\$79,134	1.0	1.00	\$79,134	\$26,235	\$105,369	\$81,508	2.0	2.00	\$163,016	\$53,343	\$216,359	
Assistant Prof Hydrogeology	\$74,591	\$79,134	1.0	1.00	\$79,134	\$26,235	\$105,369	\$81,508	2.0	2.00	\$163,016	\$53,343	\$216,359	
Assistant Prof Chemistry/Geochemistry	\$68,916	\$73,113			\$0	\$0	\$0	\$75,306	1.0	1.00	\$75,306	\$25,530	\$100,836	
Total Assistant Professors		\$231,381	2.0	2.00	\$158,268	\$52,469	\$210,737	\$238,322	5.0	5.00	\$401,338	\$132,216	\$533,554	
Faculty Salary and Benefit Total		\$231,381	2.0	2.00	\$158,268	\$52,469	\$210,737	\$238,322	5.0	5.00	\$401,338	\$132,216	\$533,554	
Professional Salaries														
Program Advisor					\$0	\$0	\$0	\$56,650	1.0	0.50	\$28,325	\$11,048	\$39,373	
Exempt Professional Staff Salary and Benefit Total		\$0	0.0	0.00	\$0	\$0	\$0	\$56,650	1.0	0.50	\$28,325	\$11,048	\$39,373	
Classified Salaries														
Program Coordinator increase	51,240	\$54,361	1.0	0.30	\$16,308	\$3,588	\$19,897	\$55,991	1.0	0.30	\$16,797	\$3,692	\$20,490	
ICST 3	56,568	\$60,013	1.0	1.00	\$60,013	\$24,431	\$84,444	\$61,813	2.0	2.00	\$123,626	\$49,628	\$173,254	
Classified Staff Salary and Benefit Total		\$114,374	2.0	1.30	\$76,321	\$28,020	\$104,341	\$117,804	3.0	2.30	\$140,423	\$53,321	\$193,744	
Student Salaries														
Note: Graduate Asst <u>1 HC = 20 hrs</u> per week per academic year. <u>.5 HC= 10 hrs</u> per week per academic year.														
TA		\$14,750	2.0	2.00	\$29,500	\$2,294	\$31,794	\$15,665	4.0	4.00	\$62,660	\$4,873	\$67,533	
Student Salary and Benefit Total		\$14,750	2.0	2.00	\$29,500	\$2,294	\$31,794	\$15,665	4.0	4.00	\$62,660	\$4,873	\$67,533	
Total Salary and Benefits - All Positions		\$360,505	6.0	5.30	\$264,089	\$82,783	\$346,872	\$428,441	13.0	11.80	\$632,746	\$201,457	\$834,204	

WESTERN WASHINGTON UNIVERSITY
Engineering Geology and Hydrogeology

STUDENT FTE (1FTE =15 Student Credit Hours) GENERATED FROM PROPOSAL →

FY2021-22 FY2022-23
0 0

STATE BIENNIAL BUDGET REQUEST YEAR 1

STATE BIENNIAL BUDGET REQUEST YEAR 2

Salary & Benefit Information Automatically Populated from Personnel Budget Tab
DO NOT ENTER SALARY & BENEFITS DATA HERE

Faculty Salaries
Professional Salaries
Classified Salaries
Student Salaries (Graduate Assistants, Hourly Student, etc)
Benefits

FY2021-22					
Employee	One Time	Recurring	Total	Total Cost	
FTE	Costs	Costs	Costs	Per SFTE	
2.00		\$ 158,268	\$ 158,268		
0.00		\$ -	\$ -		
1.30		\$ 76,321	\$ 76,321		
2.00		\$ 29,500	\$ 29,500		
5.30		\$ 82,783	\$ 82,783		
Total Salaries & Benefits		\$0	\$346,872	\$346,872	\$0

FY2022-23					
Employee	One Time	Recurring	Total	Total Cost	
FTE	Costs	Costs	Costs	Per SFTE	
5.00		\$ 401,338	\$ 401,338		
0.50		\$ 28,325	\$ 28,325		
2.30		\$ 140,423	\$ 140,423		
4.00		\$ 62,660	\$ 62,660		
11.80		\$ 201,457	\$ 201,457		
Total Salaries & Benefits		\$0	\$834,204	\$834,204	\$0

Enter "Goods and Services" here

Supplies and Materials
Professional Service Contracts (please detail below)
Equipment and Personal Technology - including new faculty set-up costs *
Other Goods and Services (includes memberships, supplies, materials)

		\$ 10,000	\$ 10,000		
			\$ -		
	\$ 450,000		\$ 450,000		
	\$ 30,000		\$ 30,000		
Total Goods and Services		\$480,000	\$10,000	\$490,000	\$0

		\$ 17,500	\$ 17,500		
			\$ -		
	\$ 550,000		\$ 550,000		
	\$ 25,000		\$ 25,000		
Total Goods and Services		\$575,000	\$17,500	\$592,500	\$0

Enter "Travel" here

Lodging
Automobile Rental
Air Travel
Ground Transportation
Other travel costs

			\$ -		
			\$ -		
			\$ -		
			\$ -		
	\$ 10,000	\$ 5,000	\$ 15,000		
Total Travel		\$10,000	\$5,000	\$15,000	\$0

			\$ -		
			\$ -		
			\$ -		
			\$ -		
	\$ 15,000	\$ 12,500	\$ 27,500		
Total Travel		\$15,000	\$12,500	\$27,500	\$0

Total Expenditures (including Indirect Costs)		\$490,000	\$361,872	\$851,872	\$0
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Total Expenditures (including Indirect Costs)		\$590,000	\$864,204	\$1,454,204	\$0
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* Set-up for new Faculty Positions should be included, ranging from \$7,500 to more than \$75,000, depending on discipline.