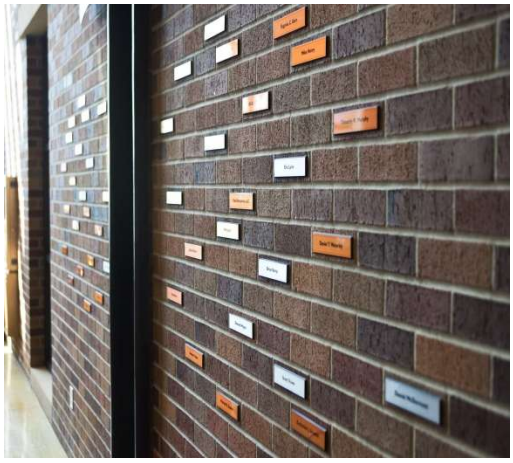
CAPITAL BUDGET REQUEST



2025-2027 BIENNIUM

2026 Supplemental Request

Eastern Washington University

EASTERN WASHINGTON UNIVERSITY

September 15, 2025

The Honorable Governor Bob Ferguson
Office of the Governor
PO Box 40002
Olympia, WA 98504

Dear Governor Ferguson:

This letter transmits the 2026 supplemental capital budget request for Eastern Washington University (EWU). Developed within the guidelines set by the Office of Financial Management, this request represents Eastern's efforts to focus on its mission to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence.

These prioritized capital budget requests support university priorities and strategies currently in place to serve the higher education needs of our region. Eastern places a high distinction on protecting the state's investment in our physical facilities. Funding for projects such as sewer and water system replacement, infrastructure preservation, roof replacement, access control, classroom renewal, decarbonization and building demolition, and climate impact projects are are essential to the success of the university. The top three priorities focus on improvements necessary to protect state assets and a commitment to safe and reliable services.

Priority #1 – Sewer and Water Repair and Replacement

> EWU's Cheney campus water and sewer systems are aging and require timely investment to avoid costly failures. This project will re-line 1,200 feet of sewer lines, replace 1,500 feet of water mains, and upgrade hydrants, valves, and trunk lines—critical improvements to ensure safe, reliable service and protect state assets.

Priority #2 – Campus Infrastructure Repairs

> The project with replace the exterior concrete stair at the PE Classroom Building, repair the elevated walkway at the PE complex, repair the concrete entry ramp at the JFK Library, repair leaking sections and components of the steam tunnels, and replace concrete walks that pose a safety hazard to pedestrians.

Priority #3 – Campus Roofing Projects

> The roofs on Showalter Hall and the Performing Arts Complex (Art, Music, Radio/Television, Communications, and Theater) are over 30 years old and failing, with leaks, cracked coatings, and deteriorated insulation. Funding is needed to replace and repair these systems to protect state assets, ensure safe academic spaces, and prevent higher emergency costs if deferred.

Eastern Washington University is committed to ensuring that our facilities remain well-maintained and responsive to the long-term needs of the region. These proposals support expansion and renewal of campus infrastructure and are essential to providing access to higher education for the residents of Eastern Washington. We respectfully request your thoughtful consideration of this capital funding request, which is critical to supporting the university's mission.

I urge you to support this request, and I welcome the opportunity to discuss EWU's plans with you and your staff. Thank you for your continued partnership and commitment to building a brighter future for Eastern Washington University, our region, and our state.

Sincerely,

Shari McMahan, Ph.D.
President
Eastern Washington University

370 – Eastern Washington University

2026 Supplemental Capital Budget Request
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370 - Eastern Washington University
Ten Year Capital Plan by Project Class
2025-27 Biennium
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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS001
Date Run: 9/14/2025 11:44PM

Project Class: Preservation (State-Owned)

Agency Priority	Project by Account-EA Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
1	**40000227 Sewer and Water System Repair and Replacement**									
	057- State Bldg Constr-Unknown									
	057-1 State Bldg Constr-State	2,500,000				2,500,000				
	Project Total:	**2,500,000**				**2,500,000**				
2	**40000228 Campus Infrastructure Repairs**									
	057-1 State Bldg Constr-State	2,500,000				2,500,000				
	061-1 EWU Capital Projects-State									
	Project Total:	**2,500,000**				**2,500,000**				
3	**40000229 Campus Roofing Projects**									
	057- State Bldg Constr-Unknown									
	057-1 State Bldg Constr-State	3,500,000				3,500,000				
	Project Total:	**3,500,000**				**3,500,000**				
4	**40000230 Campus Security and Access Control**									
	057- State Bldg Constr-Unknown									
	057-1 State Bldg Constr-State	3,750,000				3,750,000				
	Project Total:	**3,750,000**				**3,750,000**				
5	**40000231 Space Utilization and Student Success**									
	057- State Bldg Constr-Unknown									
	057-1 State Bldg Constr-State	3,000,000				3,000,000				
	Project Total:	**3,000,000**				**3,000,000**				
6	**40000232 Decarbonization and Building Demolition**									

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Ten Year Capital Plan by Project Class
2025-27 Biennium
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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS001
Date Run: 9/14/2025 11:44PM

Project Class: Preservation (State-Owned)

Agency Priority	Project by Account-EA Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
6	**40000232 Decarbonization and Building Demolition**									
	057- State Bldg Constr-Unknown									
	057-1 State Bldg Constr-State	7,466,000				7,466,000				
	Project Total:	**7,466,000**				**7,466,000**				
7	**40000233 Carbon Capture**									
	26C- Climate Commit Accou-Unknown									
	26C-1 Climate Commit Accou-State	3,600,000				3,600,000				
	Project Total:	**3,600,000**				**3,600,000**				
Total: Preservation (State-Owne		**26,316,000**				**26,316,000**				

Project Class: Program Improvement (State-Owned)

Agency Priority	Project by Account-EA Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
8	**40000234 EWU Large Solar Array**									
	26C-1 Climate Commit Accou-State	7,134,000				7,134,000				

Total Account Summary

Account-Expenditure Authority Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
057- State Bldg Constr-Unknown									
057-1 State Bldg Constr-State	22,716,000				22,716,000				

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Ten Year Capital Plan by Project Class
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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS001
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Total Account Summary

Account-Expenditure Authority Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
061-1 EWU Capital Projects-State									
26C- Climate Commit Accou-Unknown									
26C-1 Climate Commit Accou-State	10,734,000				10,734,000				
Total	**33,450,000**				**33,450,000**				

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Capital Project Request

2025-27 Biennium

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/13/2025 4:42PM

Project Number: **40000227**
Project Title: **Sewer and Water System Repair and Replacement**

Description

Starting Fiscal Year: 2026
Project Class: Preservation (State-Owned)
Agency Priority: 1

Project Summary

Older sections of water and sewer lines on the Cheney campus are reaching the end of their useful lives and are in need of repair or replacement. This project will re-line over 1200 feet of 8” concrete sewer line, replace 1500 feet of 6” water mains, and replace multiple system components such as fire hydrants, valves, cleanouts, and smaller trunk lines.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:

Aging campus water and sewer lines have reached the end of their useful lives and are beginning to fail, leak, and collapse. Systems with life expectancies of 40 to 50 years are over 75 years old, and root infiltration has taken its tol on sewer mains. Portions of water mains are currently shutoff to prevent building flooding.

Opportunity:

Addressing these systems prior to a major failure has multiple benefits. If addressed prior to failure, the solution will be much more cost effective and less disruptive to the campus and students. For example: being able to sleeve an existing concrete sewer line is much more cost and time effective than waiting for the line to collapse and then needing to completely excavate utilities located in the heart of campus, beneath paved walkways, building entrances, etc. Likewise, replacing a water main prior to rupture will prevent adjacent damage that could have been avoided.

Priority:

This is a very high priority. In order to prevent further problems, performing this work over the next year would be most effective in preventing additional, adjacent damage to the campus.

Underserved people/communities:

More than 1 in 3 students at EWU are from diverse backgrounds, and 44% of students are the first in their families to attend college. EWU provides one of the most affordable and accessible educations from a 4-year university in Washington State. This project will support underserved populations in the region, state, and beyond by maintaining facilities that continue to serve all students.
Portions of the project improve access and safety for underserved and vulnerable populations, particularly students with disabilities, non-traditional students, and those relying on access to the JFK Library. The upgrade will enhance ADA compliance and increase access across all campus populations.

Operating budget savings:

EWU plumbers currently spend additional time to clean, jet, and repair sewer and water lines that are beginning to fail. This Spring, a damaged sewer line caused multiple older buildings on campus to close until repairs could be made. The emergency resulted in loss of use of facilities, additional cost in emergency repairs, and it prevented EWU crews from addressing other important needs on campus.

Public safety improvements:

As referenced above, several buildings needed to be taken off-line to perform emergency repairs in Spring 2025. This project request would prevent future campus shut-downs, and it would proactively address safety and sanitary conditions related to sewage and potable water delivery

Project Number: 40000227
Project Title: Sewer and Water System Repair and Replacement

Description

Clarifying details:
This request would address existing infrastructure conditions that have become more urgent in the last few years and that continue to deteriorate at an increasing rate due to components reaching the end of their serviceable life

Current conditions of facility/system:
The current facilities that would be addressed are over 75 years old, at or beyond their useful life, and serve several of the older, historic buildings on campus. Concrete and clay sewer lines are damaged, have sunken sections, are impacted by root infiltration, and cause clogged lines on a more frequent basis. Ductile iron water lines have leaked, burst, and have deteriorated due to age and materials that were commonly used when the systems were originally installed.

What will the request produce or construct (predesign/design of a building, additional space, etc.)?When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
If successful, this request would construct, repair, and replace multiple sewer and water lines that serve the Cheney campus. This project will re-line over 1200 feet of 8” concrete sewer line, replace 1500 feet of 6” water mains, and replace multiple system components such as fire hydrants, valves, cleanouts, and smaller trunk lines. Detailed design documents for the project could begin immediately, as soon as funds are received, and the work is anticipated to be completed during the summer of 2026, thereby limiting disruption to students. The project could be phased, and this request would cover phase one with subsequent phases being planned and constructed as additional funding is received.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
This request would repair or replace aging sewer and water lines on campus prior to a catastrophic failure or leak.

Not taking action would result in system leaks and failures taking place on an ever-increasing frequency. Ultimately, a catastrophic failure will result from not taking action. This would be much more costly, much more disruptive to students and the campus, and it would post higher risks from a public safety standpoint.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Two options exist and were entertained. One is to repair and replace systems that have reached the end of their life. Option 2 is to wait until a catastrophic failure occurs. Option 1 is being proposed to prevent the problems and negative consequences associated with not taking action.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
All current students, faculty & staff, visitors, and the adjacent community would be impacted by this budget request.

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Capital Project Request
2025-27 Biennium
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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/13/2025 4:42PM

Project Number: 40000227
Project Title: Sewer and Water System Repair and Replacement

Description

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.
No it does not.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project supports the master plan by maintaining the condition, health, and function of the campus. It improves performance by reducing operation and maintenance costs associated with deteriorating infrastructure and frequent repairs.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
No, it does not.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
This project does not directly address EUI or carbon emissions. However, it would reduce water usage related to undetected leaks.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Performing this work now would positively impact the state resources be preventing a more expensive future repair or replacement.

Is there additional information you would like decision makers to know when evaluating this request?
Ordinarily, some of this work would be incorporated into other adjacent capital projects across campus. Due to a state budget shortfall, Biennial funding for 2025/2027 capital construction was dramatically reduced for EWU. This request is to be able to address some of the most critical work on campus that is currently not funded.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Preservation List

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Capital Project Request
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*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/13/2025 4:42PM

Project Number: **40000227**
Project Title: **Sewer and Water System Repair and Replacement**

Description

Growth Management impacts
No impacts

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057	State Bldg Constr-Unknown	2,500,000				2,500,000
	Total	**2,500,000**	**0**	**0**	**0**	**2,500,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057	State Bldg Constr-Unknown				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
This project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place. Although there will be efficiencies, it will not impact overall staff needs across campus.

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000227	40000227
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Capital Project Request

2025-27 Biennium

*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 10:48AM

Project Number: **40000228**
Project Title: **Campus Infrastructure Repairs**

Description

Starting Fiscal Year: 2026
Project Class: Preservation (State-Owned)
Agency Priority: 2

Project Summary

Components of campus infrastructure are failing and becoming critical safety concerns. This project will replace the exterior concrete stair at the PE Classroom building, repair the elevated walkway at the PE complex, repair the concrete entry ramp at JFK Library, repair leaking sections and components of steam tunnels, and replace concrete walks that pose a safety hazard to pedestrians.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:
Exterior concrete stairs and walks, building entry ramps, and sections of concrete steam tunnels are severely deteriorated and in need of repair and selective replacement.

Opportunity:
The opportunity exists to address failing infrastructure before further damage occurs. A proactive approach will produce multiple benefits including: reduced cost for future repairs, maintenance, and operation, addressing safety concerns for students and staff, less exposure to construction cost escalation, and by preventing further damage to state owned infrastructure.

Priority:
Very high - campus safety is beginning to be compromised. Travel routes and circulation components across campus will need to be closed if work does not happen soon. In order to prevent additional deterioration, performing this work over the next year would be the most effective way to ensure campus safety and function.

Underserved people/communities:
More than 1 in 3 students at EWU are from diverse backgrounds, and 44% of students are the first in their families to attend college. EWU provides one of the most affordable and accessible educations from a 4-year university in Washington State. This project will support underserved populations in the region, state, and beyond by maintaining facilities that continue to serve all students.

Portions of the project improve access and safety for underserved and vulnerable populations, particularly students with disabilities, non-traditional students, and those relying on access to the JFK Library. The upgrade will enhance ADA compliance and increase access across all campus populations.

Operating budget savings:
EWU maintenance crews spend additional time to maintain, clean, repair, or restrict concrete structures that need to be replaced. This winter, sections of a concrete stairway needed to be closed due to falling pieces of concrete that had been damaged by winter freeze/thaw cycles. Further repairs are beyond the capability of EWU staff and will need to be addressed by a licensed contractor.

Public safety improvements:
As referenced above, areas of campus circulation needed to be taken off-line for safety concerns. This project request would prevent future campus shut-downs, and it would create a safer environment for students, staff, and visitors.

Clarifying details:
This request would address existing concrete infrastructure and circulation that has become unsafe due to components reaching the end of their serviceable life.

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Version: 21 2026 EWU Supplemental Budget

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Project Number: **40000228**
Project Title: **Campus Infrastructure Repairs**

Description

Current conditions of facility/system:
Components that would be addressed and are past the end of their serviceable life include: Concrete stair near PEA entrance (60 plus years old), concrete ramp near JFK entrance (damaged ramp and spalling concrete), portions and components of Concrete Steam Tunnels (over 60 years old), and the paved walk connecting the Reese Pavilion entrance to accessible parking stalls.

See attached photos, proposed construction drawings, and consultant reports that demonstrate the condition and extent of repairs required.

What will the request produce or construct (predesign/design of a building, additional space, etc.)?When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
If successful, this request would replace the concrete stair near PEA, clean and repair the elevated walk and elevator alcove near PEA, the accessible concrete ramp that serves the JFK library, the most damaged portions of campus steam tunnels, as well as multiple paved walkways that serve campus.

The design and drawings for work at PEA stairs and walkway have been completed and are ‘shovel-ready’ to begin work as soon as weather permits. Other components could begin design immediately, with work happening in the spring, summer, and fall of 2026 and summer of 2027.

These projects will be phased across campus, however all work associated with this request would be anticipated to finish by the summer of 2027. Additional phases of work are not included in this request, however other areas would be addressed in future funding requests.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
This request would repair or replace the above mentioned circulation components.

Not taking action would result in further and accelerated damage to campus infrastructure, thereby creating more safety and accessibility challenges across campus. As shown in the attached photos, the stairs at PEA would need to be closed due to safety risks. The ramp at JFK will either need to be closed or replaced. Sections of walkway would also need to be closed due to safety and liability concerns. If no action is taken, there will inevitably be an injury or other traumatic event.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Three options exist and were entertained. One is to repair and replace systems that have reached the end of their life. Option 2 is to close or block off existing circulation routes. Option 3 would be to wait until a catastrophic failure occurs or someone is injured on campus. The best choice is to address the known issues per option 1.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
All current students, faculty & staff, visitors, and the adjacent community would be impacted by this budget request. It would serve all of the current campus, however it is not tied to campus growth.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.
No it does not.

Describe how this project supports the agency’s strategic master plan or would improve agency performance.

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Capital Project Request

2025-27 Biennium

*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 10:48AM

Project Number: **40000228**
Project Title: **Campus Infrastructure Repairs**

Description

Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project supports the master plan by maintaining the condition, health, and function of the campus. It improves performance by reducing operation and maintenance costs associated with deteriorating infrastructure and frequent repairs.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
No, it does not.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
This project does not directly address EUI or carbon emissions.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Performing this work now would positively impact the state resources be preventing a more expensive future repair or replacement.

Is there additional information you would like decision makers to know when evaluating this request?
Ordinarily, some of this work would be incorporated into other adjacent capital projects across campus. Due to a state budget shortfall, Biennial funding for 2025/2027 capital construction was dramatically reduced for EWU. This request is to be able to address some of the most critical work on campus that is currently not funded.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Preservation List

Growth Management impacts
No impacts

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	2,500,000				2,500,000

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2025-27 Biennium

*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 10:48AM

Project Number: **40000228**
Project Title: **Campus Infrastructure Repairs**

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
061-1	EWU Capital Projects-State					
	Total	**2,500,000**	**0**	**0**	**0**	**2,500,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
061-1	EWU Capital Projects-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

This project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place. Although there will be efficiencies, it will not impact overall staff needs across campus.

Capital Project Request

2025-27 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000228	40000228
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Capital Project Request

2025-27 Biennium

*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 11:05AM

Project Number: **40000229**
Project Title: **Campus Roofing Projects**

Description

Starting Fiscal Year: 2026
Project Class: Preservation (State-Owned)
Agency Priority: 3

Project Summary

Project funding is being requested to address failing roof systems that need to repaired or replaced at Showalter Hall and the Arts Complex.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:
The performing arts complex (Art, Music, Radio/Television, Communications, and Theater) and Showalter Hall roof systems are at the end of their useful lives. As a result, instances of damage to building components and contents are happening more frequently.

Opportunity:
Replacing failing roofing systems is the best way to ensure building longevity and condition. It will also result in fewer shutdowns due to emergency repairs.

Priority:
Very High - To prevent further damage to buildings and building content, performing this work within the next year would be the most effective way to address problem areas.

Underserved people/communities:
More than 1 in 3 students at EWU are from diverse backgrounds, and 44% of students are the first in their families to attend college. EWU provides one of the most affordable and accessible educations from a 4-year university in Washington State. This project will support underserved populations in the region, state, and beyond by maintaining facilities that continue to serve all students.

Operating budget savings:
EWU maintenance crews are having to spend more time addressing building leaks on an emergency basis. These inevitably occur at the most inopportune times, resulting in wasted effort to combat the elements while operating in crisis mode.

Public safety improvements:
Along with inconveniences such as classroom closures, scheduling conflicts, and room reassignments, roofing leaks cause substantial public safety concerns. The primary concern is moldy conditions for sensitive users. Other potential safety issues are slippery interior surfaces, damaged electrical components, and the potential for pest infestations in deteriorating buildings. Addressing end-of-life roofing systems is the only way to prevent these safety concerns.

Clarifying details:
This request would address existing infrastructure conditions that have become more urgent in the last few years and that continue to deteriorate at an increasing rate due to components reaching the end of their serviceable life.

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 11:05AM

Project Number: **40000229**
Project Title: **Campus Roofing Projects**

Description

Current conditions of facility/system:
Roofs that would be addressed are, on average, more than 30 years old and at the end of their useful life. Loss of elasticity, cracking and checking roof coatings, deteriorating insulation, and multiple leak points exemplify the roofs in question.

What will the request produce or construct (predesign/design of a building, additional space, etc.)?When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
If successful, this request would replace or repair roof systems for several campus buildings, including: Showalter Hall and the performing arts complex (Art, Music, Radio/Television, Communications, and Theater)

Design work could begin immediately, and the work would be targeted for spring/summer of 2026 and 2027

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
This request would repair and replace aging roof systems thereby protecting buildings, occupants, and contents.

Not taking action would result in continued roofing failures and building leaks at the buildings mentioned. As more water enters the building, the likelihood of building deterioration and hazardous conditions(mold) increase.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Two options were entertained. One is to repair and replace roof systems that have reached the end of their life. Option 2 is to continue to patch leaks reactively on an emergency basis. This is not ideal as leaks will continue to intensify as building systems age and deteriorate further.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
All current students, faculty & staff, visitors, and the adjacent community would be impacted by this budget request. It would serve all of the current campus, however it is not tied to campus growth.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.
No it does not.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project supports the master plan by maintaining the condition, health, and function of the campus. It improves performance by reducing operation and maintenance costs associated with deteriorating infrastructure and frequent repairs.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
No, it does not.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including

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370 - Eastern Washington University
Capital Project Request
2025-27 Biennium

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 11:05AM

Project Number: **40000229**
Project Title: **Campus Roofing Projects**

Description

expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
In the case of a total re-roof, the roof insulation would be replaced as part of the roofing project. This would lessen energy use and carbon emissions while contributing directly to the RCW Clean Building standards. It would lower the EUI of the building and campus as a whole.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Performing this work now would positively impact the state resources be preventing a more expensive future repair or replacement.

Is there additional information you would like decision makers to know when evaluating this request?
Several roof repair and replacement projects are underway or have taken place on campus within the last two years. These have been funded as part of other major projects, ongoing maintenance and repair (backlog reduction funds), and EWU emergency reserve funds. Examples include: Science renovation – phases 1 and 2, Cheney Hall, Aquatics facility, University Rec Center, and other roof repairs.

This supplemental request is for work that is beyond the ability of EWU to undertake within the awarded 25/27biennial budget. Funds requested for this project would go toward the most urgent situations and for buildings that are not anticipated to be renovated within the next 5-10 years.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Preservation List

Growth Management impacts
No impacts

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
057	State Bldg Constr-Unknown	3,500,000				3,500,000

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 11:05AM

Project Number: 40000229
Project Title: Campus Roofing Projects

Funding

Total	**3,500,000**	**0**	**0**	**0**	**3,500,000**

		Future Fiscal Periods			
		2027-29	**2029-31**	**2031-33**	**2033-35**
057	State Bldg Constr-Unknown				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

This project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place. Although there will be efficiencies, it will not impact overall staff needs across campus.

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000229	40000229
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 3:41PM

Project Number: **40000230**
Project Title: **Campus Security and Access Control**

Description

Starting Fiscal Year: 2026
Project Class: Preservation (State-Owned)
Agency Priority: 4

Project Summary

Project funding is being requested to upgrade the campus access control system to improve campus security and to eliminate obsolete technology and hardware that is no longer supported. The project would upgrade the remaining 43 campus buildings on the existing access control system.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:
Eastern Washington University currently relies on INET 7, an outdated and unsupported access control system, across the majority of its campus buildings. The system is failing, with hardware components no longer in productior and increasingly difficult to procure. Maintenance is expensive and time-consuming, often requiring staff to source parts through secondary markets at high cost. System outages have disrupted daily operations and created compliance and safety risks, particularly around ingress/egress, ADA, and emergency response capabilities

Opportunity:
Upgrading to the Genetec access control platform allows EWU to align with current campus access and security standards used across the state. The upgrade will replace unsupported systems with a scalable, secure, cloud-integrated platform, improving reliability, security, ADA compliance, and the overall user experience. Genetec's integration with IT infrastructure, emergency response, and building access systems will enable real time monitoring, better data reporting, and proactive risk management.

Priority:
This project is a high institutional priority. The INET 7 system's obsolescence presents a direct threat to building functionality, life safety, compliance, and operational continuity. Funding is requested to complete the transition to Genetec across 43 additional campus buildings to ensure the safety and operational integrity of all facilities.

Underserved people/communities:
More than 1 in 3 students at EWU are from diverse backgrounds, and 44% of students are the first in their families to attend college. EWU provides one of the most affordable and accessible educations from a 4-year university in Washington State. This project will support underserved populations in the region, state, and beyond by maintaining facilities that continue to serve all students.

The project improves access and safety for underserved and vulnerable populations, particularly students with disabilities, non-traditional students using campus buildings during extended hours, and those relying on access to student services housed in currently unreliable facilities. The upgrade will enhance ADA compliance and increase reliability of building access across all campus populations.

Operating budget savings:
Transitioning from INET 7 to Genetec will result in significant operating budget savings. Labor costs associated with managing, scheduling and repairing the legacy system will be reduced, as will costs associated with sourcing obsolete hardware. Component and software consolidation will reduce ongoing licensing and administrative overhead. Staff time will be redirected toward proactive security and facilities work rather than reactive access failures.

Public safety improvements:

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Report Number: CBS002
Date Run: 9/14/2025 3:41PM

Project Number: 40000230
Project Title: Campus Security and Access Control

Description

The new system will provide reliable access control, real-time logging, lockdown capability, and integration with security and first responder systems. The legacy system has already experienced outages that created building access issues and risked non-compliance with fire and police response requirements. The Genetec system eliminates these vulnerabilities and provides the infrastructure necessary for a secure and responsive campus environment.

Clarifying details:
EWU began this project in early 2024 using internal funds, upgrading the access control systems in seven campus buildings. This second phase will upgrade the remainder of buildings yet to be started. The request seeks funding to complete the project by upgrading the remaining 43 buildings. Without state funding, EWU will be limited to an incremental replacement approach that could extend the project over 10 years

Current conditions of facility/system:
INET 7 is no longer supported by the manufacturer, and many components are no longer available through standarc procurement channels. System performance is unreliable, and its architecture does not support modern IT integration or safety features required for today's campus environment. Buildings currently using this system are at risk of complete access failure.

What will the request produce or construct (predesign/design of a building, additional space, etc.)?When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
The project will complete the next phase of installation of the Genetec access control system for 43 remaining buildings across Eastern Washington University's campus. This includes the removal of legacy INET 7 hardware, installation of new access control hardware, software configuration, data migration, cloud service integration, and systems testing. This project was initiated in early 2024, with 7 buildings selected to complete using institutional funds and a second phase with additional buildings to be upgraded yet to start. If funded, the remainder of the project will be completed within18 months from the project start date. The project is able to be phased, and the university is already working towards completing the first of two phases through internal investment. The current request covers the remainder of EWU buildings, if approved, creating a final phase. The total project cost is estimated at $3.5 million, which includes materials, installation labor, IT integration, and training.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The request directly addresses the obsolescence, safety risks, and operational inefficiencies of the INET 7 system by transitioning to a modern integrated, and reliable Genetec platform. If action is not taken, the university will continue to experience system outages, increased maintenance costs, access and security failures, and risk of noncompliance with fire and life safety codes. Without state funding, the university will continue as lower, phased replacement schedule that will delay full implementation well beyond10years, increasing institutional risk and operational cost

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
EWU has explored alternative vendors and partial system replacements. Genetec was selected due to its compatibility with campus IT systems, proven reliability, integration capabilities, vendor support, and use by other Washington higher education institutions. The university is currently pursuing an alternative incremental replacement strategy due to lack of capital funding, but this approach is unsustainable and leaves most of campus

Description

at risk for continued system failures. A complete, campus wide upgrade remains the most efficient and cost-effective solution to meet the university's security and operational needs.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The budget request impacts the entire university community, including approximately 10,000 students, faculty, and staff. The remaining 43 buildings will be upgraded, bringing full campus coverage under the Genetec system. The improved system ensures that all individuals on campus benefit from consistent, safe, and compliant building access. Special benefit is provided to individuals requiring ADA accommodations and to those accessing support services housed in buildings currently using unreliable access control.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.
No it does not.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project aligns directly with Eastern Washington University's campus master plan, which prioritizes improved access, safety, and transparency for students, faculty, and staff. Reliable building access is foundational to academic programming, facilities utilization, and emergency preparedness. The project supports long-term goals to modernize infrastructure, reduce operational risk, and create a secure, inclusive campus environment. It improves institutional performance by reducing downtime, enhancing system reporting, and streamlining building management operations.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
Yes. The Genetec system includes cloud-based services, integrated hardware, cybersecurity protocols, and coordination with EWU's IT infrastructure. This includes both one time installation and ongoing system support.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
The project may contribute indirectly to carbon reduction by minimizing vehicle patrols, reducing manual labor hours related to building access, and consolidating infrastructure through cloud-based services. These efficiencies support broader campus sustainability goals, although specific emissions metrics are not available at this time

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
The project improves equity by standardizing and securing building access across campus. This benefits students with disabilities, underserved populations requiring consistent access to services, and after-hours users who may face security or accessibility barriers under the current system. Reliable, secure access improves parity in how all members of the university community interact with campus facilities and resources

Is there additional information you would like decision makers to know when evaluating this request?

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Capital Project Request
2025-27 Biennium

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 3:41PM

Project Number: **40000230**
Project Title: **Campus Security and Access Control**

Description

This project has broad institutional support and addresses one of the most consistent points of frustration and risk identified by students, faculty, and staff. The current access control system is unreliable and unsustainable. Eastern Washington University has taken the initiative by beginning early phases of the work and has demonstrated that the Genetec system is an effective, scalable solution. State funding is necessary to complete the project within a reasonable timeframe and ensure that the campus community can focus on education, research, and public service in a safe and accessible environment

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Preservation List

Growth Management impacts
No impact

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057	State Bldg Constr-Unknown	3,750,000				3,750,000
	Total	**3,750,000**	**0**	**0**	**0**	**3,750,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057	State Bldg Constr-Unknown				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
This project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place. Although there will be efficiencies, it will not impact overall staff needs across campus.

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000230	40000230
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

2026 Supp - Information Technology (IT) Decision Package (DP) Fiscal Detail Worksheet

Decision Package Name: Campus Security and Access Control
Expected Fiscal Year to Complete: 2027

Instructions: Use this sheet to provide fiscal detail (IT portion only) for the entire lifecycle of your project/investment.

Anticipated Project/Investment Budget	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035
Number of IT FTEs										
State Employee Staffing Costs	30,000	20000								
Non-State Employee Staffing Costs										
Contracted Professional Services	120,000									
Software Licenses and Subscriptions	45,000	45000	45000	45000	45000	49500	49500	49500	49500	49500
Hardware and Equipment	400,000	100000								
Service Level Agreements		30000	30000	30000	30000	33000	33000	33000	33000	33000
Other										
	595,000	195,000	75,000	75,000	75,000	82,500	82,500	82,500	82,500	82,500
Fund Sources										
001-1: General Fund State	45,000	75,000	75,000	75,000	75,000	82,500	82,500	82,500	82,500	82,500
08A-1: Education Legacy Trust Account										
17F-1: Washington Opportunity Pathways										
001-2: General Fund Federal										
001-C: General Fund Medicaid										
415-1: Personnel Services Account										
xxx-x: Fund Source XXX										
xxx-x: Fund Source XXX										
TOTAL	45,000	75,000	75,000	75,000	75,000	82,500	82,500	82,500	82,500	82,500

2026 Supp - Information Technology (IT) Decision Package (DP) Fiscal Detail Worksheet

Decision Package Name: Campus Security and Access Control
Expected Fiscal Year to Complete: 2027

Instructions: Use this sheet to provide historical fiscal costs (IT portion only) for your project/investment.

Historical Expenditures (Cost)	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
State Employee Staffing Costs										
Non-State Employee Staffing Costs										
Contracted Professional Services										
Software Licenses and Subscriptions										
Hardware and Equipment										
Service Level Agreements										
Other										
	-	-	-	-	-	-	-	-	-	-
Fund Sources										
001-1: General Fund State	20,000	20,000	20,000	20,000	25,000	25,000	25,000	25,000	25,000	28,000
08A-1: Education Legacy Trust Account										
17F-1: Washington Opportunity Pathways										
001-2: General Fund Federal										
001-C: General Fund Medicaid										
415-1: Personnel Services Account										
xxx-x: Fund Source XXX										
xxx-x: Fund Source XXX										
TOTAL	20,000	20,000	20,000	20,000	25,000	25,000	25,000	25,000	25,000	28,000

2026 Supp - Information Technology (IT) Decision Package (DP) Fiscal Detail Worksheet

Decision Package Name: Campus Security and Access Control
Expected Fiscal Year to Complete: 2027

Instructions: Use this sheet to provide estimated maintenance and operations costs (IT portion only) for the project/investment once complete.

Maintenance & Operations Costs	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035
State Employee Staffing Costs	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000
Non-State Employee Staffing Costs										
Contracted Professional Services										
Software Licenses and Subscriptions										
Hardware and Equipment										
Service Level Agreements										
Other										
	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000
Fund Sources										
001-1: General Fund State	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000
08A-1: Education Legacy Trust Account										
17F-1: Washington Opportunity Pathways										
001-2: General Fund Federal										
001-C: General Fund Medicaid										
415-1: Personnel Services Account										
xxx-x: Fund Source XXX										
xxx-x: Fund Source XXX										
TOTAL	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 3:53PM

Project Number: **40000231**
Project Title: **Space Utilization and Student Success**

Description

Starting Fiscal Year: 2026
Project Class: Preservation (State-Owned)
Agency Priority: 5

Project Summary

Project funding is being requested to move several programs from the Spokane campus back to the Cheney Campus, thereby consolidating space and maximizing valuable resources to support student success. This request would move four academic programs from Spokane to the Cheney Campus.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:
Space utilization on the Cheney Campus is not as efficient as it could be, and the impacts of COVID have exacerbated the problem. Low utilization not only reduces campus efficiency, but it also brings negative effects to the long-term success and engagement of students.

Opportunity:
By consolidating some programs from Spokane to the Cheney Campus, space utilization and efficiency will be increased, long-term lease costs will be reduced, and the students will be better supported by adjacent campus facilities and opportunities.

Priority:
This is a very high priority. By making changes over the next 6-12 months, all of the benefits to students and increases in University efficiency may be realized within the current biennium.

Underserved people/communities:
More than 1 in 3 students at EWU are from diverse backgrounds, and 44% of students are the first in their families to attend college. EWU provides one of the most affordable and accessible educations from a 4-year university in Washington State. This project will support underserved populations in the region, state, and beyond by maximizing services to students on campus and connecting them to each other.

Operating budget savings:
EWU will realize operating budget savings by reducing lease costs in Spokane as departments move to the Cheney campus. Better space utilization will maximize the value of existing facilities.

Public safety improvements:
With more students and activity on the Cheney campus, student safety will be increased through more attention, observation, and awareness. Students living in Cheney will also reduce time spent commuting, thereby increasing travel safety.

Clarifying details:
Specific departments and degrees would be strategically moved to Cheney from the Spokane campus. Existing programs that benefit from being located in the City of Spokane, such as nursing, dental hygiene, and other health related programs would remain in Spokane.

Current conditions of facility/system:

Project Number: 40000231
Project Title: Space Utilization and Student Success

Description

As noted above, the Cheney campus is not currently utilized to its full capacity. Student enrollment, on-line programs, and a general decrease in the number of students attending higher ed have contributed to lower space utilization.

What will the request produce or construct (predesign/design of a building, additional space, etc.)?When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
If successful, this request would move four academic programs that are currently accommodated in Spokane to the Cheney Campus. Faculty offices would move, and classes would be taught in existing classroom space in Cheney. Departmental moves will require cleaning and minor updates to room finishes. AV equipment will also be updated to accommodate contemporary education methods.

Planning is underway, and depending on class schedules, moves could happen as early as the summer of 2026. The work would be phased as required to accommodate classroom schedules and breaks in instruction.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
This request would directly address the problem by increasing the use and density on the Cheney campus and by providing the support and services that students need to thrive.

Not taking action would result in no changes to utilization, campus efficiency, lease cost savings, or student success.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
One option is to continue with the status quo and hope for enrollment to pick up. While the University is actively working on strategies to increase enrollment, the reality is this will take more time.

The preferred option, for all of the reasons mentioned above, is to make a small investment for the largest impact while at the same time continuing to find ways to attract and accommodate future students.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
Benefits of a more vibrant campus would be felt by all current students, faculty, and staff as well as the individual programs that are being moved to Cheney.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.
No it does not.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project supports the master plan by maintaining the health, and vitality of the campus. It improves performance by maximizing resources and by reducing lease costs. Most importantly, it supports the success and experience of EWU students.

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Capital Project Request
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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 3:53PM

Project Number: 40000231
Project Title: Space Utilization and Student Success

Description

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.

No, it does not

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
This project does not directly address EUI or carbon emissions. However, it would decrease the amount of energy and resource consumption on a per student basis, and it reduces the amount of greenhouse gas emissions due to transportation.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
By reducing the transportation required to attend classes this project makes education more accessible and more attainable to disadvantaged students. It also creates a better learning environment for the students that EWU serves.

Is there additional information you would like decision makers to know when evaluating this request?

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Preservation List

Growth Management impacts
No impacts

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
057	State Bldg Constr-Unknown	3,000,000				3,000,000
	Total	**3,000,000**	**0**	**0**	**0**	**3,000,000**

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Capital Project Request

2025-27 Biennium

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 3:53PM

Project Number: 40000231
Project Title: Space Utilization and Student Success

Funding

		Future Fiscal Periods			
		2027-29	2029-31	2031-33	2033-35
057	State Bldg Constr-Unknown				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

This project consists of moving faculty and minor upgrades to existing educational space that already has operating funding in-place. Although there will be efficiencies, it will not impact overall staff needs across campus.

Capital Project Request

2025-27 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000231	40000231
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 9:59PM

Project Number: **40000232**
Project Title: **Decarbonization and Building Demolition**

Description

Starting Fiscal Year: 2026
Project Class: Preservation (State-Owned)
Agency Priority: 6

Project Summary

Project funding is being requested to demolish Pearce Hall, Dressler Hall, and Morrison Hall to help meet state decarbonization and energy use goals as well as aligning building area to campus needs.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:
There are existing buildings on campus that have met the end of their useful life, are no longer feasible to renovate, and contribute to excessive energy use. Additionally, Morrison and Dressler Hall are currently unoccupied and pose safety concerns to students and the campus.

Opportunity:
By demolishing Pearce Hall, Dressler Hall, and Morrison Hall, EWU will be able to realize short and long-term operation and maintenance savings, energy savings, and an immediate reduction in the campus carbon footprint.

Priority:
This project is a high priority. The buildings are starting to attract vandalism and are becoming a safety concern on campus. They are continuing to deteriorate and this will increase over time as mold and pests become an increasing concern. At present, they require heating so that building systems do not freeze. This results in wasted energy and carbon emissions.

Underserved people/communities:
More than 1 in 3 students at EWU are from diverse backgrounds, and 44%of students are the first in their families to attend college. EWU provides one of the most affordable and accessible educations from a 4-year university in Washington State. This project will support underserved populations in the region, state, and beyond by maintaining facilities in a healthy state so all students may thrive.

Operating budget savings:
EWU currently expends resources to heat the buildings in winter, secure them from trespassing, monitor vandalism and safety concerns, and address emergency repairs of life safety systems that must be maintained.

All of these operating costs would be eliminated, and staff time would be made available to perform other critical functions across the remainder of campus.

Public safety improvements:
As noted above, this project request would directly address the safety concerns posed by buildings that are vacant or underutilized. Building Maintenance and law enforcement are required to monitor and prevent trespassing, and building vandalism is becoming more of an issue. Multiple instances of break-ins and graffiti have occurred this year alone, and there is a growing concern that the public will be injured on or near these buildings. Additional efforts have taken place this year to ‘safe up’ the buildings by reinforcing windows with plywood and working the local building officials to close the buildings.

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Project Title: Decarbonization and Building Demolition

Description

Clarifying details:

Current conditions of facility/system:
The buildings that would be demolished are over 60 years old. If the need for this space existed, it would be more expensive to renovate them than it would be to construct new facilities. In this case, the need does not exist and they are continuing to be a burden to the University. Demolishing them would accomplish multiple goals.

What will the request produce or construct (predesign/design of a building, additional space, etc.)?When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
If successful, this request would remove Pearce Hall, Dressler Hall, and Morrison Hall from the Cheney Campus. Drawings and specifications for the demolition of Morrison Hall have already been produced, and solicitation for that work could begin immediately. Documents for Pearce and Dressler could start right away, with anticipated demolition to commence in the summer of 2026 through early 2027.

This project could be phased by removing Morrison and then Pearce and Dressler separately. The request currently covers all three structures. See attached C-100 cost estimates.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The request would address all of the problems and opportunities by removing the mentioned buildings from the EWU campus.

Not taking action would result in continued safety and liability concerns for the campus, continued consumption of energy for no benefit, and wasted effort on the part of EWU maintenance staff.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
An alternative to renovate the buildings was entertained, however this was not feasible due to cost and the ability of a renovated facility to meet current needs and demand. Demolishing the buildings provides the most benefit to the campus as a whole.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
All current students, faculty, and staff would benefit from a safer campus that uses fewer resources.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.
No it does not.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project supports the master plan by maintaining the condition, health, and function of the campus. It improves performance by reducing operation and maintenance costs associated with deteriorating infrastructure. It also adds to the student experience by increasing density on campus.

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Project Title: **Decarbonization and Building Demolition**

Description

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
No, it does not.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
Removing these buildings directly contributes to meeting the greenhouse gas emissions and Clean Building standards in two ways. First, the energy use and carbon production of these buildings would be eliminated. Second the overall campus EUI would be improved due to reducing the campus area.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Performing this work now would positively impact the state resources by reducing long-term O&M costs.

Is there additional information you would like decision makers to know when evaluating this request?
The demolition of Morrison is a shovel ready project that has complete drawings and specifications in place. Due to a lack of funding at the time, work was never completed. By removing all three buildings, efficiency and cost savings may be maximized through economies of scale.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Preservation List

Growth Management impacts
No impacts

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057	State Bldg Constr-Unknown	7,466,000				7,466,000
	Total	**7,466,000**	**0**	**0**	**0**	**7,466,000**

OFM

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Project Title: **Decarbonization and Building Demolition**

Funding

		Future Fiscal Periods			
		2027-29	**2029-31**	**2031-33**	**2033-35**
057	State Bldg Constr-Unknown				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

This project consists of demolition of existing facilities and building systems that are largely unoccupied. Although there will be efficiencies, it will not impact overall staff needs across campus.

OFM

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000232	40000232
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2025

Agency	Eastern Washington University
Project Name	Decarbonization and Building Demolition
OFM Project Number	40000232

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-5705
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	280,040	MACC per Gross Square Foot	$17
Usable Square Feet		Escalated MACC per Gross Square Foot	$18
Alt Gross Unit of Measure			
Space Efficiency	0.0%	A/E Fee Class	B
Construction Type	Dormitories	A/E Fee Percentage	9.23%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	No
Inflation Rate	3.16%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	5%		
Base Month (Estimate Date)	August-25	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start		Predesign End	
Design Start	July-26	Design End	October-26
Construction Start	January-27	Construction End	June-27
Construction Duration	5 Months		

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Project Cost Summary

Total Project	$7,114,972	Total Project Escalated	$7,466,011
		Rounded Escalated Total	$7,466,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$7,466,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$320,982		
Extra Services	$140,000		
Other Services	$144,210		
Design Services Contingency	$30,260		
Consultant Services Subtotal	**$635,452**	**Consultant Services Subtotal Escalated**	**$659,466**

Construction			
Maximum Allowable Construction Cost (MACC)	$4,800,000	Maximum Allowable Construction Cost (MACC) Escalated	$5,045,040
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$240,000		$252,360
Non-Taxable Items	$0		$0
Sales Tax	$448,560	Sales Tax Escalated	$471,469
Construction Subtotal	**$5,488,560**	**Construction Subtotal Escalated**	**$5,768,869**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$390,961		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$390,961**	**Project Administration Subtotal Escalated**	**$411,096**

Other Costs			
Other Costs Subtotal	**$600,000**	**Other Costs Subtotal Escalated**	**$626,580**

Project Cost Estimate			
Total Project	**$7,114,972**	Total Project Escalated	**$7,466,011**
		Rounded Escalated Total	**$7,466,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$659,466		$659,466		**$0**
Construction					
Construction Subtotal	$5,768,869		$5,768,869		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$411,096		$411,096		**$0**
Other Costs					
Other Costs Subtotal	$626,580		$626,580		**$0**
Project Cost Estimate					
Total Project	**$7,466,011**	**$0**	**$7,466,011**	**$0**	**$0**
	$7,466,000	**$0**	**$7,466,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Demolition of Pearce Hall, Dressler Hall, and Morrison Hall
Insert Row Here

What has been completed or is underway with a previous appropriation?
Nothing to date
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

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**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0277**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$320,982			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$320,982**	**1.0326**	**$331,447**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$60,000			
Geotechnical Investigation				
Commissioning				
Site Survey	$35,000			
Testing				
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant	$45,000			
Other				
Insert Row Here				
Sub TOTAL	**$140,000**	**1.0326**	**$144,564**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$144,210			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$144,210**	**1.0515**	**$151,637**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$30,260			
Other				
Insert Row Here				
Sub TOTAL	**$30,260**	**1.0515**	**$31,818**	Escalated to Mid-Const.

CONSULTANT SERVICES TOTAL	**$635,452**	**$659,466**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements	$300,000			
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$300,000**	**1.0443**	**$313,290**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0443**	**$0**	
3) Facility Construction				
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				
Other Direct Cost				
Demolition	$4,500,000			
Sub TOTAL	**$4,500,000**	**1.0515**	**$4,731,750**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$4,800,000**		**$5,045,040**	
	$17		*$18 per GSF*	

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7) Owner Construction Contingency				
Allowance for Change Orders	$240,000			
Other				
Insert Row Here				
Sub TOTAL	**$240,000**	**1.0515**	**$252,360**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0515**	**$0**	
9) Sales Tax				
Sub TOTAL	**$448,560**		**$471,469**	
CONSTRUCTION CONTRACTS TOTAL	**$5,488,560**		**$5,768,869**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0515**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0515**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$37,330				0.5% of total project cost for new and renewal construction
Other	-$37,330				Not applicable
Insert Row Here					
ARTWORK TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$390,961				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$390,961**		**1.0515**	**$411,096**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal	$600,000				
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$600,000**		**1.0443**	**$626,580**	

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C-100 (2026)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 10:24PM

Project Number: **40000233**
Project Title: **Carbon Capture**

Description

Starting Fiscal Year: 2026
Project Class: Preservation (State-Owned)
Agency Priority: 7

Project Summary

Eastern Washington University (EWU) is undertaking a Carbon Capture Demonstration Project to address its significant greenhouse gas (GHG) emissions, particularly those generated by its central steam plant, which accounts for approximately 73% of the university's Scope 1 and 2 emissions. With current emissions 4% above 2005 levels, EWU faces a legislative mandate under RCW 70A.45.050 to reduce emissions by 45% by 2030, 70% by 2040, and 95% by 2050. The project will deploy a modular carbon capture system at the Rozell Plant to intercept and process flue gas emissions from natural gas combustion, thereby reducing the volume of CO2 released into the atmosphere. This initiative serves as a near-term mitigation strategy while EWU continues to develop and implement long-term decarbonization plans for its campus infrastructure. In addition to supporting statewide GHG reduction goals, the project aligns with the Clean Buildings Performance Standards outlined in RCW 19.27A.210. These standards require covered buildings to meet energy use intensity targets and implement operational improvements that reduce fossil fuel consumption. By capturing and diverting CO2 emissions from the central plant, EWU is directly reducing the carbon intensity of its district energy system, thereby improving building performance and contributing to compliance with state energy benchmarks. The project also supports broader goals of energy efficiency and environmental stewardship, positioning EWU as a leader in sustainable campus operations and providing a replicable model for other institutions with similar infrastructure challenges.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:
Eastern Washington University (EWU) faces several significant challenges in meeting Washington State's greenhouse gas(GHG)reduction regulations, particularly those outlined in RCW 70A.45.050 andRCW19.27A.210. The university is currently emitting 4% more GHGs than it didin2005, despite being mandated to reduce emissions by 45% by 2030, 70% by 2040,and 95% by 2050. The primary source of these emissions is the central steam plant, which burns natural gas to provide heating across campus and contributes approximately 14,000 tons of CO2 annually —accounting for 73% of EWU's Scope 1 and 2 emissions. Transitioning away from fossil fuels will require major infrastructure upgrades, long-term planning, and substantial financial investment, making it difficult to meet near-term reduction targets without interim solutions.

In addition to these GHG reduction mandates, EWU must comply with the Clean Buildings Performance Standards under RCW 19.27A.210, which require buildings to meet specific energy use intensity (EUI) targets and implement operational improvements. The centralized nature of EWU's district heating system presents a challenge in meeting these standards, as older infrastructure is less energy-efficient and harder to retrofit. Without significant upgrades, the university risks non-compliance with both emissions and energy performance regulations. The Carbon Capture Demonstration Project offers a practical, near-term strategy to reduce emissions from existing infrastructure, helping EWU move toward compliance while continuing to provide reliable heating and advancing its broader sustainability goals.

Opportunity:
The EWU Carbon Capture Demonstration Project presents a range of opportunities for Eastern Washington University to advance its sustainability goals and meet state-mandated climate regulations. By implementing a modular carbon capture system at the central steam plant, EWU can significantly reduce its greenhouse gas emissions, particularly those resulting from natural gas combustion used for campus heating. This reduction directly supports compliance with RCW 70A.45.050, which requires state institutions to achieve steep declines in Scope 1 and 2 emissions over the coming decades. The project also provides a practical, near-term solution while the university continues to develop and fund long-term infrastructure upgrades necessary for full decarbonization.

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Description

Beyond emissions reductions, the project supports EWU's efforts to meet the Clean Buildings Performance Standards outlined in RCW19.27A.210. These standards require buildings to meet energy use intensity targets and demonstrate operational improvements that reduce fossil fuel reliance. By capturing and diverting CO2 emissions from the central plant, EWU enhances the energy performance of its district heating system and contributes to the broader goals of energy efficiency and environmental stewardship. Additionally, the project creates educational and research opportunities for students, strengthens partnerships with local clean energy companies, and positions EWU as a leader in climate innovation among Washington's public institutions.

Priority:
This project is a high priority as it will directly decrease the campus carbon emissions. It will be the first carbon capture system of this scale on a college campus in the state of Washington. Along with decarbonization, this demonstration project will provide a valuable example of how new technology can contribute to the environmental goals of the state.

Underserved people/communities:
The EWU Carbon Capture Demonstration Project offers meaningful support to underserved communities by addressing both environmental and educational equity. A sizable portion of EWU's student body comes from low-income, rural, and historically excluded populations—60% are from EasternWashington,38% are Pell-eligible, 37% identify as non-white, and 44% are first-generation college students. These communities are disproportionately affected by climate change and environmental degradation. By reducing greenhouse gas emissions from the university's central steam plant, the project directly improves air quality and environmental health in the surrounding region.

Beyond environmental benefits, the project creates educational and workforce development opportunities for students from underserved backgrounds. EWU plans to integrate the carbon capture system into its curriculum as a living laboratory, offering hands-on research experiences in sustainability and clean energy. The university also partners with Carbon Quest to provide internships and career pathways in the emerging clean energy sector. These efforts ensure that students from overburdened communities gain access to cutting-edge technology, real-world experience, and the skills needed to become leaders in climate resilience and environmental justice.

Operating budget savings:
The EWU Carbon Capture Demonstration Project is expected to yield indirect operational budget savings primarily through reductions in greenhouse gas emissions. These efficiencies contribute to a lower levelized cost of carbon and help EWU meet regulatory requirements under RCW70A.45.050 and RCW 19.27A.210, potentially avoiding future penalties or costly retrofits. Moreover, by capturing and repurposing CO2, the university may benefit from emerging carbon markets or partnerships with industries that utilize captured carbon, such as green cement manufacturers. These factors collectively can support long-term operational savings while advancing EWU's sustainability and compliance goals.

Public safety improvements:
A new system added to the campus boiler system. Aside from reducing greenhouse gas emissions, the system does not provide any new public safety improvements.

Clarifying details:
The project captures CO2 emissions from EWU's central steam plant, which currently emits ~14,000 tons of CO2 annually. The system will capture approximately 10 % of annual emissions.
Many EWU students and surrounding community members come from low-income and rural areas with high environmental health disparity scores.

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Project Number: **40000233**
Project Title: **Carbon Capture**

Description

By reducing greenhouse gas emissions, the project helps mitigate climate-related risks such as extreme heat, wildfires, and poor air quality days, all of which pose public safety threats.
The project supports long-term carbon sequestration strategies (e.g., green cement), which contribute to broader efforts to stabilize the climate and reduce environmental hazards.
The system will be used as a living laboratory, educating students on climate technologies and public health impacts, fostering a people and climate conscious future workforce.
Helps EWU meet RCW70A.45.050 and RCW 19.27A.210, reducing the risk of non-compliance penalties and ensuring safer, more sustainable campus operations.

Current conditions of facility/system:
EWU's current campus heating system is based on a central district steam system. Through the combustion of natural gas, boilers convert water to steam, which is then distributed through a series of underground pipes and provides the heat to buildings across campus. Replacing this central steam system involves significant costs, technical challenges, and longtime lines. Deploying a carbon capture system on the current boiler system will allow EWU to reduce near-term missions while we plan for a long-term strategy to replace fossil fuels in the campus heating process.

What will the request produce or construct(predesign/design of a building, additional space, etc.)? When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
The EWU Carbon Capture Demonstration Project will result in the construction and deployment of a modular carbon capture system adjacent to the university's Rozell central steam plant. This system will be integrated into the existing infrastructure and is designed to capture carbon dioxide emissions from the combustion of natural gas used for campus heating. The project includes engineering design, site preparation, equipment installation, and instrumentation for performance monitoring. It does not involve constructing a new building but rather enhancing existing facilities with advanced carbon capture technology.

Total project cost is estimated at $5,100,000. EWU has been awarded $1,913,723 through a Clean Energy Fund Grant from the WA Department of Commerce. We are currently in design with McKinstry through an Energy Service Performance Contract and expect to have guaranteed maximum pricing for the project by October 2025. We are seeking the remaining funds from the supplemental budget process.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The Carbon Capture Demonstration Project directly addresses EWU's urgent need to reduce greenhouse gas emissions and comply with state regulations outlined in RCW 70A.45.050 and RCW 19.27A.210. By installing a modular carbon capture system at the university's central steam plant, the project provides a practical, near-term solution to reduce CO2 emissions from existing infrastructure. This system will intercept and process flue gas emissions from natural gas combustion, capturing and converting CO2 into a liquid form for sequestration or reuse. The project enables EWU to make measurable progress toward its mandated emission reduction targets and energy performance standards without requiring immediate, large-scale infrastructure overhauls.

If no action is taken, EWU risks continued non-compliance with state greenhouse gas reduction mandates and Clean Buildings Performance Standards. This could result in regulatory penalties, increased operational costs, and reputational harm. Moreover, the university would continue emitting approximately 14,000 tons of CO2 annually, undermining its sustainability goals and contributing to environmental and public health risks. Without interim solutions like carbon capture to reduce some of these emissions, EWU's reliance on fossil fuels for campus heating would persist, delaying the transition to a low-carbon future and missing opportunities to lead in climate innovation and workforce development.

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Capital Project Request

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
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Project Number: 40000233
Project Title: Carbon Capture

Description

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
No other alternatives have been explored for a carbon capture system. This project is being developed in partnership with Carbon Quest, a local Spokane Valley manufacturing firm, to provide a carbon capture system that will result in near-term carbon reductions for EWU and a demonstration facility for Carbon Quest

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The clientele impacted by the budget request for the EWU Carbon Capture Demonstration Project includes students, faculty, staff, and surrounding communities—particularly those from overburdened and vulnerable populations. Many of these individuals come from low-income, rural areas that are disproportionately affected by climate change and environmental health disparities. The project will directly benefit these groups by improving air quality and reducing greenhouse gas emissions from the campus's central steam plant.

The project will add one modular carbon capture unit to the Rozell central steam plant, which processes 800 standard cubic feet per minute of flue gas. This unit is expected to capture approximately 1,500 metric tons of CO2 annually, resulting in an estimated 10 % net reduction in campus carbon emissions from the central plant. Beyond environmental benefits, the project will serve as a living laboratory for students, enhancing educational opportunities in sustainability and clean energy. It will also create jobs during construction and operation, including engineering roles, trade positions, and internships. Communities served include EWU's campus population, nearby residents in Cheney and Spokane County

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.
No it does not.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
The Carbon Capture Demonstration Project at EWU directly supports the university's strategic master plan and improves agency performance by advancing key goals outlined in EWU's Climate Action Plan, Strategic Plan, and decarbonization feasibility efforts. EWU's Climate Action Plan is a living document that guides the university's pathway to carbon neutrality by 2050, in alignment with Washington State mandates under RCW 70.235 and RCW19.27A.210.The action plan identifies the central steam plant—responsible for73% of Scope1 and 2 emissions—as the primary source of greenhouse gases on campus, and emphasizes the need for interim solutions while long-term infrastructure upgrades are planned.

The Carbon Capture Demonstration Project enables EWU to reduce emissions from existing infrastructure without requiring immediate, large-scale retrofits, thereby supporting the climate action plan's near-term2030 goal of a 45% reduction in emissions. The project also aligns with EWU's Strategic Plan (2024–2029), which prioritizes sustainability, innovation, and responsiveness to evolving environmental and technological landscapes. By integrating carbon capture technology into campus operations, EWU demonstrates leadership in clean energy innovation and fulfills its commitment to environmental stewardship, while serving as a living laboratory for students, enhancing academic programming and workforce development in sustainability and clean technology fields

Does this project include IT related costs, including hardware, software, cloud-based services, contracts or staff? If yes, attach IT Addendum.

Description

No, it does not.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
The EWU Carbon Capture Demonstration Project contributes directly to meeting Washington State's greenhouse gas emissions limits and Clean Buildings performance standards by deploying a modular carbon capture system at the university's central steam plant, which is the largest source of emissions on campus. This system will capture and liquefy CO2 from natural gas combustion, reducing annual emissions by approximately 1,500 metric tons, which equates to an approximately 10 % reduction in emissions from the plant and a 9% reduction in campus-wide emissions. These reductions help EWU move toward compliance with the greenhouse gas limits established in RCW70A.45.050.

In addition, the project supports compliance withRCW19.27A.210 by improving the operational efficiency of EWU's district heating system. The Clean Buildings performance standards require buildings to meet energy use intensity (EUI) targets and implement operational improvements. By integrating carbon capture technology into existing infrastructure, EWU can reduce the carbon intensity of its heating operations without requiring immediate, large-scale retrofits—an important consideration given the age and complexity of the system.

The project is also aligned with statewide goals to reduce carbon pollution and improve efficiency. It was informed by feasibility studies and decarbonization planning efforts that identified carbon capture as a viable interim strategy while longer-term infrastructure upgrades are developed. As a demonstration project, it will generate performance data and life cycle assessments that will guide future implementation and scaling, both at EWU and peer institutions. This positions EWU as a leader in clean energy innovation and regulatory compliance.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
The EWU Carbon Capture Demonstration Project advances equity in Washington State by directly benefiting communities that are disproportionately impacted by climate change and environmental health disparities. Eastern Washington University serves a diverse student population, with 60% of students from Eastern Washington, 35% Pell-eligible, 37%identifyingas non-white, and 44% being first-generation college students. Many of these students come from low-income, rural areas that are more vulnerable to environmental degradation and economic instability.

Geographically, the project is located in Cheney, WA, which has a poverty score of 9/10 on the Washington Environmental Health Disparities Map. Surrounding areas in Spokane County, where many EWU students reside, score as high as 10/10. These communities face elevated risks from air pollution and climate-related health impacts. By reducing greenhouse gas emissions from the university's central steam plant—currently the largest source of emissions on campus—the project will improve local air quality and contribute to healthier living conditions for these populations.

The project also addresses disparities by creating educational and workforce development opportunities for students from historically excluded communities. Through integration into EWU's curriculum and research programs, the carbon capture system will serve as a living laboratory, providing hands-on experience in clean energy technologies. Additionally, EWU's

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Project Title: Carbon Capture

Description

partnership with Carbon Quest includes internship and employment pathways that prioritize students from overburdened communities, helping to build a more inclusive and resilient clean energy workforce.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern Washington University's Carbon Capture Demonstration Project isa critical and timely intervention to address the university's largest source of greenhouse gas emissions—its central steam plant—which currently accounts for 73% of campus-wide emissions. With state-mandated reduction targets rapidly approaching and EWU's emissions still above 2005levels, immediate action is needed. This project deploys a scalable, modular carbon capture system that will reduce emissions by an estimated 1,500 metric tons annually, helping EWU meet regulatory requirements while maintaining essential heating services. It also provides hands-on learning opportunities for students, many of whom come from overburdened communities, and positions EWU as a replicable model for other institutions facing similar infrastructure challenges. Delay risks non-compliance, missed climate goals, and lost opportunities to lead in clean energy innovation.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Preservation List

Growth Management impacts
No impacts

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
26C	Climate Commit Accou-Unknown					
26C-1	Climate Commit Accou-State	3,600,000				3,600,000
	Total	**3,600,000**	**0**	**0**	**0**	**3,600,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
26C	Climate Commit Accou-Unknown				
26C-1	Climate Commit Accou-State				

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Project Number: 40000233
Project Title: Carbon Capture

Funding

Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

This project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place. It will not impact overall staff needs across campus.

OFM

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000233	40000233
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 11:35PM

Project Number: **40000234**
Project Title: **EWU Large Solar Array**

Description

Starting Fiscal Year: 2026
Project Class: Program Improvement (State-Owned)
Agency Priority: 8

Project Summary

The EWU Large Solar Array Project is a proposed 1.45 MW ground-mounted solar photovoltaic system designed to advance Eastern Washington University's sustainability goals while integrating education, research, and ecological restoration. Strategically located across three zones on the Cheney campus, the system will generate over 1.8 million kWh of clean electricity annually, offsetting campus energy use and avoiding approximately 1,422 metric tons of CO2 emissions, while reducing operating costs. It supports compliance with Washington's Clean Buildings Performance Standard and greenhouse gas reduction mandates under RCW 70A.45.050, while also laying the groundwork for future microgrid integration and infrastructure resilience. The system includes module-level monitoring and is routed through EWU's electrical system, ensuring efficient campus-wide energy distribution. Beyond its environmental impact, the project is designed as a living laboratory that enhances academic engagement and public awareness. It will support interdisciplinary research in engineering, ecology, pollinator dynamics, and climate science, while offering hands-on learning opportunities through coursework, internships, and field studies. Located in a region with high environmental health disparities, the project demonstrates EWU's leadership in climate action and community resilience. Public-facing features such as QR-enabled dashboards and interpretive signage will help educate the broader community about the role of renewable energy in addressing climate change. Overall, the Large Solar Project positions EWU as a model for sustainable campus development and proactive compliance with state climate regulations

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem:
Eastern Washington University (EWU) faces significant challenges in meeting the requirements of the Washington State Clean Buildings Performance Standard and House Bill 1390, which mandates aggressive decarbonization and energy efficiency improvements for public institutions. These mandates impose a tight timeline for compliance, requiring EWU to rapidly reduce its carbon footprint and energy use intensity across campus facilities. However, the university's existing infrastructure presents technical limitations, particularly the inadequacy of rooftop solar potential and aging building systems—which complicate efforts to meet these standards through conventional retrofits alone. The cost of compliance is also a major concern, as the capital investment required for energy upgrades, renewable energy systems, and supporting infrastructure is substantial, and not all expenses are eligible for federal or state incentives. Additionally, the complexity of integrating new systems into EWU's existing utility and electrical networks introduces technical and administrative hurdles, especially in ensuring compatibility with the Cheney Light Department, Avista, and Bonneville Power Administration(BPA)interconnection requirements. These challenges underscore the need for innovative, scalable, and cost-effective solutions that align with both regulatory timelines and institutional capacity.

Opportunity:
The EWU large solar array addresses the university's challenges under the Washington Clean Buildings Performance Standard and House Bill 1390 by offering a scalable, ground-mounted solar solution that reduces campus carbon emissions and energy costs. Unlike rooftop solar, which was found to be limited in capacity and feasibility, the proposed 1.45 MW system utilizes underused land and integrates with EWU's electrical distribution system to deliver clean energy directly to the campus grid. This helps EWU meet compliance timelines by accelerating decarbonization efforts while reducing utility operating costs. The system is designed with technical resilience in mind, including module-level monitoring, fire safety compliance, and compatibility with future microgrid integration—ensuring long-term operational reliability and regulatory alignment.

Beyond compliance, the project creates transformative opportunities for EWU. It establishes the university as a regional leader in sustainability and applied energy education by serving as a living laboratory for students and faculty. The system supports interdisciplinary research in ecology, engineering, and climate science, while also generating financial savings that can be reinvested into additional energy savings projects. Public engagement is enhanced through interpretive signage, real-time

Description

dashboards, and curriculum integration. Additionally, the infrastructure is future-proofed for expansion, enabling EWU to scale its renewable energy portfolio as funding and policy evolve. This positions the university not only to meet state mandates but to lead in innovation, equity, and environmental stewardship.

Priority:
This is a high priority project not only for energy savings and lowering the campus EUI, but also for the applied learning opportunities it will provide to EWU STEM programs.

Underserved people/communities:
As a university composed of students, faculty, and staff from around the Pacific Northwest, it is paramount that we address our carbon footprint and do our part to reduce our greenhouse emissions and lessen the burden of climate change experienced by those who support EWU. Of the10,746students who attend EWU, 60% are from Eastern Washington, 38% are Pell-eligible, 37% of the students identify as non-white, and 44% of the students are the first in their families to earn a college degree. EWU is proud to be named the #1 college for diversity in Washington and to provide the lowest tuition of any public four-year institution in the state. Many of our students come from low-income, rural communities that are more likely to experience the effects of climate change. Therefore, we must not only quickly reduce our greenhouse gas emissions but provide educational opportunities that will inspire the next generation of leaders to address all aspects of climate change in their communities and abroad. The Washington Environmental Health Disparities map for Cheney, WA, where the solar array will be installed, further emphasizes this concern with a9/10 rating for those living in poverty. Looking more broadly at Spokane County, where many of EWU's students come from, the Environmental Health Disparities scores run as high as10/10 for many of these local communities. Installing a large solar will help to immediately reduce greenhouse gas emissions while demonstrating to the region, and beyond, the role of this technology in mitigating emissions.

Additionally, the project enhances access to hands-on learning and career pathways in clean energy, sustainability, and ecological restoration—fields that are often less accessible to students from underrepresented backgrounds. By integrating the solar array into coursework ,internships, and research opportunities, EWU is creating a platform for inclusive academic engagement. The visibility of the project and its public-facing educational tools (like QR-enabled dashboards and interpretive signage) also help raise awareness about climate justice and the role of renewable energy in supporting community resilience. This positions EWU not only as a sustainability leader but as an institution actively working to close opportunity gaps.

Operating budget savings:
The solar array is estimated to save $78,092 per year based on current electricity billing rates. These savings are expected to escalate over time in line with utility rate increases, providing long-term financial relief to the university's operating budget.

Public safety improvements:
This array will be a new addition to campus, and therefore does not provide public safety improvements to existing infrastructure. The array itself if designed with multiple safety features that have been developed in close coordination with the City of Cheney's Fire Department. These include:
20-foot fire access lanes at each array location to allow emergency vehicle access and hose reach within 200 feet of any array.
13.5-foot vertical clearance for emergency vehicles.
10-foot brush-free buffer zones around arrays to prevent fire spread.
Managed vegetation height of 12 inches or less, in compliance with IFC 1205.5.1, to reduce flame height and fire risk.
Concrete pads with 10-foot clearance for all high-voltage equipment (inverters, transformers, combiner panels).
Module-level rapid shutdown devices (SolarEdge optimizers)to isolate power during emergencies—exceeding NEC 690.12 requirements for ground-mounted systems.
Solar Scrim safety netting installed behind arrays to prevent human or animal contact with high-voltage DC wiring.
Fenced enclosures around all electrical equipment to restrict access during student research or grazing activities.

Clarifying details:
Compliance with Clean Buildings Performance Standard and RCW70A.45.050: Installing the solar array now enables EWU to begin generating clean energy immediately and demonstrate proactive compliance with these mandates. Delaying

Description

implementation risks missing incentive windows, increasing retrofit costs, and facing regulatory penalties. Early action positions EWU as a leader in sustainability and ensures alignment with state climate goals.

Purpose-Built as a Learning Laboratory: The system is intentionally over-specified compared to commercial solar installations to support advanced monitoring, ecological research, and student engagement. This includes module-level optimization, ecological restoration zones, and integrated safety features.

No Rooftop Viability: Previous feasibility studies at EWU found rooftop solar installations to be insufficient for meeting energy goals, prompting a strategic pivot to ground-mounted systems.

Fire Safety and Code Compliance: The design includes fire lanes, vegetation height limits, and module-level shutdown devices, all reviewed and approved by the City of Cheney Deputy Fire Chief.

Infrastructure Integration: Power from the arrays will be routed through EWU's existing utility tunnel system to the Rozell Power Plant, minimizing surface disruption and installation costs while supporting future microgrid integration1.

Phased Expansion Potential: The system is designed to accommodate future growth, including a potential solar carport and increased PV capacity, with oversized electrical components and conduit pathways already planned.

Ecological Co-Benefits: The project supports biodiversity, pollinator habitats, and soil health, with faculty-led research planned to monitor ecological impacts under different solar configurations.

Current conditions of facility/system:
EWU currently does not have any significant solar generation on campus. Adding on campus solar generation will improve the reliability of campus electrical grid to provide power, reduce utility operating costs and greenhouse gas emissions, and lower the overall campus Energy Use Intensity(EUI).

What will the request produce or construct(predesign/design of a building, additional space, etc.)? When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
The request will produce a 1.45 MW DC ground-mounted solar photovoltaic system across three zones on the EWU Cheney campus. This includes:
2,500 bifacial solar modules (Heliene 580W)
Terrasmart Terraglide fixed-tilt racking systems.
SolarEdge three-phase inverters with module-level optimization.
Pad-mounted transformers and fenced electrical enclosures.
Medium-voltage electrical integration via EWU's utility tunnel to the Rozell Power Plant.
Monitoring infrastructure for operational diagnostics and educational use.
The system is designed not only for energy generation but also as a living laboratory for research, curriculum integration, and ecological restoration.
Timeline: Project is estimated to take 18 months to complete once funding is received. This timeline includes final design and construction.
Phasing: Yes, the project can be phased. The feasibility study identifies three distinct zones. Each area has independent electrical infrastructure and can be constructed separately. The feasibility study includes full design and cost estimates for all three zones, allowing for phased implementation depending on funding availability.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The project presents a timely and strategic opportunity for Eastern Washington University to meet its sustainability goals while complying with critical state mandates. By constructing a 1.45 MW ground-mounted solar array, EWU will significantly reduce its carbon emissions and energy costs, directly supporting compliance with the Clean Buildings Performance Standard, Washington House Bill 1390, and RCW 70A.45.050, which require aggressive decarbonization and energy performance

Description

improvements. The project also serves as a living laboratory, offering hands-on learning and research opportunities for students and faculty in environmental science, engineering, and sustainability. Importantly, the system is designed to generate immediate benefits, including utility savings and greenhouse gas reductions. Acting now is essential to meet state compliance targets, avoid future regulatory penalties, and ensure EWU is positioned as a leader in climate resilience and educational equity. Delaying implementation risks falling behind on compliance timelines and increased construction costs, while early action maximizes financial, academic, and environmental returns.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
No alternatives were considered. The large solar array feasibility study was funded by a Department of Commerce Clean Energy Grant to assess the barriers and opportunities to building a large solar array on campus to help meet compliance with state regulations, reduce greenhouse gas emissions and utility operating costs, and create new learning opportunities for students.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The project will directly impact a broad range of clientele, including students, faculty, staff, and underserved communities as addressed above. The installation of a 1.45 MW solar array across three zones on the Cheney campus will add approximately 2,500 solar modules, serving the university's energy needs while creating new educational infrastructure. Additionally, the system will serve as a living laboratory for hundreds of students annually, offering hands-on learning in environmental science, engineering, and sustainability. Faculty across multiple disciplines will use the site for research in ecology, pollinator dynamics, climate resilience, and more. The broader Cheney community will also benefit from public engagement features such as interpretive signage and real-time dashboards. By integrating clean energy generation with ecological restoration and academic programming, the project serves both institutional and community stakeholders while advancing equity and climate goals.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.
If funded from this request, EWU will look to federal incentives to help offset construction costs. However, at this time, the future of federal incentives for solar arrays is greatly uncertain.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies ,master plans, space programming and other analyses as appropriate.
The EWU Large Solar Project directly supports Eastern Washington University's strategic master plan by advancing its institutional goals for sustainability, infrastructure modernization, and academic excellence. As outlined in the feasibility study, the project aligns with EWU's comprehensive decarbonization strategy and fulfills mandates under Washington House Bill 1390, RCW 70A.45.050, and the Clean Buildings Performance Standard. These policies require public institutions to reduce greenhouse gas emissions, improve energy performance, and submit actionable decarbonization plans. The solar array will generate over 1.8 million kWh annually, offsetting campus electricity use and avoiding approximately 1,422 metric tons of CO2 emissions per year—key metrics that support compliance and performance reporting.

From a planning perspective, the project builds on previous feasibility studies for solar plus storage at the JFK Library and Jim Thorpe Fieldhouse, which identified rooftop solar limitations and recommended a pivot to ground-mounted systems. The current design integrates with EWU's utility tunnel system and is future-proofed for microgrid expansion, supporting long-term infrastructure resilience. Academically, the system is purpose-built as a living laboratory, enabling interdisciplinary research in soil ecology, pollinator dynamics, and climate science. It also enhances student engagement through curriculum integration, fieldwork access, and real-time system monitoring. By combining clean energy generation with ecological restoration and educational programming, the project improves agency performance across operational, environmental, and academic domains, while positioning EWU as a regional leader in sustainability and climate adaptation.

Does this project include IT related costs, including hardware, software, cloud-based services, contracts or staff? If yes, attach IT Addendum.

Project Number: **40000234**
Project Title: **EWU Large Solar Array**

Description

Yes, the project includes IT-related costs and components. Specifically, the system will be integrated with the SolarEdge cloud-based monitoring platform, which provides module-level telemetry, inverter diagnostics, and project-wide performance tracking. This platform supports both operational oversight and educational use, including potential development of student-accessible dashboards.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
The project contributes significantly to meeting Washington State's greenhouse gas emissions limits and energy efficiency goals as outlined in RCW70A.45.050 and RCW 19.27A.210. By generating approximately 1.8 million kWh of clean electricity annually, the project offsets fossil fuel-based energy consumption and avoids an estimated 1,422 metric tons of CO2 emissions each year, directly supporting the state's targets of 45% emissions reduction by 2030, 70%by 2040, and net zero by 2050. Additionally, the project enhances compliance with the Clean Buildings Performance Standard by reducing campus energy use intensity and improving performance metrics, which are critical for meeting compliance deadlines. The system's integration with EWU's utility infrastructure and its capacity for real-time monitoring also supports long-term operational efficiency and data-driven energy management. These outcomes align with statewide climate adaptation strategies and position EWU as a proactive leader in carbon reduction and sustainable campus development.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
The large solar project meaningfully advances equity in Washington State by addressing both environmental and educational disparities. Located in Cheney, WA—an area rated 9/10 for poverty on the Washington Environmental Health Disparities Map—the project directly reduces greenhouse gas emissions in a community disproportionately affected by climate change. It also serves Spokane County, where many EWU students reside and where environmental health disparities reach the highest levels (10/10). With 60% of EWU's 10,746 students coming from Eastern Washington, 38% Pell-eligible, 37%identifying as non-white, and 30% first-generation college students, the university's mission to serve underrepresented and rural populations is deeply embedded in this initiative. By installing a large solar array, EWU not only reduces its carbon footprint but also demonstrates leadership in climate action that benefits the very communities that support it. The project's integration into coursework, internships, and research creates inclusive pathways into clean energy and sustainability careers—fields often less accessible to marginalized groups. Public-facing features like QR-enabled dashboards and interpretive signage further promote climate literacy and community engagement. In doing so, EWU fulfills its role as Washington's #1 college for diversity and the state's most affordable public four-year institution, while actively working to close opportunity gaps and build resilience in vulnerable communities.

Is there additional information you would like decisionmakers to know when evaluating this request?
This initiative directly supports compliance with RCW70A.45.050 and RCW19.27A.210. By generating over 1.8 million kWh of clean electricity annually and avoiding approximately 1,422 metric tons of CO2 emissions, the project helps position Eastern Washington University to meet its decarbonization targets and reduce campus energy use intensity. The system is designed for long-term resilience and scalability, with infrastructure in place to support future microgrid integration and expanded solar capacity. Located in Cheney, WA—an area with high environmental health disparities—the project also demonstrates regional leadership in climate action and environmental stewardship. Delaying implementation risks increasing costs and falling behind on regulatory timelines. Acting now ensures EWU remains compliant, cost-effective, and aligned with Washington's broader climate adaptation strategy.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
No it is not

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Capital Project Request

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Version: 21 2026 EWU Supplemental Budget

Report Number: CBS002
Date Run: 9/14/2025 11:35PM

Project Number: **40000234**
Project Title: **EWU Large Solar Array**

Description

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Minor Works Program List

Growth Management impacts
No impacts

New Facility: Yes
How does this fit in master plan
The EWU Large Solar Project directly supports Eastern Washington University's strategic master plan by advancing its institutional goals for sustainability, infrastructure modernization, and academic excellence. As outlined in the feasibility study, the project aligns with EWU's comprehensive decarbonization strategy and fulfills mandates under Washington House Bill 1390, RCW 70A.45.050, and the Clean Buildings Performance Standard. These policies require public institutions to reduce greenhouse gas emissions, improve energy performance, and submit actionable decarbonization plans. The solar array will generate over 1.8 million kWh annually, offsetting campus electricity use and avoiding approximately 1,422 metric tons of CO2 emissions per year—key metrics that support compliance and performance reporting.

Funding

			Expenditures		2025-27 Fiscal Period	
Acct Code	Account Title	Estimated Total	Prior Biennium	Current Biennium	Reapprops	New Approps
26C-1	Climate Commit Accou-State	7,134,000				7,134,000
	Total	**7,134,000**	**0**	**0**	**0**	**7,134,000**

		Future Fiscal Periods			
		2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
Although a new system, this project is not anticipated to impact overall staff needs across campus.

OFM

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	21-A	21-A
Project Classification	*	All Project Classifications
Capital Project Number	40000234	40000234
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2025

Agency	Eastern Washington University
Project Name	EWU Large Solar Array
OFM Project Number	40000234

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-5705
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	0	MACC per Gross Square Foot	
Usable Square Feet		Escalated MACC per Gross Square Foot	
Alt Gross Unit of Measure			
Space Efficiency		A/E Fee Class	C
Construction Type	Civil Construction	A/E Fee Percentage	7.74%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.16%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	5%		
Base Month (Estimate Date)	August-25	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	July-26	Design End	October-26
Construction Start	January-27	Construction End	June-27
Construction Duration	5 Months		

Green cells must be filled in by user

Project Cost Summary

Total Project	$6,796,540	Total Project Escalated	$7,133,756
		Rounded Escalated Total	$7,134,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$7,134,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$288,733		
Extra Services	$165,000		
Other Services	$129,721		
Design Services Contingency	$29,173		
Consultant Services Subtotal	**$612,626**	**Consultant Services Subtotal Escalated**	**$635,603**

Construction			
Maximum Allowable Construction Cost (MACC)	$5,148,927	Maximum Allowable Construction Cost (MACC) Escalated	$5,410,209
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$257,446		$270,705
Non-Taxable Items	$0		$0
Sales Tax	$481,167	Sales Tax Escalated	$505,601
Construction Subtotal	**$5,887,541**	**Construction Subtotal Escalated**	**$6,186,515**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$146,374		
Other Project Admin Costs	$150,000		
Project Administration Subtotal	**$296,374**	**Project Administration Subtotal Escalated**	**$311,638**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$6,796,540**	Total Project Escalated	**$7,133,756**
		Rounded Escalated Total	**$7,134,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$635,603		$635,603		**$0**
Construction					
Construction Subtotal	$6,186,515		$6,186,515		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$311,638		$311,638		**$0**
Other Costs					
Other Costs Subtotal	$0		$0		**$0**
Project Cost Estimate					
Total Project	**$7,133,756**	**$0**	**$7,133,756**	**$0**	**$0**
	$7,134,000	**$0**	**$7,134,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
A new solar array to serve the Cheney campus
Insert Row Here

What has been completed or is underway with a previous appropriation?
Nothing to date
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

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**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0277**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$288,733			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$288,733**	**1.0326**	**$298,146**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$40,000			
Geotechnical Investigation				
Commissioning				
Site Survey	$20,000			
Testing				
LEED Services	$60,000			
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant	$45,000			
Other				
Insert Row Here				
Sub TOTAL	**$165,000**	**1.0326**	**$170,379**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$129,721			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$129,721**	**1.0515**	**$136,402**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$29,173			
Other				
Insert Row Here				
Sub TOTAL	**$29,173**	**1.0515**	**$30,676**	Escalated to Mid-Const.

CONSULTANT SERVICES TOTAL	**$612,626**	**$635,603**	

Green cells must be filled in by user

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$30,000			
G20 - Site Improvements	$240,000			
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities	$150,000			
G60 - Other Site Construction	$120,000			
Other				
Insert Row Here				
Sub TOTAL	**$540,000**	**1.0443**	**$563,922**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0443**	**$0**	
3) Facility Construction				
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	$676,000			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost				
Solar Array System	$3,932,927			
Sub TOTAL	**$4,608,927**	**1.0515**	**$4,846,287**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$5,148,927**		**$5,410,209**	
	NA		*NA per 0*	

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7) Owner Construction Contingency				
Allowance for Change Orders	$257,446			
Other				
Insert Row Here				
Sub TOTAL	**$257,446**	**1.0515**	**$270,705**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0515**	**$0**	
9) Sales Tax				
Sub TOTAL	**$481,167**		**$505,601**	
CONSTRUCTION CONTRACTS TOTAL	**$5,887,541**		**$6,186,515**	

Green cells must be filled in by user

Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0515**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0515**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$35,669				0.5% of total project cost for new and renewal construction
Other	-$35,669				Not applicable
Insert Row Here					
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services	$146,374				DB Management Fees
EWU Project Management	$150,000				Management & coord
Insert Row Here					
Subtotal of Other	*$150,000*				
PROJECT MANAGEMENT TOTAL	**$296,374**		**1.0515**	**$311,638**	

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					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0443**	**$0**	

Green cells must be filled in by user

C-100 (2026)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

2026 Supp - Information Technology (IT) Decision Package (DP) Fiscal Detail Worksheet

Decision Package Name: EWU Large Solar Array
Expected Fiscal Year to Complete: 2027

Instructions: Use this sheet to provide fiscal detail (IT portion only) for the entire lifecycle of your project/investment.

Anticipated Project/Investment Budget	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035
Number of IT FTEs										
State Employee Staffing Costs	10,000	5000								
Non-State Employee Staffing Costs										
Contracted Professional Services	30,000									
Software Licenses and Subscriptions	20,000	20000	20000	20000	20000	22000	22000	22000	22000	22000
Hardware and Equipment	150,000									
Service Level Agreements			10000	10000	10000	11000	11000	11000	11000	11000
Other										
	210,000	25,000	30,000	30,000	30,000	33,000	33,000	33,000	33,000	33,000
Fund Sources										
001-1: General Fund State	20,000	20,000	30,000	30,000	30,000	33,000	33,000	33,000	33,000	33,000
08A-1: Education Legacy Trust Account										
17F-1: Washington Opportunity Pathways										
001-2: General Fund Federal										
001-C: General Fund Medicaid										
415-1: Personnel Services Account										
xxx-x: Fund Source XXX										
xxx-x: Fund Source XXX										
TOTAL	20,000	20,000	30,000	30,000	30,000	33,000	33,000	33,000	33,000	33,000

2026 Supp - Information Technology (IT) Decision Package (DP) Fiscal Detail Worksheet

Decision Package Name: EWU Large Solar Array
Expected Fiscal Year to Complete: 2027

Instructions: Use this sheet to provide historical fiscal costs (IT portion only) for your project/investment.

Historical Expenditures (Cost)	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
State Employee Staffing Costs										
Non-State Employee Staffing Costs										
Contracted Professional Services										
Software Licenses and Subscriptions										
Hardware and Equipment										
Service Level Agreements										
Other										
	-	-	-	-	-	-	-	-	-	-
Fund Sources										
001-1: General Fund State	-	-	-	-	-	-	-	-	-	-
08A-1: Education Legacy Trust Account										
17F-1: Washington Opportunity Pathways										
001-2: General Fund Federal										
001-C: General Fund Medicaid										
415-1: Personnel Services Account										
xxx-x: Fund Source XXX										
xxx-x: Fund Source XXX										
TOTAL	-	-	-	-	-	-	-	-	-	-

2026 Supp - Information Technology (IT) Decision Package (DP) Fiscal Detail Worksheet

Decision Package Name: EWU Large Solar Array
Expected Fiscal Year to Complete: 2027

Instructions: Use this sheet to provide estimated maintenance and operations costs (IT portion only) for the project/investment once complete.

Maintenance & Operations Costs	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035
State Employee Staffing Costs	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000
Non-State Employee Staffing Costs										
Contracted Professional Services										
Software Licenses and Subscriptions										
Hardware and Equipment										
Service Level Agreements										
Other										
	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000
Fund Sources										
001-1: General Fund State	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000
08A-1: Education Legacy Trust Account										
17F-1: Washington Opportunity Pathways										
001-2: General Fund Federal										
001-C: General Fund Medicaid										
415-1: Personnel Services Account										
xxx-x: Fund Source XXX										
xxx-x: Fund Source XXX										
TOTAL	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000	6,000

370 – Eastern Washington University

2026 Supplemental Capital Budget Request

Campus Infrastructure Repairs

- PEA Stair supporting information
- Steam Tunnel supporting information
- JFK Ramp supporting information

EWU Construction & Planning
1115 Cedar Street
101 Rozell Plant,
Cheney, WA 99004

Existing Conditions

Location: PEA Stair
Date: August 2025

Deteriorating concrete at PEA Stair

Spalling concrete at PEA Stair

Spalling concrete at PEA Stair

EASTERN WASHINGTON UNIVERSITY

PEA EXTERIOR STAIR REPLACEMENT & DRAINAGE IMPROVEMENTS PROJECT

S.14, T.23N., R.41E., W.M., CITY OF CHENEY, SPOKANE COUNTY, WASHINGTON

Sheet Index:

VICINITY MAP

Property/Project Information:

ADDRESS: P.E. CLASSROOM BUILDING
1106 WASHINGTON STREET
CHENEY, WA 99004

OWNER: EASTERN WASHINGTON UNIVERSITY

Contact Information:

PROPERTY OWNER:
EASTERN WASHINGTON UNIVERSITY
526 5TH ST.
CHENEY, WA 99004
(509) 359-6565
CONTACT - KRIS JESKE

CIVIL ENGINEER:
COFFMAN ENGINEERS, INC.
10 NORTH POST STREET, SUITE 500
SPOKANE, WA 99201
(509) 328-2994
CONTACT - CINDY BROWER
(CINDY.BROWER@COFFMAN.COM)

ELECTRICAL ENGINEER:
COFFMAN ENGINEERS, INC.
10 NORTH POST STREET, SUITE 500
SPOKANE, WA 99201
(509) 328-2994
CONTACT - AARON BAGLEY
(AARON.BAGLEY@COFFMAN.COM)

STRUCTURAL ENGINEER:
COFFMAN ENGINEERS, INC.
10 NORTH POST STREET, SUITE 500
SPOKANE, WA 99201
(509) 328-2994
CONTACT - ANNIE LUU
(ANNIE.LUU@COFFMAN.COM)

SURVEYOR:
COFFMAN ENGINEERS, INC.
10 NORTH POST STREET, SUITE 500
SPOKANE, WA 99201
(509) 328-2994
CONTACT - DANIEL ATHA
(DANIEL.ATHA@COFFMAN.COM)

Partial drawing set for PEA stair replacement. Full drawing set will be provided upon request.

200 100 0 200 400
SCALE: 1 INCH = 200 FEET

COFFMAN ENGINEERS
10 N. Post Street,
Suite 500
Spokane, WA 99201
ph 509.328.2994
www.coffman.com

CHAD HEIMBIGNER — STATE OF WASHINGTON — 28103 — REGISTERED PROFESSIONAL ENGINEER

EASTERN WASHINGTON UNIVERSITY

PEA STAIRCASE REPLACEMENT & DRAINAGE IMPROVEMENTS

ISSUED FOR CONSTRUCTION

EASTERN WASHINGTON UNIVERSITY

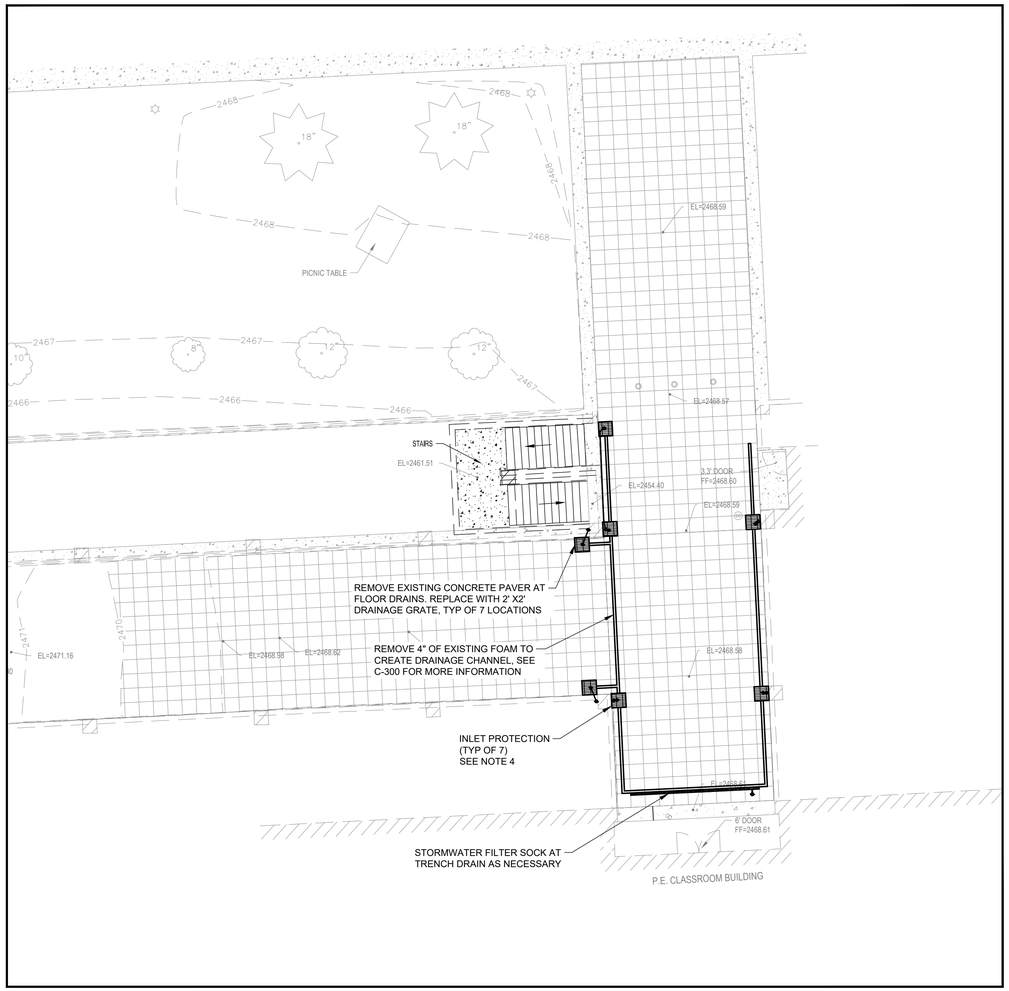
REV	DATE	DESCRIPTION

PROJ. NO.	192085
DRAWN	IJS
CHECKED	CJB
DATE	06/28/2023

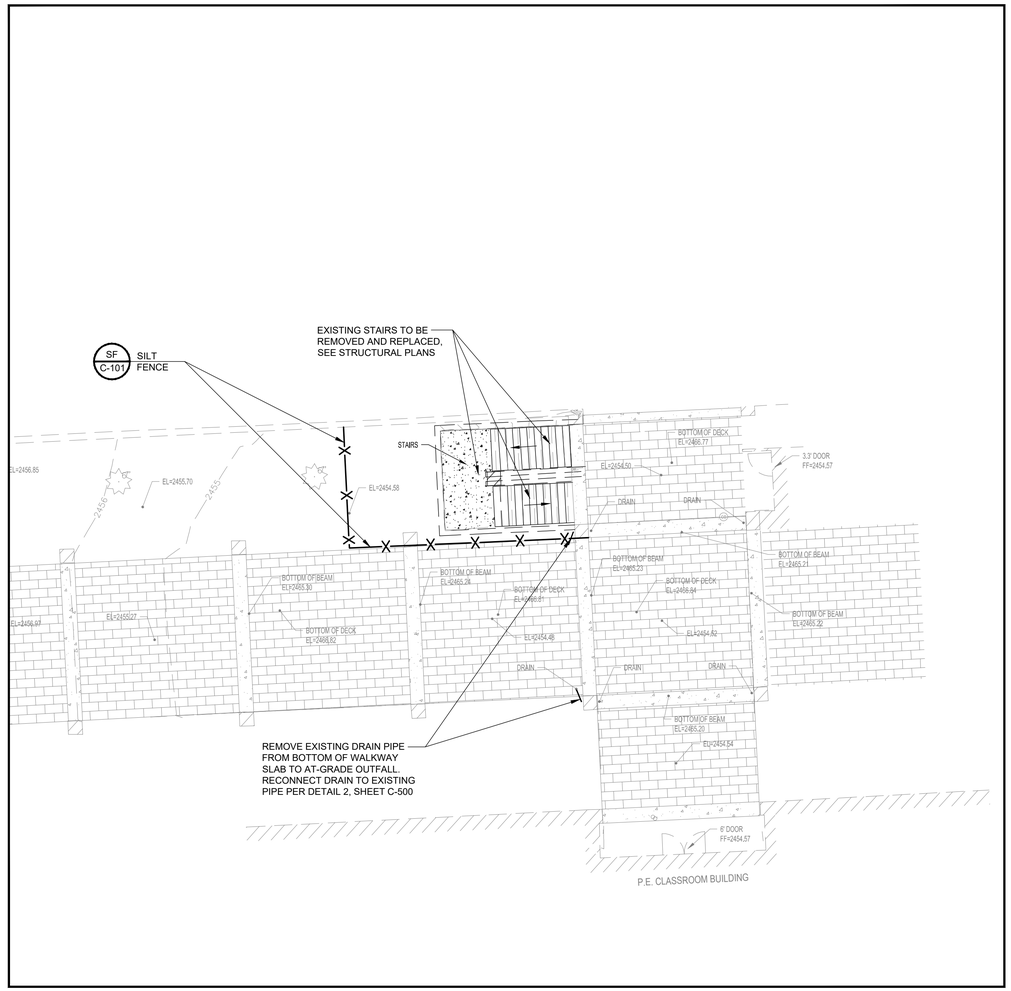
SHEET TITLE:
COVER SHEET

SHEET NO:
G-001

S.14, T.23N., R.41E., W.M., CITY OF CHENEY, SPOKANE COUNTY, WASHINGTON



UPPER LEVEL



LOWER LEVEL

NOTES

1. SEE SHEET C-001 FOR GENERAL NOTES.
2. SEE SHEET C-001 FOR EROSION AND SEDIMENT CONTROL NOTES.
3. SEE SHEET C-101 FOR EROSION AND SEDIMENT CONTROL DETAILS.
4. AT EACH ROOF DRAIN ON UPPER LEVEL, SECURE FILTER FABRIC AROUND 2" OUTLET PIPE TO PREVENT SEDIMENT AND DEBRIS FROM ENTERING PIPE.

LEGEND

- 2455 — EXISTING CONTOUR
- SILT FENCE
- GRATED DRAIN PANEL
- UNDER PAVER, IN FOAM DRAINAGE CHANNEL
- TRENCH DRAIN

SURVEY LEGEND

- BUILDING
- CONCRETE
- BLOCK PAVING
- BRICK PAVER
- CLEAN OUT
- CONIFEROUS TREE
- DECIDUOUS TREE
- POST
- BOLLARD
- LIGHT POLE
- IRRIGATION CONTROL VALVE

10 5 0 10 20

SCALE: 1 INCH = 10 FEET

TBM INFORMATION

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	195980.34	2442745.05	2468.60	SET X
2	196090.39	2442603.04	2467.89	SET X
3	195967.04	2442682.09	2454.97	SET 60D
4	195958.43	2442750.65	2454.55	SET TEMP X

MONUMENT PRESERVATION NOTE

DISTURBING EXISTING SURVEY MONUMENTS (PROPERTY CORNERS OR KNOWN RECORDED MONUMENTS) IS A GROSS MISDEMEANOR PER RCW 58.04.015. CONTRACTOR SHALL PROTECT ALL EXISTING PROPERTY CORNERS. IF ANY MONUMENTS ARE IN AREAS THAT WILL BE DISTURBED, THE CONTRACTOR SHALL RETAIN A PROFESSIONAL LAND SURVEYOR TO FOLLOW WAC 332-120. ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE REMEDIED AT THE CONTRACTOR'S EXPENSE.

THE EXISTING INFORMATION SHOWN ON THESE PLANS IS PER THE SURVEY COMPLETED BY:
COFFMAN ENGINERS, INC.
10 N. POST ST
SPOKANE, WA 99203
(509) 328-2994
DATED: OCT. 2019
THE CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS AND CONTACT THE ENGINEER IF DISCREPANCIES ARE NOTED.

UTILITY STATEMENT
LOCATION OF EXISTING UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM DRAWINGS AND FIELD LOCATES SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES. UTILITY LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EACH UTILITY.

811 Know what's below. Call before you dig.

COFFMAN ENGINEERS
10 N. Post Street,
Suite 500
Spokane, WA 99201
ph 509.328.2994
www.coffman.com

CHAD HEIMBIGNER STATE OF WASHINGTON 28103 REGISTERED PROFESSIONAL ENGINEER

EASTERN WASHINGTON UNIVERSITY

PEA STAIRCASE REPLACEMENT & DRAINAGE IMPROVEMENTS

ISSUED FOR CONSTRUCTION

EASTERN WASHINGTON UNIVERSITY

REV	DATE	DESCRIPTION

PROJ. NO.	192085
DRAWN	IJS
CHECKED	CJB
DATE	06/28/2023

SHEET TITLE:

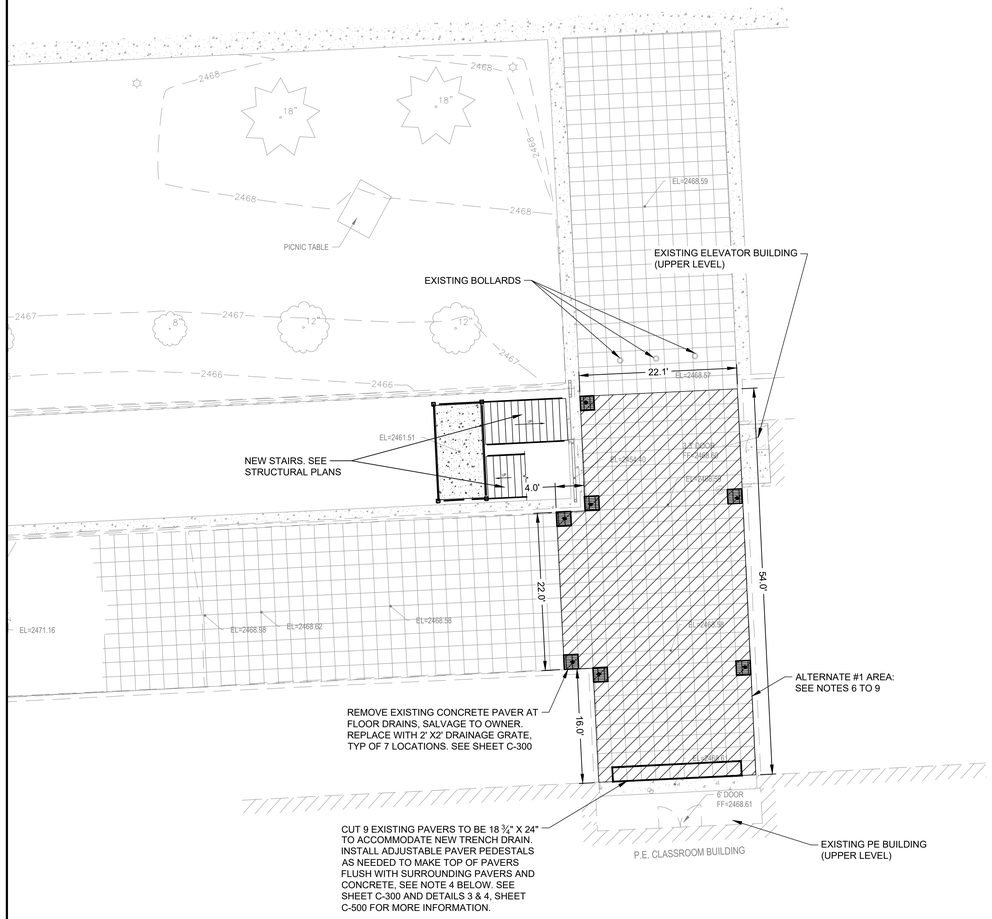
DEMOLITION AND EROSION AND SEDIMENT CONTROL PLAN

SHEET NO:

C-100

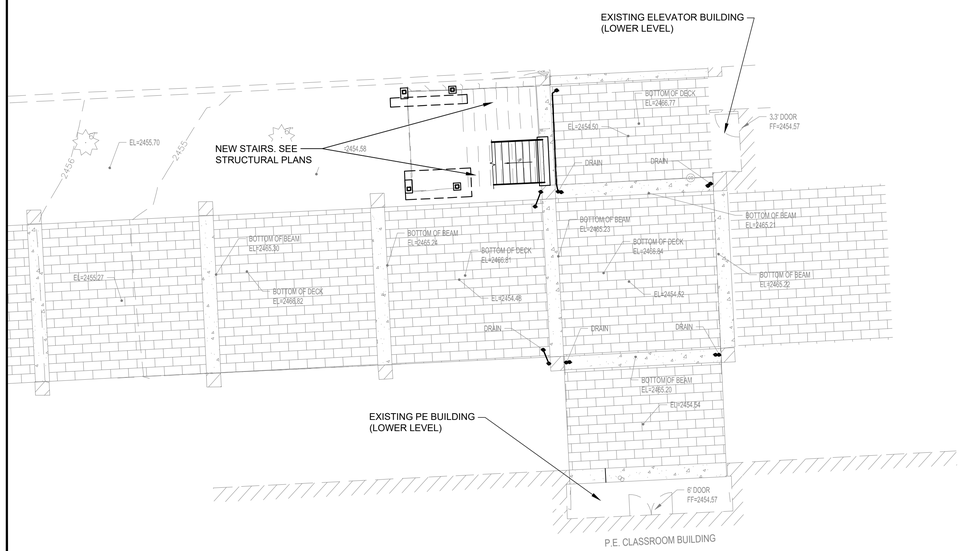
S.14, T.23N., R.41E., W.M., CITY OF CHENEY, SPOKANE COUNTY, WASHINGTON

UPPER LEVEL



UPPER LEVEL

LOWER LEVEL



LOWER LEVEL

NOTES

1. SEE SHEET C-001 FOR GENERAL NOTES.
2. SEE SHEET C-100 FOR DEMOLITION PLAN.
3. SEE SHEET C-300 FOR DRAINAGE PLAN.
4. ADJUSTABLE PAVER PEDESTALS SHALL BE ETERNO ADJUSTABLE PAVER SUPPORTS OR APPROVED EQUAL. CONTRACTOR TO VERIFY MODEL NUMBER BASED ON FIELD CONDITIONS.
5. CONTRACTOR TO ENSURE THAT PAVER PEDESTALS DO NOT DAMAGE EXISTING WATERPROOFING MEMBRANE.

ALTERNATE #1 NOTES

6. REMOVE EXISTING PAVERS AND RIGID FOAM INSULATION ON UPPER LEVEL IN AREA NOTED ON THIS SHEET AND SALVAGE FOR REUSE. NOTE PAVER LOCATIONS FOR RE-INSTALLATION, AS THEIR DIMENSIONS VARY. CLEAN SEDIMENT AND DEBRIS FROM PAVERS, FOAM INSULATION, AND EXISTING WATERPROOF MEMBRANE BENEATH PAVER SYSTEM IN A MANNER THAT DOES NOT DAMAGE EXISTING MATERIALS OR SURFACES.
7. PROTECT DECK DRAINS SO THAT SEDIMENT IS NOT SENT THROUGH STORM DRAIN SYSTEM (SEE SHEET C-100). WHEN CLEANING IS FINISHED, FLUSH DECK DRAINS WITH CLEAN WATER TO CONFIRM DRAINS ARE FLOWING FREELY.
8. PROTECT EXISTING WATERPROOF MEMBRANE FROM DAMAGE DURING CLEANING, AND NOTIFY EWU WHEN MEMBRANE IS EXPOSED. EWU WILL COORDINATE INSPECTION BY INDEPENDENT WATERPROOFING CONSULTANT WHEN AREA HAS BEEN CLEANED AND BEFORE REINSTALLATION OF FOAM AND PAVERS.
9. REINSTALL EXISTING PAVERS, RIGID FOAM INSULATION, AND RUBBER PAVER SUPPORTS AND SHIMS IN SAME LOCATION AND PATTERN, UNLESS OTHERWISE NOTED ON PLANS. FINISHED WALKING SURFACE TO BE FLUSH AND LEVEL TO MATCH ORIGINAL, EXISTING CONDITIONS.

LEGEND

- EXISTING BELOW-GRADE STORM PIPE
- EXISTING ABOVE-GRADE STORM PIPE
- NEW ABOVE-GRADE STORM PIPE
- UNDER PAVER, IN FOAM DRAINAGE CHANNEL
- EXISTING DRAIN PIPE
- NEW DRAIN PIPE
- GRATED DRAIN PANEL
- TRENCH DRAIN
- ALTERNATE #1 AREA

SURVEY LEGEND

- BUILDING
- CONCRETE
- BLOCK PAVING
- BRICK PAVER
- CLEAN OUT
- CONIFEROUS TREE
- DECIDUOUS TREE
- POST
- BOLLARD
- LIGHT POLE
- IRRIGATION CONTROL VALVE

10 5 0 10 20

SCALE: 1 INCH = 10 FEET

TBM INFORMATION

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	195980.34	2442745.05	2468.60	SET X
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MONUMENT PRESERVATION NOTE

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THE EXISTING INFORMATION SHOWN ON THESE PLANS IS PER THE SURVEY COMPLETED BY:
COFFMAN ENGINERS, INC.
10 N. POST ST
SPOKANE, WA 99203
(509) 328-2994
DATED: OCT. 2019
THE CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS AND CONTACT THE ENGINEER IF DISCREPANCIES ARE NOTED.

UTILITY STATEMENT
LOCATION OF EXISTING UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM DRAWINGS AND FIELD LOCATES SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES. UTILITY LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EACH UTILITY.

811 Know what's below. Call before you dig.

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EASTERN WASHINGTON UNIVERSITY

PEA STAIRCASE REPLACEMENT & DRAINAGE IMPROVEMENTS

ISSUED FOR CONSTRUCTION

EASTERN WASHINGTON UNIVERSITY

REV	DATE	DESCRIPTION

PROJ. NO.	192085
DRAWN	IJS
CHECKED	CJB
DATE	06/28/2023

SHEET TITLE:

SITE PLAN

SHEET NO:

C-200

GENERAL STRUCTURAL NOTES

GENERAL:

THE STRUCTURAL CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE STRUCTURE IS DESIGNED TO BE A STABLE UNIT AS A COMPLETED WHOLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGN, ERECT AND INSPECT TEMPORARY SHORES, BRACES, ETC. TO SUPPORT THE STRUCTURE AGAINST ALL ANTICIPATED LOADS INCLUDING GRAVITY, WIND AND LATERAL EARTH PRESSURE UNTIL ITS COMPLETION. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THESE METHODS OF CONSTRUCTION. CONSTRUCTION MATERIAL SHALL BE PLACED ON FRAMED FLOORS AND ROOFS SUCH THAT THE DESIGN LIVE LOADS ARE NOT EXCEEDED.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS PRIOR TO STARTING CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ENGINEER.

WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE AND TESTING STANDARDS.

NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THE GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. "TYPICAL" DETAILS ARE NOT FLAGGED ON THE DRAWINGS, BUT APPLY UNLESS NOTED OTHERWISE.

SPECIAL INSPECTIONS:

THE OWNER WILL EMPLOY AN ICC CERTIFIED SPECIAL INSPECTOR TO PROVIDE INSPECTION OF THE FOLLOWING ITEMS PER IBC CHAPTER 17 AND THE REQUIREMENTS OF THE APPROPRIATE LOCAL JURISDICTION:

CONCRETE AND REINFORCING STEEL: PER TABLE 1704.4 OF THE IBC.

STEEL: PER IBC TABLE 1704.3.

WELDING: PER IBC SECTION 1704.3 AND IN COMPLIANCE WITH AWS D1.1

DEFERRED SUBMITTALS:

THE FOLLOWING PORTIONS OF THE DESIGN ARE NOT SUBMITTED TO THE BUILDING OFFICIAL AT THE TIME OF PERMIT APPLICATION, BUT SHALL BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION, AFTER ENGINEERING REVIEW. DEFERRED SUBMITTALS FOR THIS PROJECT ARE:

1. PRECAST CONCRETE TREADS AND LANDING.

CODE:

2018 EDITION OF THE INTERNATIONAL BUILDING CODE.

DESIGN LOADS:

STAIR & PEDESTRIAN PLATFORM DEAD LOAD---------- 50 PSF
STAIR & PEDESTRIAN PLATFORM LIVE LOAD---------- 100 PSF
SEISMIC LOADS:

IMPORTANCE FACTOR---------- 1.0
S_S---------- 0.317
S_1---------- 0.114
S_{DS}---------- 0.327
S_{D1}---------- 0.178
SEISMIC DESIGN CATEGORY---------- C
SITE CLASS---------- D
R---------- 3.0
Cs ---------- 0.109

SNOW LOADS:

ROOF SNOW ---------- 42 PSF (INCLUDES FACTORS)

FOUNDATION:

ALLOWABLE SOIL BEARING PRESSURE = 1500 PSF PER IBC TABLE 1806.2. BEAR ALL FOOTINGS ON INORGANIC, UNDISTURBED SOIL OR ON CONTROLLED, COMPACTED FILL. MINIMUM FOOTING DEPTH SHALL BE 2'-0" FOR EXTERIOR FOOTING.

DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE OR GROUT HAS REACHED FULL DESIGN STRENGTH. WALLS BELOW GRADE SHALL BE BRACED AS REQUIRED TO RESIST LATERAL EARTH PRESSURE UNTIL CONNECTING FLOORS OR ROOFS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL STRENGTH. THE CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.

CONCRETE:

CONCRETE CONSTRUCTION SHALL CONFORM WITH THE LATEST EDITION OF ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" AND ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE UNLESS NOTED OTHERWISE.

CONCRETE CONTAINING SUPERPLASTICIZING ADMIXTURE SHALL HAVE A SLUMP NOT EXCEEDING 3", TO BE FIELD VERIFIED, PRIOR TO ADDING ADMIXTURE, AND NOT EXCEEDING 8" AT PLACEMENT. ADDITION OF WATER TO A MIX WITH INSUFFICIENT SLUMP WILL NOT BE PERMITTED, EXCEPT AS ALLOWED PER ASTM C494.

MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED.

MINIMUM CONCRETE MIX DESIGN REQUIREMENTS SHALL BE AS FOLLOWS:

ITEM	MINIMUM CEMENT CONTENT (SACKS/CY)	28 DAY STRENGTH F'c (PSI)	MAX SIZE AGGREGATE	AIR ENTR	MAX SLUMP
PIERS	5 1/2	4000	1"	5-7%	4"
FOOTINGS	5 1/2	4000	1"	5-7%	4"
PRECAST[1]	---	4000	---	---	---

[1] ADDITIONAL MIX DESIGN REQUIREMENTS FOR PRECAST MANUFACTURER

PRECAST CONCRETE:

CONNECTIONS AND REINFORCING SHOWN ON THESE DRAWINGS ARE REQUIRED FOR THE IN-PLACE CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING AND PROVIDING ADDITIONAL REINFORCEMENT AND LIFTING HARDWARE REQUIRED FOR HANDLING AND ERECTION. SUBMIT SHOP DRAWINGS SHOWING MEMBER REINFORCING, EMBEDDED ITEMS, OPENINGS, BLOCKOUTS, ETC. PRECAST ELEMENTS SHALL BE DESIGNED FOR HARSH CONDITIONS.

QUALITY ASSURANCE:

FABRICATOR ---------- PCI-CERTIFIED PLANT
INSTALLER QUALIFICATIONS ---------- PCI CERTIFICATE OF COMPLIANCE
SEISMIC LOADS:

REINFORCING MATERIALS:

REINFORCING BARS ---------- EPOXY-COATED STEEL: ASTM A615, GRADE 60
STEEL BAR MATS---------- STEEL: ASTM A184, FABRICATED FROM ASTM A615, GRADE 60 DEFORMED BARS ASSEMBLED WITH CLIPS
WELDED WIRE REINFORCEMENT---------- EPOXY-COATED PLAIN STEEL: ASTM A884, CLASS A COATED

CONCRETE MATERIALS:
PORTLAND CEMENT---------- ASTM C 150/C 150M, TYPE 1 OR TYPE III FACE
MIXTURE COARSE AGGREGATES---------- UNIFORMLY GRADED
STEEL CONNECTIONS---------- GALVANIZED
GROUT---------- NONMETALLIC, NONSHRINK

REINFORCING STEEL:

DEFORMED BARS:

ASTM A615 GRADE 40 FOR #3 AND GRADE 60 FOR #4 AND LARGER.

CLEAR CONCRETE COVERAGE (APPLIES UNLESS NOTED OTHERWISE):

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH---------- 3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER---------- 2"
FORMED CONCRETE NOT EXPOSED TO EARTH OR WEATHER---------- 1 1/2"
FROM TOP SURFACE OF SLAB ON GRADE---------- 1 1/2"

WELDING:

WELDING OF REINFORCING STEEL IS PROHIBITED.

LAP SPLICES IN CONCRETE:

UNLESS NOTED OTHERWISE, LAP SPLICES IN CONCRETE BEAMS, WALLS, SLABS AND FOOTINGS SHALL BE CLASS "B" TENSION LAP SPLICES. STAGGER ALTERNATE SPLICES A MINIMUM OF ONE LAP LENGTH. COAT ALL FIELD WELDS WITH ZINC-RICH PAINT.

STRUCTURAL STEEL:

ROLLED SHAPES OTHER THAN WIDE-FLANGE SHAPES,
ALL PLATES, BARS AND RODS---------- ASTM A36, Fy = 36 KSI
ALL WIDE-FLANGE SHAPES---------- ASTM A992, Fy = 50 KSI
TUBULAR STEEL---------- ASTM A500, GRADE B, Fy = 46 KSI
BOLTS---------- ASTM F3125, GRADE A325, GALVANIZED
ANCHOR BOLTS ---------- ASTM F1554 GR 36 BOLTS, GALVANIZED
EPOXY ANCHORS---------- HILTI - HAS GALVANIZED ROD AND HIT-HY 200 EPOXY

GALVANIZE ALL STRUCTURAL STEEL ACCORDING TO ASTM A123.

GALVANIZE ALL EMBEDDED STEEL IN PRECAST CONCRETE.

PAINT SYSTEM:
BENJAMIN MOORE PRIMER: V175 WATERBORNE BONDING PRIMER
(2) TOPCOATS: P22 SUPER SPEC HP, URETHANE ALKYD GLOSS ENAMEL OR APPROVED EQUAL.

PAINT COLOR: AS SELECTED BY EWU

GALVANIZING REPAIR PAINT:
HIGH-ZINC-DUST-CONTENT PAINT, COMPLYING WITH SSPC-PAINT 20 AND COMPATIBLE WITH PAINTS SPECIFIED TO BE USED OVER IT.

FABRICATION AND ERECTION:

LATEST AISC AND AWS CODES APPLY. FABRICATE AND ERECT IN ACCORDANCE WITH LATEST EDITION OF AISC "SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS". SPLICING OF STRUCTURAL MEMBERS IS NOT PERMITTED UNLESS NOTED ON THE DRAWINGS. ALL BEAMS SHALL BE ERECTED WITH THE NATURAL CAMBER UPWARDS.

WELDING:

ALL WELDING BY CERTIFIED WELDERS HAVING CURRENT EXPERIENCE IN TYPE OF WELD SHOWN ON DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AWS "CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION". USE E70 SERIES LOW HYDROGEN ELECTRODES. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON SHOP DRAWINGS. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING AGENCY. ALL DEFORMED BAR ANCHORS, HEADED STUDS AND THREADED STUDS SHALL BE END WELDED PER MANUFACTURER'S RECOMMENDATIONS.

BOLTS:

ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC., SHALL BE INSTALLED WITH STEEL WASHERS. USE TYPE N BOLTS PER LATEST EDITION OF AISC "SPECIFICATION FOR STRUCTURAL JOINTS HIGH-STRENGTH BOLTS". PRETENSION ALL BOLTS PER AISC RCSC USING TENSION CONTROL BOLTS OR TURN-OF-THE-NUT METHOD, UNLESS OTHERWISE NOTED ON THE DRAWINGS.

GUARDRAIL:

GUARDRAIL SHALL CONFORM TO IBC SECTION 1015 AND HANDRAILS SHALL CONFORM TO IBC SECTION 1014. GUARDRAIL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123. HANDRAIL AND CLOSURE PLATES SHALL BE STAINLESS STEEL PER ASTM A554 AND ASTM 240, TYPE 304.

PICKETS SHALL BE ½"Ø RODS, PLACED AT A MAX SPACING OF 4" OC.

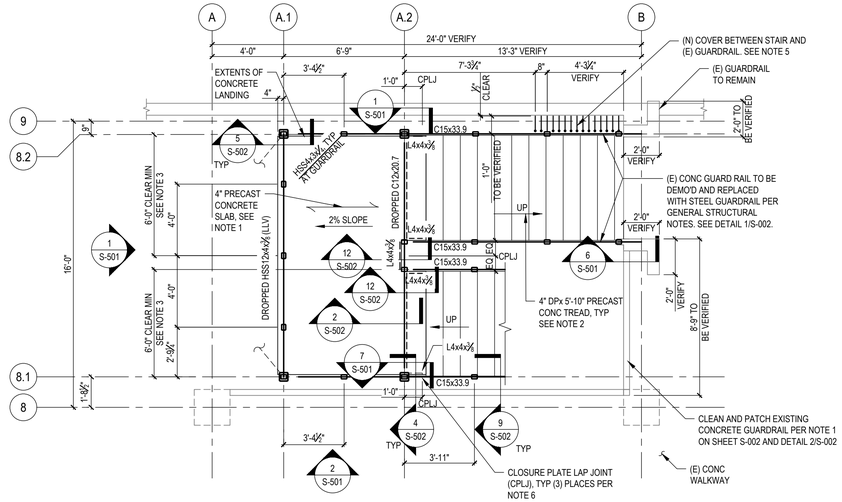
HANDRAIL SHALL BE 1½"Ø PIPE TO COMPLY WITH ACCESSIBILITY REQUIREMENTS. HANDRAIL SHALL BE A MINIMUM OF 34" AND A MAXIMUM OF 38" ABOVE WALKING SURFACE AND FULLY GRASPABLE AND CONTINUOUS.

GUARDRAIL POST SHALL BE HSS4x3x¼ AND LOCATED AT 4'-0" MAX SPACING. HORIZONTAL TOP RAIL SHALL BE AN INVERTED C4x7.2. HORIZONTAL TOP RAIL SHALL BE CONTINUOUS WITH SPLICES LOCATED AT VERTICAL POSTS.

SEALANTS:

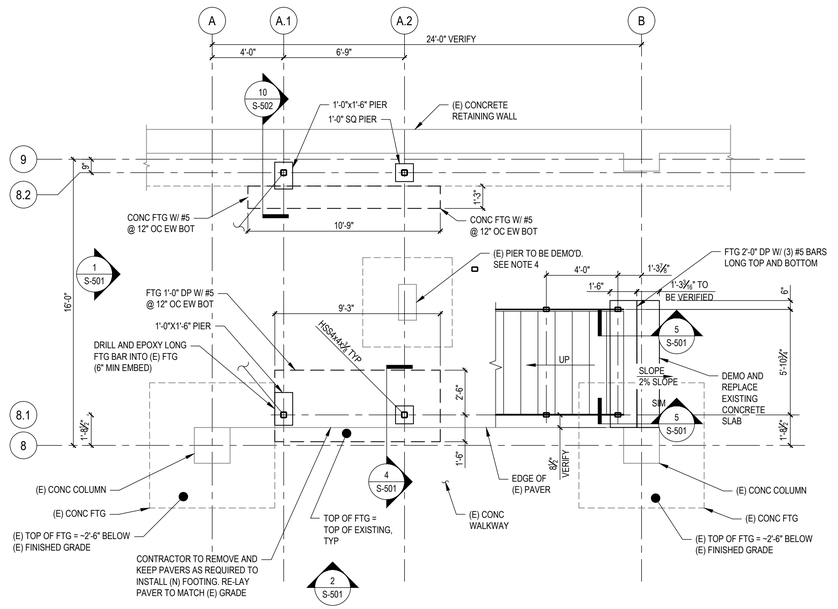
SEALANT FOR CONCRETE JOINTS:
MASTERSEAL NP-1 ONE-COMPONENT, ELASTOMETRIC POLYURETHANE SEALANT OR EQUIVALENT.

SHEET NOTE:
1. CONC SLAB CAN BE SPLIT INTO MULTIPLE SEGMENTS. CONTRACTOR TO COORDINATE FINAL DIMENSIONS WITH STEEL SHOP DRAWINGS. IF TWO SLAB OPTION IS PREFERRED CONTACT ENGINEER FOR STITCHING DETAIL.
2. CONCRETE STAIR TREADS AND LANDING SHALL HAVE HEAVY BROOM FINISH FOR TRACTION SURFACE WITH CAST-IN NOSING.
3. REQUIRED STAIRWAY WIDTH IS 6'-0" CLEAR FROM BACK OF CHANNEL TO BACK OF CHANNEL.
4. DEMO (E) PIER, BUT FOUNDATION CAN REMAIN. CONTRACTOR TO TRACE ELECTRICAL CONDUIT LOCATED IN PIER.
5. NEW COVER HAS THE SAME MEMBER SIZES AND SPACING AS THE GUARDRAIL INFILL AND PICKETS. COVER TO BE EXTENDED TO POINT WHERE STAIR STRINGER IS BELOW EXISTING GUARDRAIL. SEE DETAIL 14/S-502 SIM.
6. STAINLESS STEEL CLOSURE PLATE IS TO BE CONTINUOUS WITH JOINTS AS SHOWN ON PLAN AND PER DETAIL 15/2-502.



FRAMING PLAN

SCALE:1/4"=1'-0"



FOUNDATION PLAN

SCALE:1/4"=1'-0"

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6/29/2023

EASTERN WASHINGTON UNIVERSITY

PEA STAIRCASE REPLACEMENT & DRAINAGE IMPROVEMENTS

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REV	DATE	DESCRIPTION

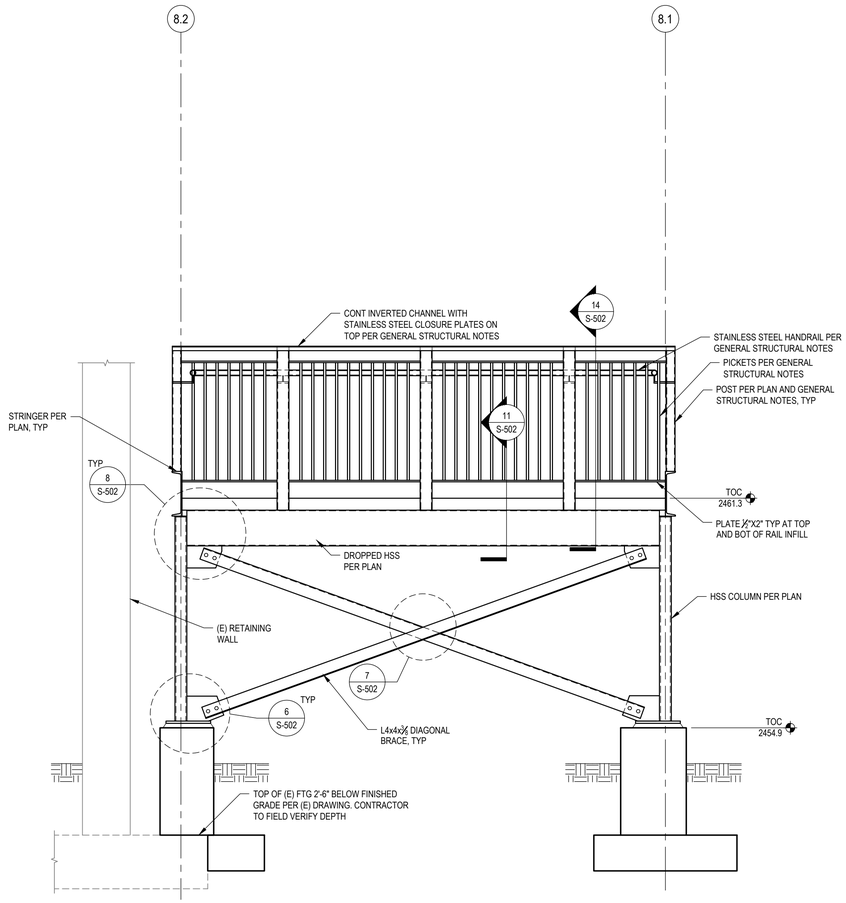
PROJ. NO.	192085
DRAWN	CEP
CHECKED	DLP
DATE	06/28/2023

SHEET TITLE:

GENERAL STRUCTURAL NOTES & STRUCTURAL PLANS

SHEET NO:

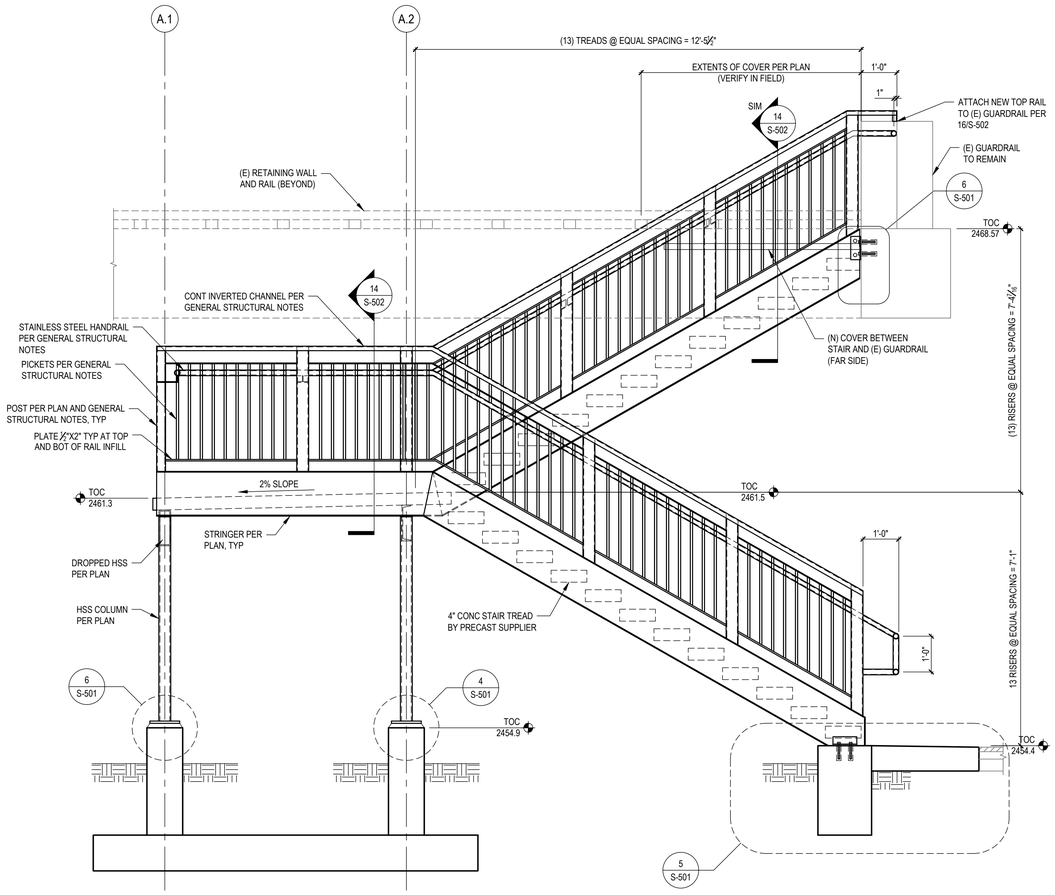
S-001



NOTE:
SEE 10/S-502 FOR REBAR DOWELS TO EXISTING CONCRETE

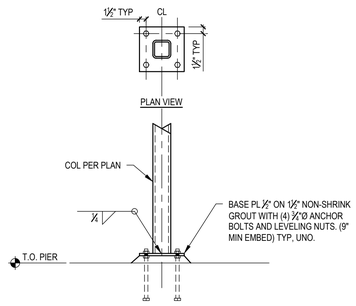
1 BRACING ELEVATION

SCALE: NTS



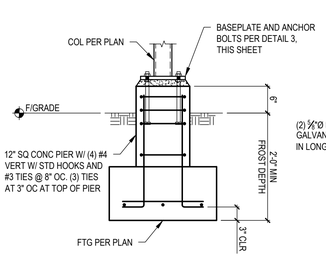
2 STAIR ELEVATION

SCALE: NTS



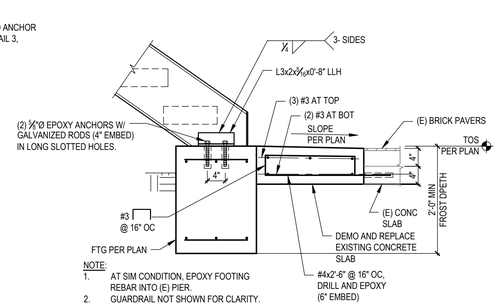
3 TYPICAL HSS COLUMN BASE PLATE

SCALE: NTS



4 TYPICAL COLUMN PIER AT SPREAD FOOTING

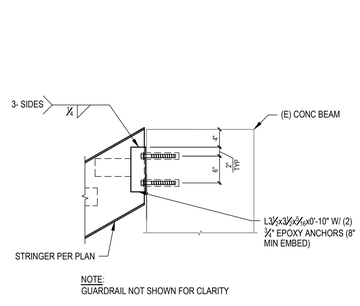
SCALE: NTS



NOTE:
1. AT SIM CONDITION, EPOXY FOOTING REBAR INTO (E) PIER.
2. GUARDRAIL NOT SHOWN FOR CLARITY.

5 TYPICAL THICKENED SLAB AT STEEL STAIR STRINGER

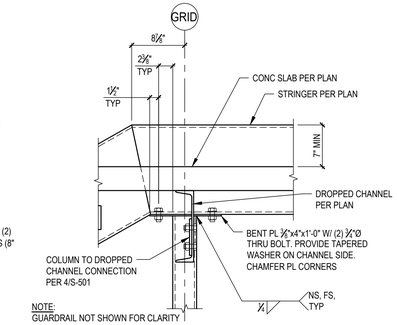
SCALE: NTS



NOTE:
GUARDRAIL NOT SHOWN FOR CLARITY

6 TOP CONNECTION TO (E) BEAM

SCALE: NTS



NOTE:
GUARDRAIL NOT SHOWN FOR CLARITY

7 STRINGER TO COLUMN CONNECTION

SCALE: NTS

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REV	DATE	DESCRIPTION

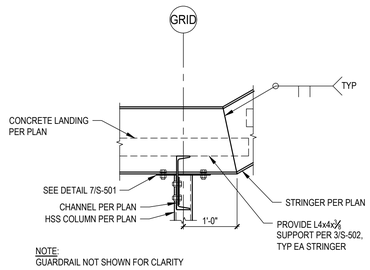
PROJ. NO.	192085
DRAWN	CEP
CHECKED	DLP
DATE	06/28/2023

SHEET TITLE:

STAIR AND BRACE FRAME ELEVATIONS AND DETAILS

SHEET NO:

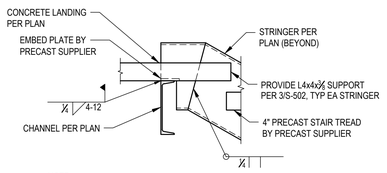
S-501



NOTE:
GUARDRAIL NOT SHOWN FOR CLARITY

1 STAIR CONNECTION

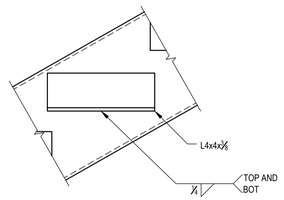
SCALE: NTS



NOTE:
1. COAT FIELD WELD WITH ZINC RICH PAINT PER GENERAL STRUCTURAL NOTES.
2. GUARDRAIL NOT SHOWN FOR CLARITY.

2 CONCRETE SLAB TO CHANNEL

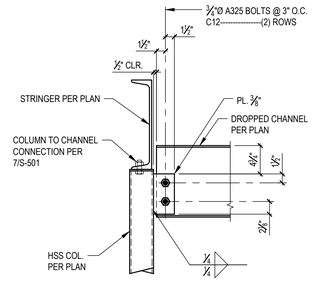
SCALE: NTS



NOTE:
GUARDRAIL NOT SHOWN FOR CLARITY

3 TYP TREAD CONNECTION TO STRINGER

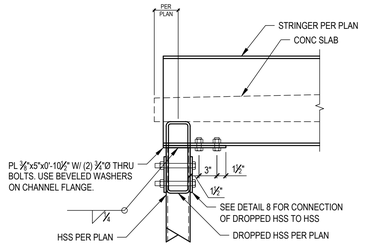
SCALE: NTS



NOTE:
GUARDRAIL NOT SHOWN FOR CLARITY

4 CHANNEL TO COLUMN CONNECTION

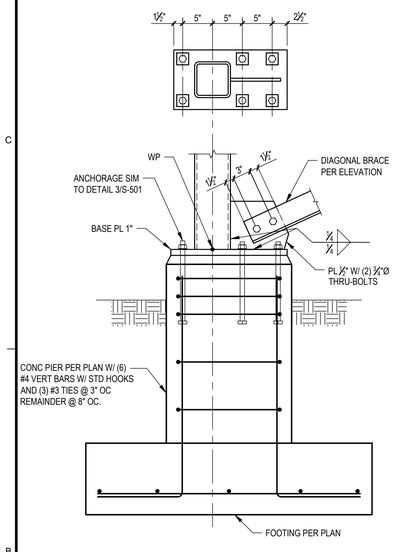
SCALE: NTS



NOTE:
GUARDRAIL NOT SHOWN FOR CLARITY

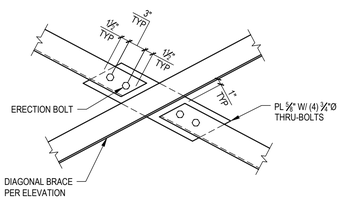
5 CHANNEL TO CHANNEL MITER CONNECTION

SCALE: NTS



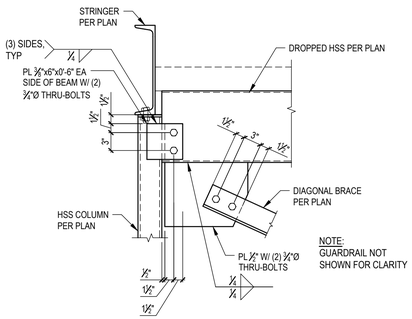
6 BOTTOM BRACE CONNECTION

SCALE: NTS



7 MID SPAN BRACE CONNECTION

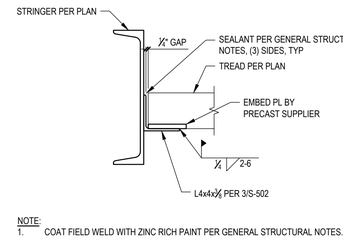
SCALE: NTS



NOTE:
GUARDRAIL NOT SHOWN FOR CLARITY

8 TYP TOP BRACE CONNECTION

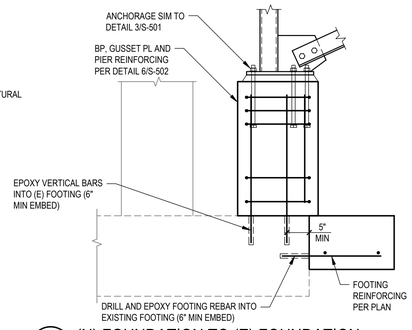
SCALE: NTS



NOTE:
1. COAT FIELD WELD WITH ZINC RICH PAINT PER GENERAL STRUCTURAL NOTES.
2. GUARDRAIL NOT SHOWN FOR CLARITY.

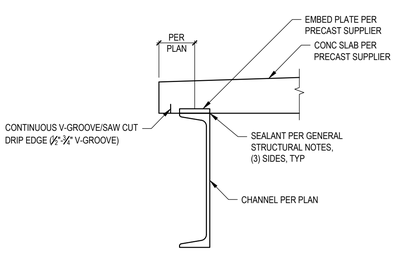
9 TREAD CONNECTION TO STRINGER

SCALE: NTS



10 (N) FOUNDATION TO (E) FOUNDATION

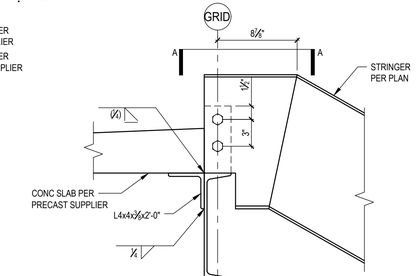
SCALE: NTS



NOTE:
1. COAT FIELD WELD WITH ZINC RICH PAINT PER GENERAL STRUCTURAL NOTES.
2. GUARDRAIL NOT SHOWN FOR CLARITY.

11 CONCRETE SLAB TO CHANNEL AT BACK OF LANDING

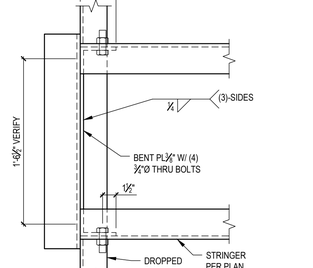
SCALE: NTS



NOTE:
1. GUARDRAIL NOT SHOWN FOR CLARITY.

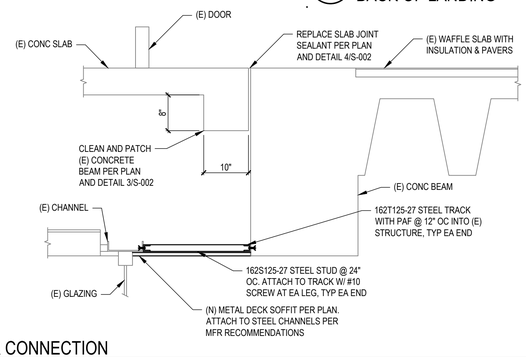
12 STRINGER TO C12

SCALE: NTS



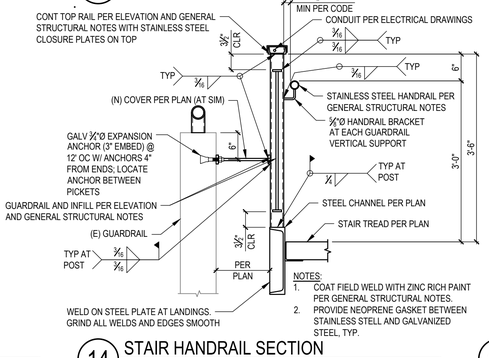
NOTE:
1. PRECAST SLAB NOT SHOWN FOR CLARITY.

SECTION A-A PLAN VIEW



13 STAIR CONNECTION

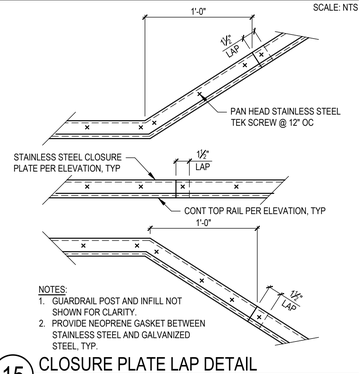
SCALE: NTS



NOTES:
1. COAT FIELD WELD WITH ZINC RICH PAINT PER GENERAL STRUCTURAL NOTES.
2. PROVIDE NEOPRENE GASKET BETWEEN STAINLESS STELL AND GALVANIZED STEEL, TYP.

14 STAIR HANDRAIL SECTION

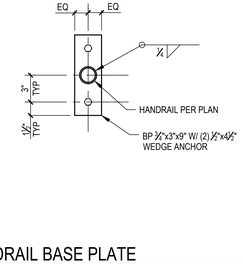
SCALE: NTS



NOTES:
1. GUARDRAIL POST AND INFILL NOT SHOWN FOR CLARITY.
2. PROVIDE NEOPRENE GASKET BETWEEN STAINLESS STEEL AND GALVANIZED STEEL, TYP.

15 CLOSURE PLATE LAP DETAIL

SCALE: NTS



16 HANDRAIL BASE PLATE

SCALE: NTS

COFFMAN ENGINEERS
10 N. Post Street,
Suite 500
Spokane, WA 99201
ph 509.328.2994
www.coffman.com

DAVID L. PEDEN
STATE OF WASHINGTON
27251
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER
6/29/2023

EASTERN WASHINGTON UNIVERSITY

PEA STAIRCASE REPLACEMENT & DRAINAGE IMPROVEMENTS

ISSUED FOR CONSTRUCTION

EASTERN WASHINGTON UNIVERSITY

REV	DATE	DESCRIPTION

PROJ. NO.	192085
DRAWN	CEP
CHECKED	DLP
DATE	06/28/2023

SHEET TITLE:

BRACE FRAME DETAILS

SHEET NO:

S-502

Construction & Planning Services
Eastern Washington University
1115 Cedar Street, 101 Rozell Plant, Cheney WA 99004-2464
(509) 359-6565 FAX (509) 359-4224

Capital Project Budget Estimate

CP **1055**
Index: **600059**
Spending Limit:

Project Name: **PE Activities Exterior Stair Replacement 2019**
Project Manager: **Kris Jeske**
Date: **April 13, 2023**

									Estimated	% Total
Project Management										
A/E Selection & Fee Negotiation				4	hrs	x	137.53		550.12	
Estimates & Budget Updates				10	hrs	x	137.53		1,375.30	
Effort prior to scope change					hrs	x	137.53		6,589.71	
Project Management - **Design**				72	hrs	x	137.53		9,902.16	
6	weeks @	12	hours/week							
Project Management - **Bidding**				24	hrs	x	137.53		3,300.72	
3	weeks @	8	hours/week							
Project Management - **Construction**				160	hrs	x	137.53		22,004.80	
10	weeks @	16	hours/week							
								Project Management Subtotal	**43,722.81**	6.2%
Consultant Services										
A/E - Basic Services - Coffman									43,100.00	
A/E - Effort prior to scope change - Coffman									10,124.50	
A/E - Hazardous Materials Survey									0.00	
Testing & Inspection									0.00	
Testing & Balancing - Allwest									7,260.00	
NREC Rev/Insp									0.00	
Commissioning									0.00	
Value Engineering									0.00	
Constructability Review									0.00	
Speciality Consultant Services								***Speciality Subtotal:***	0.00	
FLS	0.00									
Geotech Survey	0.00									
Planning Sudy	0.00									
Site Survey	0.00									
Speciality (other)	0.00									
								Consultant Services Subtotal	**60,484.50**	8.5%
Construction Services										
GC - MACC + Alt - (Bid Price)	498,000.00		WSST	8.90%		44,322.00			542,322.00	
Building Permits	.			1%					5,423.22	
								Construction Services Subtotal	**547,745.22**	77.1%
Shop Support	**Material Purchases**									
010 - Access Controls	0.00	4	hrs	x	75.21		300.84			
020 - Automotive	0.00	0	hrs	x	107.63		0.00			
030 - Building Maint	0.00	12	hrs	x	73.42		881.04			
050 - Custodial Services	0.00	0	hrs	x	33.28		0.00			
052 - Custodial Equip	0.00	0	hrs	x	33.28		0.00			
060 - Electrical	0.00	10	hrs	x	95.14		951.40			
070 - Energy MGMT	0.00	0	hrs	x	80.68		0.00			
080 - EHS	0.00	10	hrs	x	78.79		787.90			
090 - Fabrication	0.00	0	hrs	x	74.73		0.00			
140 - Grounds Maint	0.00	10	hrs	x	58.34		583.40			
150 - Housing Maint	0.00	0	hrs	x	68.89		0.00			
160 - HVAC/R	0.00	0	hrs	x	80.68		0.00			
170 - Insulation Maint	0.00	0	hrs	x	78.52		0.00			
190 - Paint and Sign	0.00	4	hrs	x	74.84		299.36			
200 - Plant Operations	0.00	0	hrs	x	97.15		0.00			
210 - Plumbing	0.00	4	hrs	x	82.05		328.20			
260 - Trucking Services	0.00	0	hrs	x	50.35		0.00			
265 - Recycling Services	0.00	0	hrs	x	50.35		0.00			
270 - Refuse Services	0.00	0	hrs	x	50.35		0.00			
Material Purchases Subtotal	0.00									0.0%
								Shop Support Subtotal	**4,132.14**	
FFE										
Furnishings									0.00	
Equipment Fixed									0.00	
Equipment Movable									0.00	
Fire Alarms/Safety									0.00	
Telecom/Networking									0.00	
AV System									0.00	
Security/Access Control									0.00	
Custodial Equip/Supplies									0.00	
								FFE Subtotal	**0.00**	0.0%
Miscellaneous										
Artwork									0.00	
Hazmat Testing *SEE ABOVE*									250.00	
Advertising									0.00	
Miscellaneous Materials									0.00	
OTHER	0.00									
Purchase Orders/Additional Materials etc.	0.00									
								Misc. Subtotal	**250.00**	0.0%
								Project Budget Subtotal	***656,334.67***	
Contingency										
Total project contingency	5%			x	656,334.67					
								Contingency Subtotal	**32,816.73**	
Administrative Fees										
ACR *(only on indexes starting with 6)*	3 %			x	689,151.40 **				20,674.54	
Administrative prior to scope change									372.23	
								Administrative Fees Subtotal	**21,046.77**	
								Project TOTAL with contingency	**710,198.18**	
								Maximum Budget	0.00	
								Estimated Budget Balance	-710,198.18	

- EWU – UTILITY TUNNEL REPAIRS -

Pre-Design Report
(CP-1089)

Eastern Washington University
Cheney, WA

Prepared by:

MSI Engineers
108 N. Washington Street, Suite 505
Spokane, WA 99201

MSI# 22.04

Prepared For:
EWU Facilities and Planning

November 2, 2022

Project Overall Goal:

Survey, assess, design and install/repair deferred maintenance elements within the existing Eastern Washington University's underground campus-wide utility distribution tunnel network (aka steam tunnel).

As such, the primary goal of this project is to provide and ensure that the campus utility distribution systems are safe and reliable for the future. Also, as part of this effort, another goal is to upgrade and enhance the actual underground tunnel system that conveys these systems, so that it is also a reasonably safe, dry, clean, and well lit environment for the maintenance staff, that periodically inspect and work within the utility tunnel network.

Campus utility distribution systems include:

High pressure steam piping for building heating duty.

Chilled water piping for building air conditioning duty.

Electrical power distribution.

Campus-wide communications and data systems.

Background:

The original portions of the existing EWU utility tunnel were constructed in the early 1970's, with periodic expansions and extensions built as the campus has grown to its present configuration. Much of the utility tunnel, and its distribution systems, are therefore over fifty (50) years old, and are beginning to show various degrees of aging and deterioration. The newest section of tunnel was built in 2019, from the PUB to the new Integrated Science Center (ISC).

In its present configuration, the EWU utility tunnel is approximately 12,100 linear feet in length, equivalent to roughly 2.30 miles.

One of the more serious aging issues present in the tunnel system, is the degradation of the steel pipe support stands, due to years of ground water intrusion, and varying degrees of questionable dewatering efforts.

Also, the existing lighting system in the tunnel is beginning to show its age. Although most of the existing lighting uses newer fluorescent fixtures, which replaced the original incandescent "mason jar" lights, it is the desire of the EWU facilities staff to upgrade this lighting to even more efficient LED fixtures, which also have a much longer life expectancy.

EWU Utility Tunnel Map

Survey and Evaluation Process:

The pre-design report was developed by surveying and mapping the existing EWU utility tunnel, and then visually assessing the condition of the various systems and components present, in order to identify those elements in need of repair, modification or replacement.

- Overall tunnel conditions and visual evaluation of distribution systems.
- Pipe supports
- Drainage sumps and pumps
- Tunnel lighting and switching
- Exit lights

Tunnel Survey Process:

The existing EWU utility tunnel was visited and surveyed by both the mechanical and electrical teams from MSI Engineers, over the course of several weeks. The initial visits used both cloth tape and survey wheels, to accurately measure, and mark, the main utility tunnel and branch tunnel lengths, so as to create a more accurate campus map of the tunnel network. Tunnel distances and station numbering were chalked on the concrete walls of the tunnel, in order to leave “bread crumb” marks for follow-up survey points of reference.

Mechanical Survey:

Follow up surveys by the mechanical team, inspected and documented each and every pipe support stanchion (approx. 1,800 individual stands and concrete bases) and related components, and input them in to field survey logbooks, which were later used to score the condition of the various elements. The existing drainage sumps were also documented. All support stanchions were marked with chalk to document their station numbering, for later identification purposes.

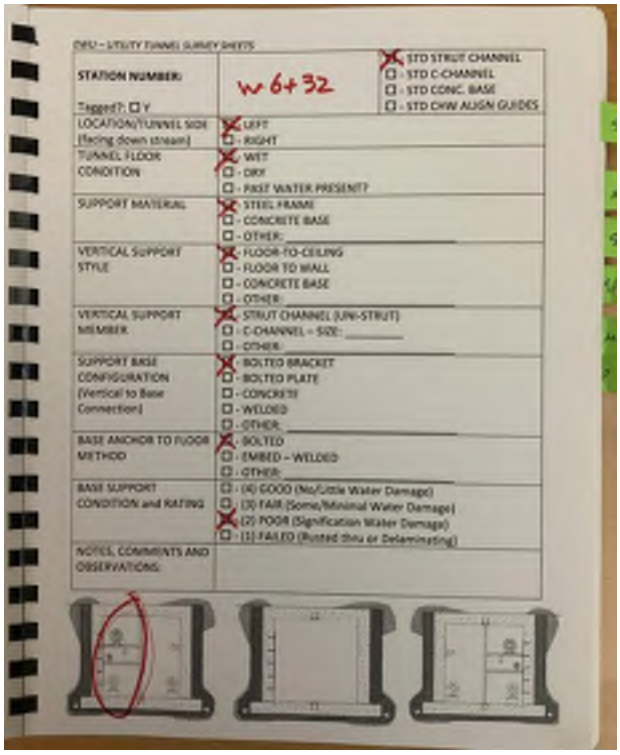
Example Field Survey Station Numbering “Chalk Marks” on Pipe Support Stanchions

Utility Tunnel Field Survey Logbooks

Example Logbook

Support Stanchion

Survey Form



Mechanical Support Stand Survey Data:

- Station Number: Location/distance from tunnel section starting point (0+00)
- Tunnel floor condition (wet, dry, dry with signs of past water)
- Support material
- Support member type
- Base configuration
- Base anchor to floor configuration
- Base support condition (Good, Fair, Poor, Failed)
    - Good = No/Little Water Damage
    - Fair = Some/Minimal Water Damage
    - Poor = Significant Water Damage
    - Failed = Rusted Thru or Delaminating

Example Support Stand Condition Assessments:

Good

Little or No Water Damage

Fair

Some/Minimal Water Damage

Poor

Significant Water Damage

Failed

Rusted Thru or Delaminating

Pipe Support Stand Assessments:

Using the extensive data collected from the field surveys, it was possible to numerically rate each of the steel member support stands, in regards to their base conditions from water damage. The support stanchion base conditions were rated as follows:

1 = Failed

2 = Poor

3 = Fair

4 = Good

Ratings were mostly subjective, based on the visual condition of the base, the amount of rust present, calcium build-up, and proximity to other tunnel conditions (wet, dry or previously wet). In almost all cases, except for the very rare instances where the stand had completely rusted thru, even those rated as “poor”, with significant rust or calcium build up, were generally found to still be structurally sound and intact.

Suspect stands were periodically tested for their connection to the tunnel floor, via their resistance to kicking or push-pulling. The results indicated that even the most rusted stands did not move or wiggle when tested, indicating that, even though many are visually questionable, they are generally still providing adequate gravity support to the respective piping. That is good news, as it indicates that the tunnel piping distribution systems are sound, and not in immediate danger of failure due to catastrophic, tunnel-wide, support stand collapses.

However, that said, it is our opinion that the clock is ticking on the future reliability and soundness of the existing tunnel pipe support system, primarily due to the past, and likely future, degradation of the steel members from continued ground water infiltration.

Concrete Bases and Pipe Anchors:

In the course of the tunnel support stand survey, the existing concrete bases, used to support the chilled water piping near the floor, and the intermittently located main pipeline anchor assemblies, were also documented and rated. The vast majority of the concrete floor bases are in fairly good condition, since the concrete is reasonably resistant to water damage and/or rusting. Likewise, the large pipeline anchor assemblies are mostly bolted into the tunnel walls, which have allowed them to be isolated from the water damage that is present at the floor level. In general, these bases and anchors are in good condition throughout the entire tunnel network.

Pipe Support Stand Assessment Analysis Results:

The information and ratings from the field survey work were plugged into a spreadsheet. This spreadsheet was then organized to classify the quantity and rating of the support stands in the tunnel network. The following is a summary of these results.

Tunnel Support Stand Overall Assessment Summary Table			
Support Stand Rating	Number of Support Stands	Percentage of Total	Average Rating for Entire Tunnel Network Support Stands
Failed = 1	9	0.6%	3.0147
Poor = 2	471	29.4%	
Fair = 3	562	35.1%	
Good = 4	558	34.9%	
Total	1,600	100%	

Discussion:

As can be seen from the above rating summary table, roughly one-third (30%) of the steel support stanchion bases are in poor, or worse, condition, with a handful of support stands that have actually failed (rusted through).

This tends to agree with more casual observations of the tunnel support conditions, when simply traversing the tunnel for other purposes, and reinforces the general impression that a large percentage of the tunnel supports are in poor condition, and probably due for some attention, which is, of course, the genesis of this particular project study.

Recommendations:

Based on the above scorecard ratings, it is recommended that a certain portion of the existing support stanchion bases be “repaired” (improved/modified/replaced), where past water damage has occurred, and so as to mitigate further degradation from future water damage.

Questions:

1. How many support stand bases should be repaired?
2. What does the support stand base repair look like?

How Many Support Stand Bases Should be Repaired?

While studying this question, there are several possible answers. Obviously, any support stand that has completely failed should be repaired or replaced. Beyond that the answer is a bit more fuzzy, and somewhat subjective.

Because most of the tunnel support stands and bases are fairly sound, and still providing adequate gravity support to the affected piping, it could be argued that only the very worst of these, rated 1 or 2, should be repaired or replaced. This would be the minimal approach, addressing about 480 stands, and would result in a sort of piece-meal, case by case, repair outcome. However, this might look a bit questionable after the fact, as a number of "new", repaired, support stands, would be sprinkled in with nearby "fair" rated stands, that would then not look so good by comparison.

Perhaps a better repair approach would be to upgrade entire sections of support stand bases, where the overall score is somewhere between 2 (poor) and 3 (fair), so that the piece-meal, minimalist selective approach, is mostly avoided.

With this in mind, we have used the field survey rating data to classify the entire tunnel support stand network into 100-foot sections, in order to better identify the most needy areas for recommended support stand repairs. The idea with this is that where most of the support stand base ratings fall below a certain level, all the support stands in the same 100-foot section would be repaired, even those few maybe rated as "fair" or even "good", in order to avoid the questionable piece-meal, case by case, repair approach.

In order to help better visually the results of the 100-foot classification effort, we have developed a tunnel map using the following "Stop Light" style color-coded key.

Stop-Light Rating System:

Green = Good (Average is "Fair" or better):

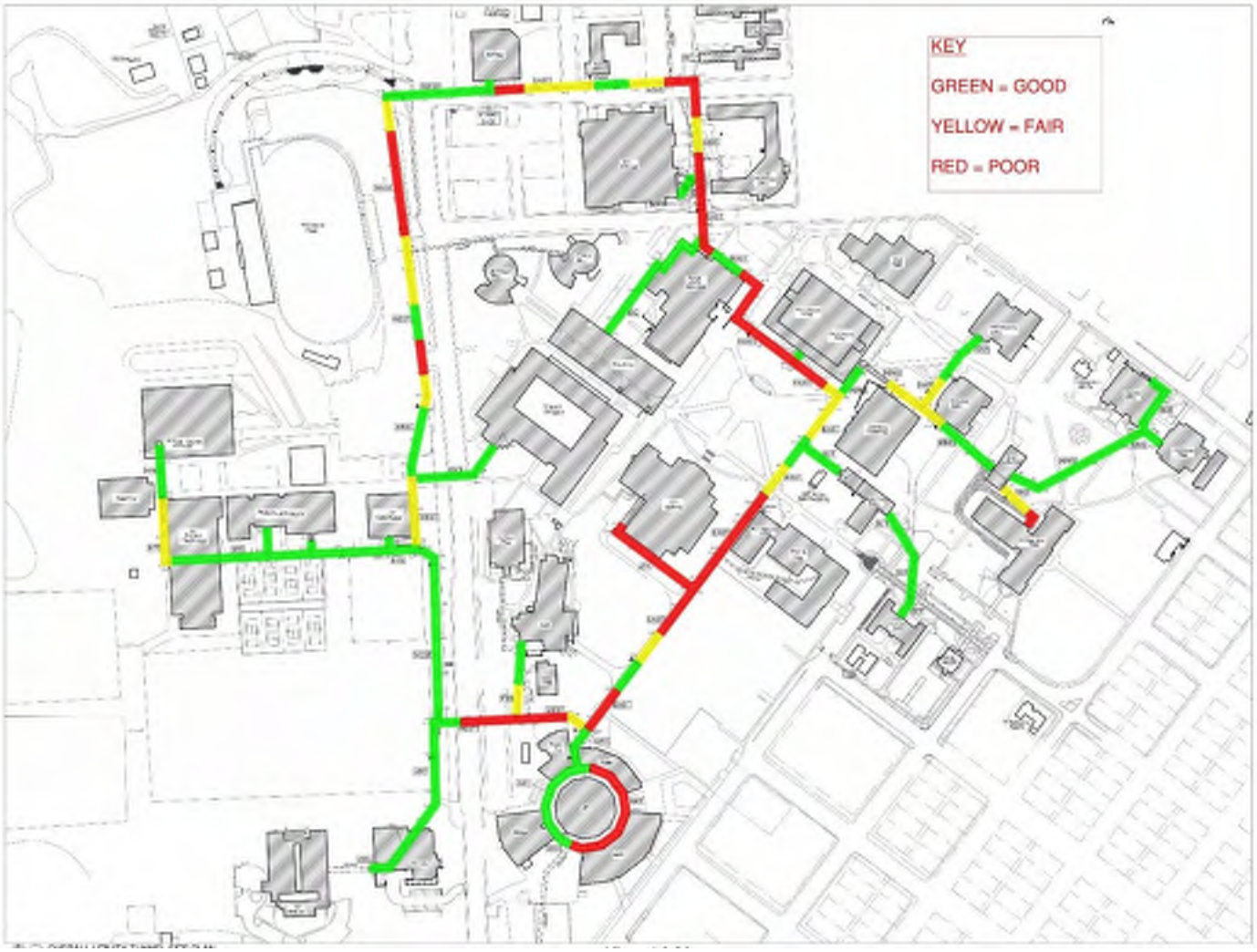
- No support stand base repairs needed.

Yellow = Fair (Average is less than 50% "Poor"):

- Repair/Upgrade **only select,** case by case, support stand bases in this section.

Red = Poor (Majority are rated as "Poor" or worse):

- Repair/Upgrade **all** support stand bases in this section.



EWU Utility Tunnel Map – Overall Support Stand Base Assessments

Green = Good (Average is “Fair” or better):

- No support stand base repairs needed.

Yellow = Fair (Average is less than 50% “Poor”):

- Repair/Upgrade **only select,** case by case, support stand bases in this section.

Red = Poor (Majority are rated as “Poor” or worse):

- Repair/Upgrade **all** support stand bases in this section.

Using the above “stop-lite”, Green-Yellow-Red rating method for each 100-foot section of utility tunnel, a larger number of support stand bases become candidates for repair. Under this more broad approach, the number of support stands targeted for repair increases from the minimalist, case-by-case, value note above, of 480 stanchions, to approximately 650 stanchions.

In other words, it is recommended that all support stand bases in the “Red” sections be replaced, regardless of rating, and select, case by case, bases be replaced in the “Yellow” sections of the utility tunnel network.

Support stands within the “Green” sections of tunnel are generally considered as either “fair” or “good”, and do not require selective repairs at this time.

Support Stanchion Base Repair/Replacements Recommendations:

1) Case by Case: Only repair those rated Failed (1) or Poor (2): = 480 each

2) By Section: Repair all stanchions in “Red” tunnel sections, plus select “Poor” rated stanchions in “Yellow” sections: = 650 each

What Does the Support Stand Base Repair Method Look Like?

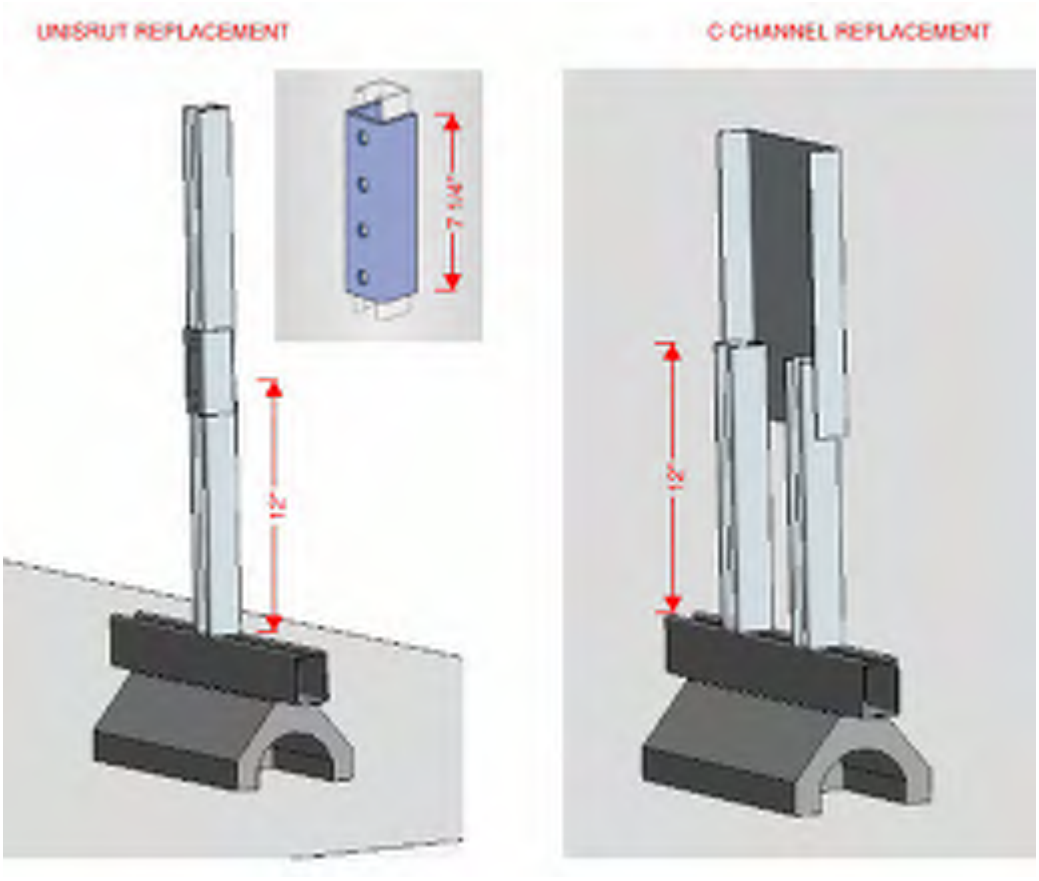
With the general assessment of the support stand bases completed per above, the question of how to repair or replace the affected stands is next.

Because most of the support stand's upper steel members have not been negatively affected by the presence of floor level water and resultant corrosion, that has overwise damaged the bases, it seems reasonable to keep most of the existing upper support stand steel structure intact, and only repair or replace the lower damaged portions, near the wet floor level. This also avoids the cost and complication of disconnecting all of the upper support cross-members, ceiling anchors, etc., since these can be left in place, while the base assemblies are replaced.

It was felt that the most important consideration in repairing the damaged support stands, was to come up with a solution that provided a new baseplate that was not so prone to the inevitable water damage. A number of ideas were investigated, including using stainless steel bases, fiberglass risers, concrete curbs or other base mounting materials that were more corrosion resistant. Ultimately it was determined that using pre-manufactured "roof mounting bases" would provide both the inherent water resistance and structural strength, necessary to carry the support stand loads.

Also, the installation of pre-fabricated assemblies, with bolted strut-channel connections, would greatly simplify the repair work, and also avoid having to do any welding inside the confined tunnel spaces.

Proposed Pre-Fabricated "Roof Mounting Bases" for Stand Repairs



Proposed Support Stand Repair Design Sketches

Proposed Support Stand Repair Actual Mock-up Installations

Support Stanchion Base Water Damage Discussion:

It is clear to all, when surveying the condition of the utility tunnel support stands and their floor connection bases, that the root cause of most of the deterioration over the years is from ground water intrusion and resulting corrosion and calcium build-up on the metallic elements.

One course of action to minimize the continued, and future, support stand degradation, would be to vastly improve the dewatering system. However, the feasibility of such a global solution is fairly challenging, as will be discussed in the following sections.

So, recognizing that some degree of continued, and future, water intrusion, and therefore resultant tunnel support stand moisture attack, is likely, it seems prudent, at least as the first step, to fix the damage that has already been done up to this point, and then, to also try to prevent, or at least minimize, future water damage to the tunnel support stand system. This seems to be the best path forward to assuring a safe and reliable utility distribution system for the campus going into the future.

Drainage Sump and Sump Pump Dewatering Assessments:

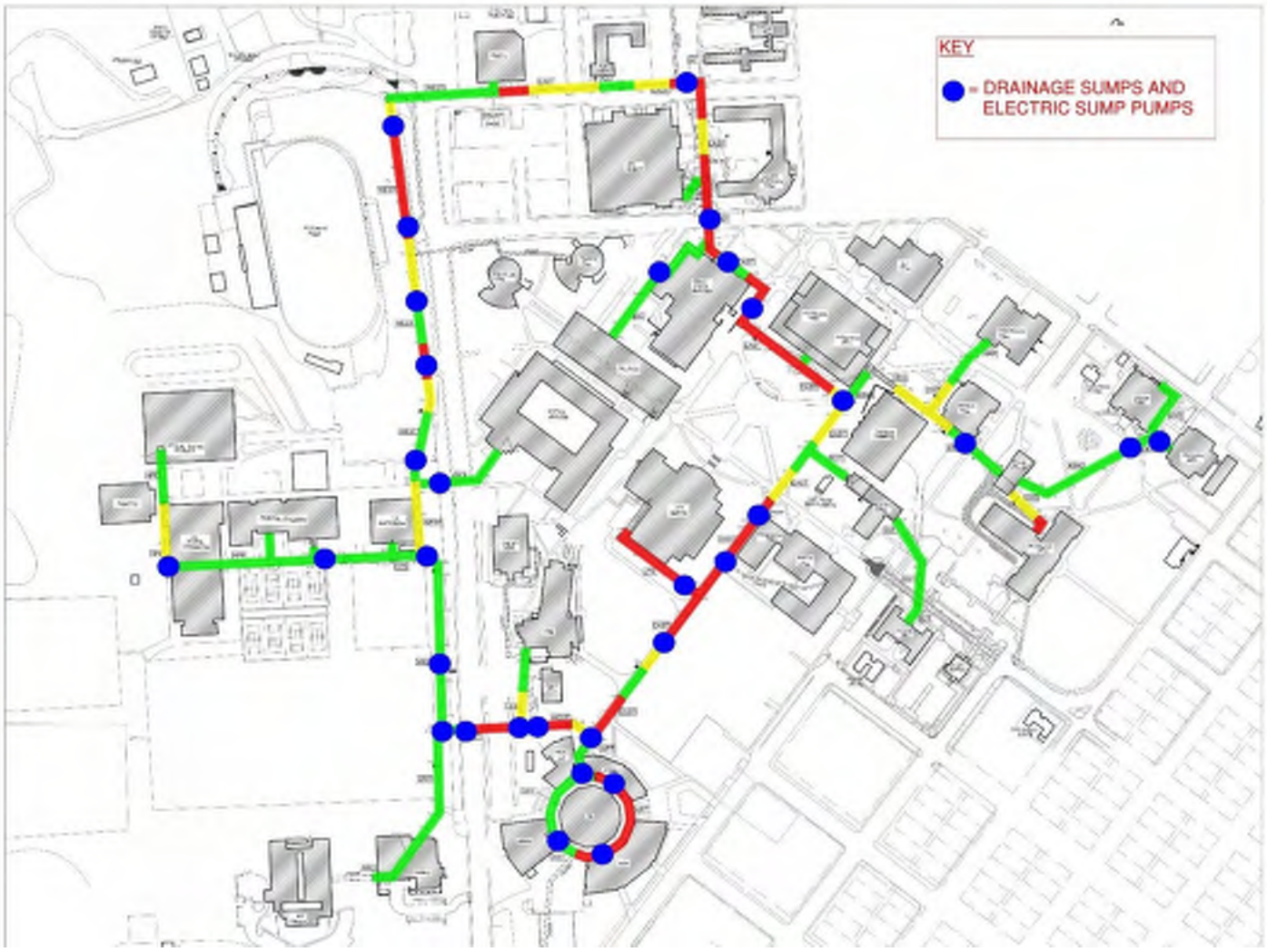
Perhaps the single biggest problem, and challenge, within the existing underground utility tunnel network, is dealing with the ever-present ground water intrusion. Most of the degradation to the tunnel piping support stands, and other tunnel elements such as light fixtures, switches, floor and wall surfaces, etc., can be directly attributed to the effects of water damage over time.

It is estimated from the survey data, that approximately 70% of the steel pipe support stand bases installed throughout the tunnel network, have been subjected to some degree of water damage, in the form of rusting or calcium build-up. Likewise, many of the light fixtures, switches and other auxiliary systems show some degree of water damage from ground water intrusion.

The existing utility tunnel network has a series of approximately 32 floor level drainage sumps, with electric operated sump pumps, in place to try and collect the ground water that infiltrates into the tunnels, and then pump the water to various external discharge points outside the tunnel (typically to nearby basement mechanical rooms).

The effectiveness of these sumps and pumps over the years has been mixed. The sump pumps are difficult to monitor and maintain/replace, their electronic float mechanisms are prone to failure, and external discharge points are missing in some cases. In addition, the amount of ground water infiltration, its location and distribution, varies wildly from season to season, year to year, and within various parts of the tunnel itself. There is evidence of water intrusion in most of the tunnel sections, with signs of

calcium deposits almost everywhere, but some parts of the tunnel are bone dry, while others are constantly wet. Also, depending upon where the water enters the tunnel envelope, often at joints in the walls or ceiling, it may sheet drain across large portions of the floor, impacting many support stand bases, before it may, or may not, find it's way into a nearby drainage sump.



EWU Utility Tunnel Plan – Sump Pump Location Map

Representative Examples of Tunnel Dewatering Sumps and Electric Pumps

Combating this constant ground water infiltration over the past 40 to 50 years has clearly been a difficult task, resulting in the present situation of pipe support stand base deterioration, and general tunnel condition problems.

Although the existing drainage sumps and pumps are regularly monitored for proper operation, and are replaced or repaired as needed, the effectiveness of the dewatering network is still problematic.

In fact, one particular sump pump, located on the eastern leg from Rozell, near the corner at Dryden Hall (Station # E5+31), and just prior to turning south towards the REC facility, is discharging via a fire hose, directly onto the tunnel floor near the corner. Presumably there is no convenient, nearby, external discharge point for this sump to feed into. From here the water creates a literal stream, as it travels downhill to try and find its way into other sumps near the SUB and Patterson hall, with mixed results, until the remaining water finds its way into the large sump in the main tunnel tee, just prior to Tawanka Commons.

Fire hose discharge directly on to tunnel floor from nearby sump pump

Problematic dewatering discharge stream running down tunnel floor

Options for Dewatering Sump Pump Improvements:

The design team considered a number of possible ways to help improve the dewatering system within the EWU utility tunnel network, since it is apparent that improving tunnel drainage will have a direct impact on improving the life expectancy and reliability of, the utility tunnel and its critical infrastructure distribution systems.

The design team also considered possible ways to improve the water-proofing of the existing concrete tunnel itself, so as to try and reduce water infiltration. This approach was quickly ruled out as being unfeasible, since the only real effective way to improve the tunnel water-proofing, would involve external (outside wall & roof) coatings, wraps, or other protective measures. The installation of these measure could only be achieved by excavating the tunnels in order to expose the envelope. This would not only be impractical on an active campus, but would be hugely expensive, with questionable effectiveness in the end.

Although there seems to be no easy or simple solutions to the dewatering problem, several brain-storming ideas were presented and discussed, including the following:

<u>Dewatering Improvement Concepts:</u>

1. Do nothing – Continue to monitor, repair and/or replace the electric sump pumps.

2. Replace the electric sump pumps with a tunnel-wide vacuum drainage system(s).

3. Replace or supplement, the submersible electric sump pumps with pressure powered pumps (similar to the steam-powered condensate return pumps being used in the tunnel).

4. Replace the submersible electric sump pumps with above-floor suction type pumps.

5. Add Water-Powered Backup Sump Pumps to Critical Locations.

6. Enlarge or add drainage sumps, in order to improve submersible electric sump pump operations, monitoring and ease of maintenance.

7. Modify tunnel floor with added drainage channels or dams, to better collect and direct water to the sumps.

Dewatering Options:

1. Do Nothing:

   Pros: Low, no cost option.

   Cons: Doesn't really improve the drainage situation.

2. Install Vacuum Drainage System:

Pros: Eliminates problematic electric sump pumps.

Locates drainage equipment (vacuum pumps) in nearby buildings.

Can be also used to vacuum clean the tunnel floors.

Cons: Complicated system.

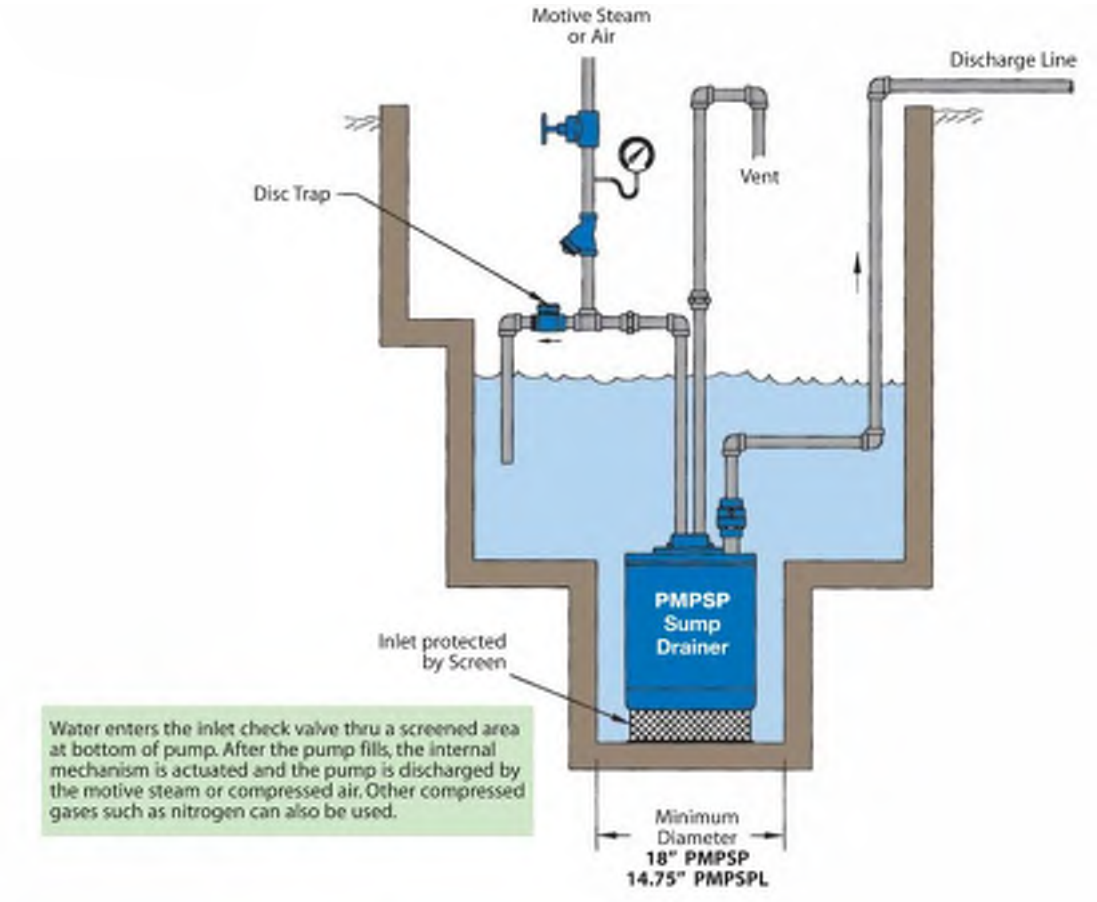
Requires equipment space in multiple building basements.

Point-of-use intake valves/sensors (finicky).

Complex and very expensive.

Unproven for this sort of application.

3. Install Pressure Powered Drain Pumps:



Pros: Eliminates troublesome electric sump pumps and floats.

Robust construction. Designed for sump drainage.

Utilizes available tunnel steam for motive power.

Eliminates need for electrical power circuits.

Cons: Requires larger/deeper sumps (See No. 5 below).

Requires steam system tie-ins.

Heavier and tricky to replace.

Somewhat costly to provide and install.

4. Install above-floor Suction Type Pumps:

   Pros: Eliminates troublesome submersible type pumps.

   Locates actual pump assembly in a more accessible spot, above the floor.

   Cons: Self-priming suction systems are prone to failure/loss of prime.

   Still requires finicky on-off float mechanism down in sump.

5. Add Water-Powered Back-up Sump Pumps at Critical Locations:

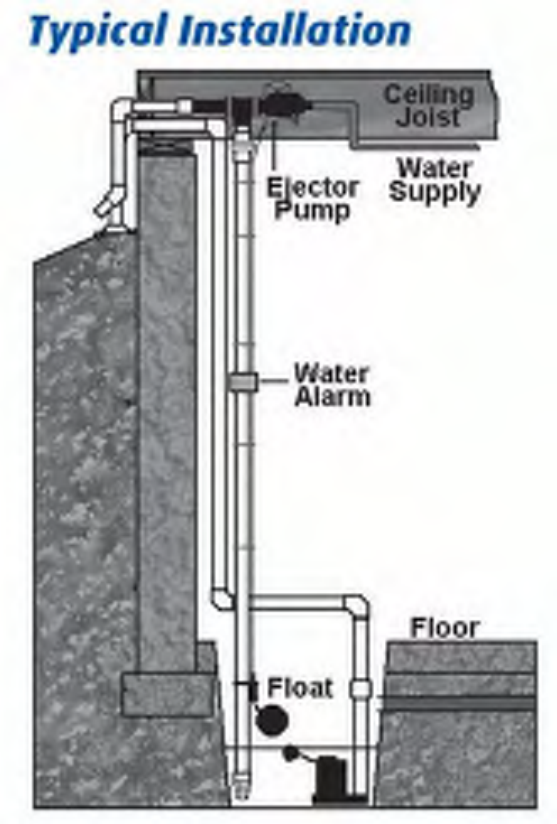
   Pros: Provides sump drainage even in a power outage or electric pump failure.

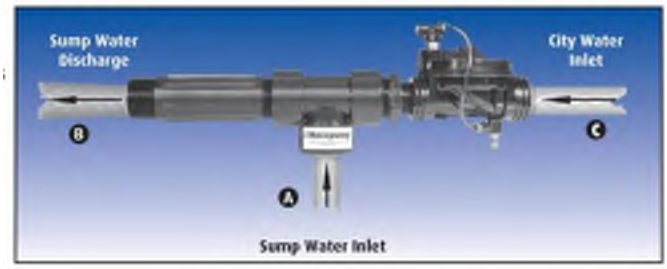
   Fairly simple operation. No power or batteries required. Hydraulic only.

   Cons: Requires water supply to create siphon venturi ejector vacuum force.

   Require dual (separate) water discharge pipes to remote spill locations.

   Still requires finicky on-off float mechanism down in sump.





6. Enlarge or Add Drainage Sumps:

   Pros: Provides more service access to submersible pumps being used.

   Provides more intake area for water capture.

   Can be better located to capture known water paths.

   Cons: Requires costly/tricky cutting-out of tunnel floors.

   Introduces an awkward drainage grate in the middle of the tunnel floors.

7. Modify Tunnel Drainage Pathways/Channels to Sumps:

   Pros: Fairly simple to create.

   Can better control damaging water flow paths.

   Cons: Difficult to determine practical locations and routes.

   Water infiltration locations highly variable.

   Added channels or diversion “dikes” may become walking hazards.

Recommendations for Dewatering Sump Pump Improvements:

There are no easy or obvious solutions to improving the tunnel drainage system. Of all the various options considered above, we feel that Option 3) adding more drainage sump locations, where the most persistent water intrusion is occurring, and using the non-electric, steam-powered sump pumps, is the most promising approach.

The steam-powered pumps are very robust, do not rely on electricity to operate, are designed to operate in a challenged environment, and can take advantage of the already present steam supply through-out the tunnel network.

Perhaps the main challenge to adding more drain sumps, is physically cutting them in to the floor of the concrete tunnels, in the extremely tight working space available. That said, we think that it would be possible to saw-cut floor openings, dig out the under-floor material (dirt and rocks), drop-in a fiberglass type basin, and pour-back with concrete. The sump will have to be located in the center aisle of the tunnel, to make installation feasible, which is not ideal from a personnel passage standpoint, but that is not unique to the tunnel’s other challenges, and by using removable grates and careful attention to the piping routes, we think that service access and passageway can be maintained.

Considerations for Improving Pipeline Service Identification and Tunnel Navigation:

When traversing the existing utility tunnel network at EWU, it is quickly apparent that route-finding, locational awareness and utility service identification is very difficult. There are no formal tunnel ID markers or addresses present, branches to building basements, or main tunnel laterals, are not officially marked, and in only a few cases are some marked with Sharpies on nearby walls or pipes. Likewise, much of the existing steam and chilled water piping is not marked with system ID or flow direction labels, and where previous system type ID color coatings are present, they have been inconsistently used in follow-up projects or modifications.

Understanding where you are, what systems are feeding what, and in what direction, takes a lot of experience and time spent in the tunnel network. It is almost impossible to direct someone that is not familiar, where in the tunnel an issue has occurred, that might require immediate attention or repair, since there is no formal addressing scheme or "road signs" present. This is clearly a challenge to maintenance work that needs to occur on a regular basis.

Because of the obvious advantages to having better and more consistent pipeline system ID labels and flow directions present, as well as adding a formal tunnel addressing scheme and marker "road signs", it is our recommendation that these elements be included as part of the overall tunnel repair project work.

Example Existing Inconsistent Pipe ID Labels, Color Coating and Tunnel Address Marking on Pipe

Utility Tunnel Location and Addressing Scheme:

While developing the utility tunnel survey maps and location information, it was determined that some sort of better addressing scheme needed to be created, so the specific location of tunnel elements could be found and identified. Using the methodology common in civil road work, it was decided that the tunnel network would be broken up into its distinct main loops and branches, with identifying prefixes and station numbering to identify the distance from the branch starting point.

Station numbering indicates the distance from the branch starting point, identified at 0+00, which means 0-hunderds of feet plus 00-tens of feet.

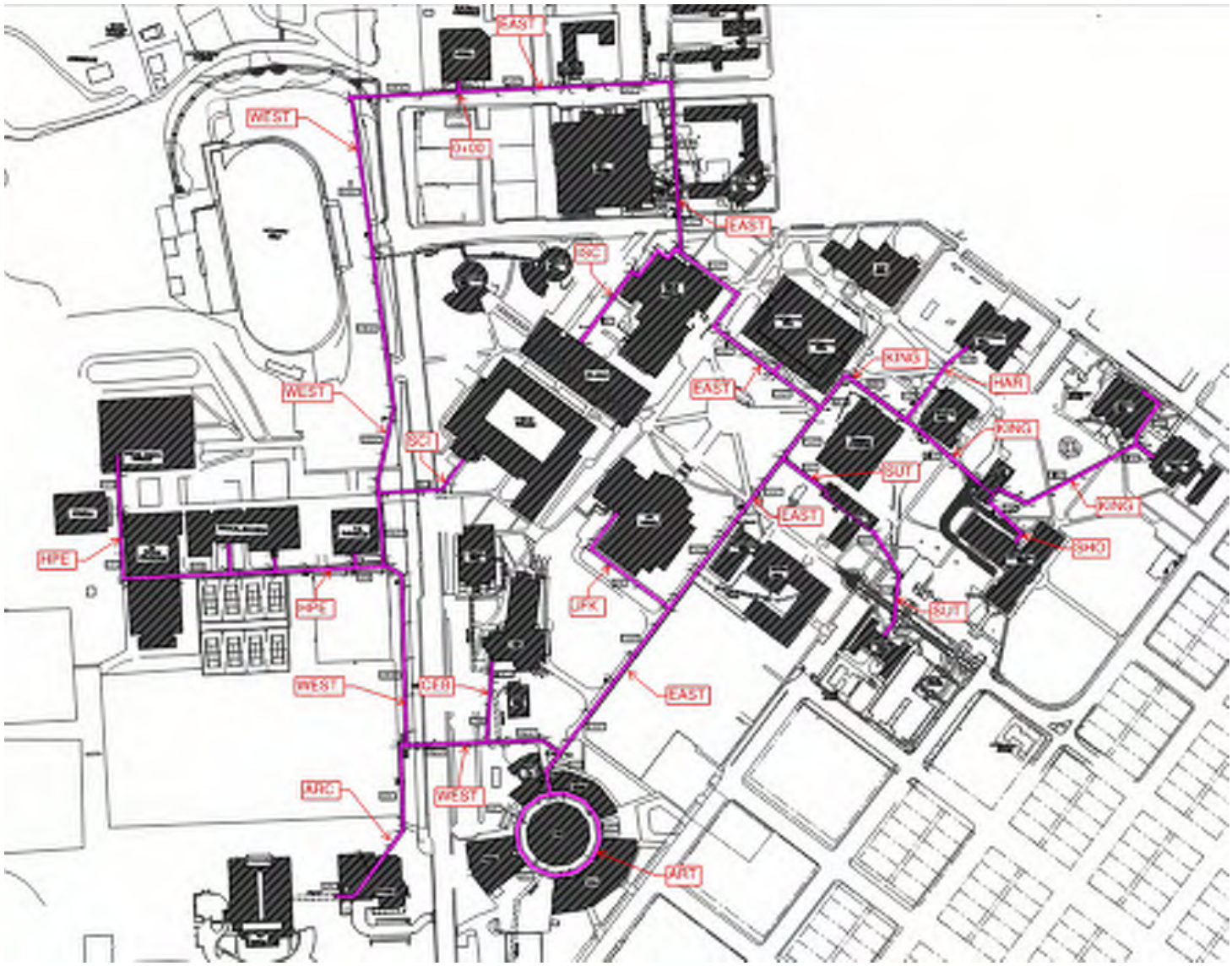
For example, an element located at 2+15, would be located 2(hundred) + 15 (feet), or 215 feet from the 0+00 point, start of the section.

For the various tunnel branch labels, it was decided that the building located at the furthest end of the individual branch section, would be used to designate the branch section from the take-off to the end.

For example, where the main tunnel branches to serve Monroe Hall and Hargraves Hall, the tunnel branch section has been designated as HAR. Distances along this branch section are therefore labeled as HAR X+XX.

For the main tunnel loops that start at the Rozell central plant, they are designate as WEST and EAST. The WEST loop runs from Rozell down Washington Street, and loops around to where it joins the EAST loop near the ART complex. The EAST loop runs from Rozell, down past the Recreation Center, the PUB, and then down through the central campus mall, where it then ties into the WEST loop at the ART complex.

See the Utility Tunnel Labeling Map on the next page.



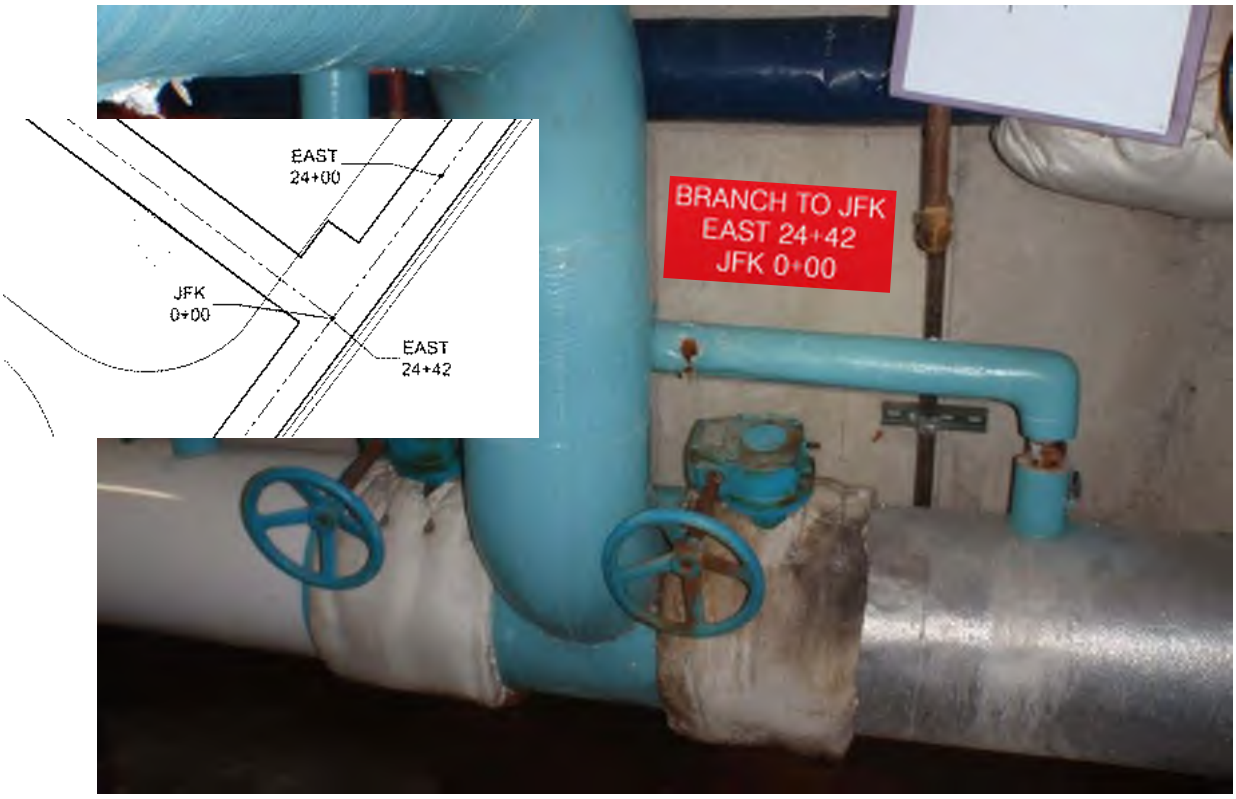
EWU Utility Tunnel Location Station Numbering Branch Section Labels

Example Tunnel Pipeline ID & Flow Direction Labels from ISC Tunnel Project

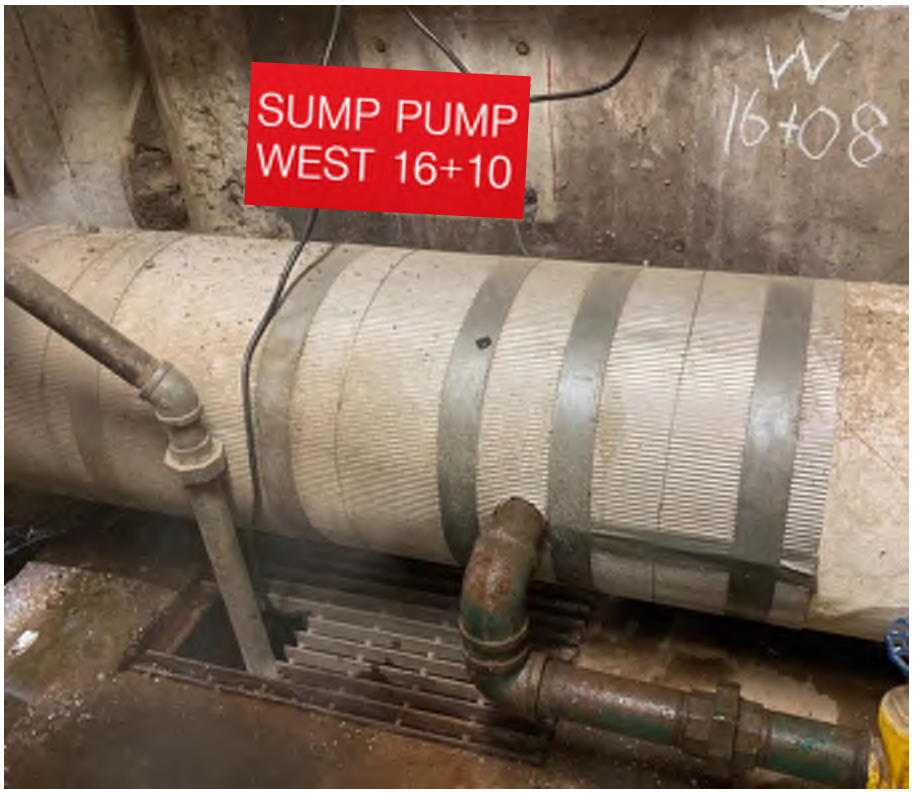
Example Tunnel Location “Road Sign” Wall Marker Nomeclature

Left: West Main Tunnel at 1,250 ft from 0+00 start point

Right: Health & PE Branch at 250 ft from 0+00 start point



Example Tunnel Location “Road Sign” Branch Take-Off Wall Marker Mock-up



Example Tunnel Location “Road Sign” for Key Equipment Location

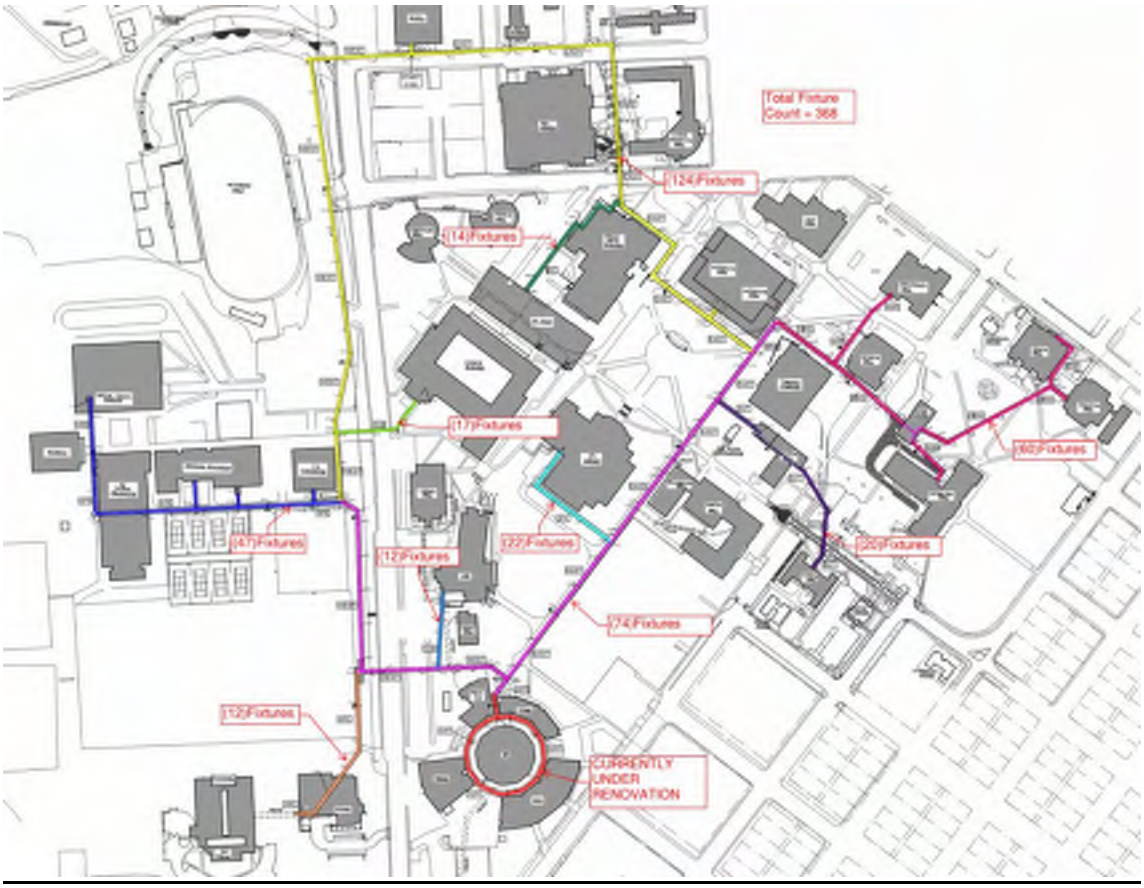
Electrical Lighting Survey:

The electrical team surveyed, inspected, and documented each light fixture and switch located throughout the tunnel. Locations of each fixture and switch were identified and documented to within a couple of feet.

Existing light fixtures are a collection of various types of fixtures that have been updated/replaced as needed. Most fixtures are typical 4' surface mount fluorescent fixtures along with some 'Jelly Jar' type compact fluorescent fixtures. General fixture spacing is approximately 25'-30' on center.

Existing Exit signs are placed throughout the tunnel in strategic locations but is not consistent throughout the tunnel. There are many areas that Exit signage is not visible.

3-Way switching is the primary lighting control and is provided the length of the tunnel. No automatic controls are currently utilized for safety/operational reasons.

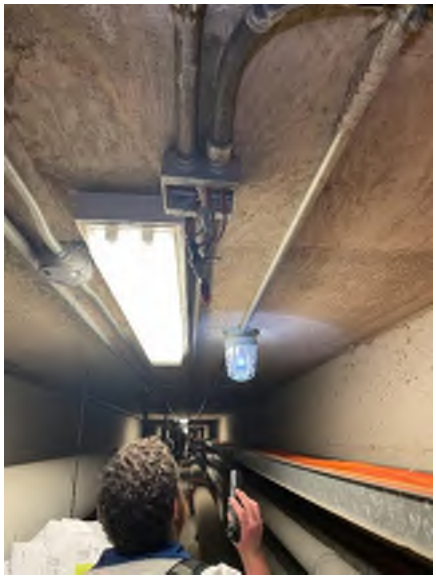


EWU Utility Tunnel Light Fixture Counts

Light Fixture Assessments:

Fixture(s) are generally past their life expectancy and are showing signs of corrosion. In some cases, severe corrosion of the fixture was observed causing safety concerns in such a humid environment.

Fixture spacing appears to be generally adequate for this application. Some areas were noted as being dark and additional fixtures likely will need to be installed to provide enough light in these areas.

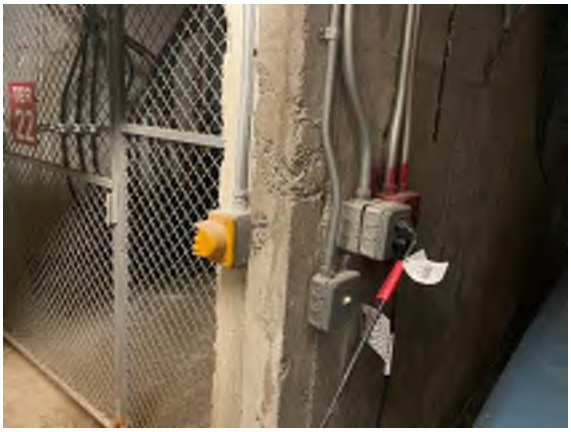


Representative Examples of Existing Light Fixture(s)

Light Fixture Switch/Control Assessments:

Existing switches are a collection of various types of switches with various environmental listings. Since the environmental listings vary some switches are past there life expectancy but are still in good condition. Some switch(es) are still within their life expectancy but their environmental listing is not for this application and are in poor condition due to corrosion.

It appears that as switches failed or needed replaced, new switches were provided, and the old switches were abandoned in place. This has led to many switches no longer being operational and causes confusion of what each switch is for, and which are the correct switch(es) to use.



Representative Examples of Existing Switch(es)

Recommendations for Lighting Improvements:

- Replace in place all existing surface mount lighting fixtures with new fixtures that are LED, fully gasketed, vapor-tight, wet rated, polycarbonate lenses, and have a fiberglass housing. Recommend Lithonia Lighting FEM LED light fixture or similar.
- Replace all existing switch(es) that are operational with the same type/manufacturer of Nema 4x rated switch(es). Recommend APPLETON Electric Contender Series Switch or similar.
- Remove all non-operational switch(es) including conduit and boxes back to source/panel.
- Remove all abandoned conduit/boxes back to source/panel.
- Place additional Exit signage to clearly identify available exits. Recommend placing additional self-luminous style exit signs that do not require power to give the most flexibility in placement. Recommend a Lithonia D type fixture with 20 Year life or similar.

Additional Electrical Recommendations and Observations:

During site investigation it was observed that many electrical conduits associated with the lighting, receptacles, and various pumps/equipment has had water intrusion. There are many open junction boxes and loose fittings that have allowed for water to get inside the conduits which in turn has likely compromised the integrity of the conduit itself. Dependent on the type of conductor utilized inside the conduit, the conductor insulation also could be compromised. Recommendation is to provide new PVC coated RGS or Stainless Steel conduit and conductor in areas that conduit has had water intrusion.

PROJECT SUMMARY AND RECOMMENDATIONS:

Mechanical:

A) Repair Damaged Support Stands in Selection Sections of Tunnel.
B) Install Additional Dewatering Sump Pumps in Select Critical Areas.
C) Add Pipeline ID Labels and Flow Direction Arrows.
D) Install Tunnel Station Numbering “Address” Markers.

Electrical:

E) Replace All Existing Light Fixtures with New LED Fixtures.
F) Replace All Existing Light Switches.
G) Demolish Existing Abandoned Conduit and Switches.
H) Replace Select Sections of Corroded Conduit and Wiring.
I) Install Additional Nuclear Powered Exit Signs.

APPENDIX

- Cost Estimates
- Equipment Cut-sheets
- Tunnel Survey Data Sheets

MSI ENGINEERS

EWU - Utility Tunnel Repairs
CP-1089
Pre-Design
11/2/2022
MSI# 22-04
By: B. Snow

Engineer's Opinion of Probable Costs

EWU - Utility Tunnel Repairs - Pre-Design

		Pre-Design Submittal Cost Estimate
Base Bid		
Utility Tunnel Repairs		
BARE CONSTRUCTION (BID) COSTS		$1,203,475
DESIGN/CONST. CONTINGENCY	20%	$240,695
TOTAL CONSTRUCTION COSTS		$1,444,170
STATE SALES TAX	8.9%	$128,531
BUDGET CONSTRUCTION COSTS		$1,572,701
A/E DESIGN FEES	10%	$144,417
TOTAL COST		$1,717,118
	Base Bid - Probable Range:	**$1.0M to $1.5M**
Alternate Bid Items		
Alt. Bid - 1) TBD: TOTAL COST		$0
Alternate Bid Items - TOTAL COST		$0
	Alternates - Probable Range:	**$0**
Utility Tunnel Repairs with Alternates: TOTAL COST	**Probable Range:**	**$1.0M to $1.5M**

EWU - Utility Tunnel Repairs - Pre-Design

General Conditions & Recap

	Unit	Quantity		$/unit		Cost	
1: General Conditions							
Bonds & Insurance							
Performance & Payment Bond	ea	1	$	5,000.00	$	5,000	0.4%
Liability Insurance	ea	1	$	5,000.00	$	5,000	0.4%
Site Management							
Site Mgmt., Supervision & Administration	months	4	$	15,000.00	$	60,000	5.0%
Field Office, Mobilization in and out	ea	1	$	-	$	-	0.0%
Site Office Equipment, Supplies and Expenses	ea	1	$	-	$	-	0.0%
Site Based Vehicles and Expenses	ea	1	$	-	$	-	0.0%
Communications, Phone, Data & Service	ea	1	$	-	$	-	0.0%
3-D Coordination Drawing	ea	1	$	-	$	-	0.0%
Const. Barriers	ea	1	$	-	$	-	0.0%
Temporary Fencing	ea	1	$	-	$	-	0.0%
Dust & Fume Control	ea	1	$	10,000.00	$	10,000	0.8%
Temporary Floor Protection	ea	1	$	-	$	-	0.0%
Progress Cleaning	ea	1	$	5,000.00	$	5,000	0.4%
Rubish Removal	ea	1	$	2,500.00	$	2,500	0.2%
Close-Out							
Commissioning Assistance	ea	1	$	-	$	-	0.0%
Punch List	ea	1	$	5,000.00	$	5,000	0.4%
Record Drawings	ea	1	$	-	$	-	0.0%
O&M Manuals	ea	1	$	-	$	-	0.0%
1. General Conditions					**$**	**92,500**	9%
2: Mechanical					**$**	**554,000**	53%
3: Electrical					**$**	**400,000**	38%
			BARE COSTS - SUBTOTAL		**$**	**1,046,500**	100%
	%	15		G.C. PROFIT	$	156,975	
			BARE CONSTRUCTION COSTS - TOTAL		**$**	**1,203,475**	

EWU - Utility Tunnel Repairs - Pre-Design

Mechanical

	Unit	Quantity		$/unit		Cost	
A) Pipe Support Stand Repairs							
Common Support Stand Modifications	ea	650	$	500.00	$	325,000	(Allowance)*
Misc. Special Stand/Stanchion Repairs (qty TBD)	job	1	$	10,000.00	$	10,000	
Misc. Related Work Allowance	job	1	$	15,000.00	$	15,000	
A) Pipe Support Repairs - Total					**$**	**350,000**	
B) Install Add'l Dewatering Sumps & Pumps							
(Final locations and Quantities TBD)							
Cut-In New Drain Sump Basin	ea	10	$	2,500.00	$	25,000	
Install New Steam Powered Sump Pumps	ea	10	$	2,000.00	$	20,000	
Install Steam Piping to Pump	ea	10	$	1,000.00	$	10,000	
Install Discharge Piping to Remote Drain	ea	10	$	1,000.00	$	10,000	
Misc. Related Work Allowance	job	1	$	5,000.00	$	5,000	
B) Add'l Dewatering Sump Pumps - Total					**$**	**70,000**	(Allowance)*
C) Pipe Labels and Tunnel Address Markers							
Add Pipe ID Labels and Flow Arrows:							
12,000 LF @ 20'OC = 600 labels per system X 5 pipelines	ea	3,000	$	35.00	$	105,000	
Tunnel Address Markers: 12,000 LF @ 50' OC = 240	ea	240	$	100.00	$	24,000	
Misc. ID Markers	ea	50	$	100.00	$	5,000	
C) Pipe and Tunnel Labels - Total					**$**	**134,000**	
Mechanical: BARE CONSTRUCTION COSTS - TOTAL					**$**	**554,000**	

(Allowance)* = Final Qty TBD During Design

EWU - Utility Tunnel Repairs - Pre-Design

Electrical

Electrical

	Unit	Quantity	$/unit	Cost	
New Light Fixture	ea	400	$ 250.00	$ 100,000	
Replace In Place Light Fixture (Labor)	ea	400	$ 250.00	$ 100,000	
New Light Switch	ea	80	$ 350.00	$ 28,000	
Replace in Place Light Switch (Labor)	ea	80	$ 150.00	$ 12,000	
Demolish Existing Abandoned Conduit/Switch(es)	lot	1	$ 30,000.00	$ 30,000	
100' PVC Coated Conduit With 4#10 THWN Conductor	ea	30	$ 1,500.00	$ 45,000	(Allowance)*
100' PVC Coated Conduit With 4#10 THWN Conductor (Labor)	ea	30	$ 1,250.00	$ 37,500	(Allowance)*
Nuclear Powered Exit Signs	ea	50	$ 550.00	$ 27,500	(Allowance)*
Misc. Circuit Extensions	lot	1	$ 20,000.00	$ 20,000	
			Electrical Total	**$ 400,000**	

Electrical: BARE CONSTRUCTION COSTS - TOTAL **$ 400,000**

(Allowance)* = Final Qty TBD During Design

Dura-Blok™ Rooftop Supports

Cooper B-Line's new line of Dura-Blok™ products gives you a versatile and long-term solution for all your roof top support needs. Designed with flexibility in mind, Dura-Bloks are ideal for such roof top support applications as pipe, HVAC, duct, conduit, cable tray, and roof walkways.

Manufactured to provide years of service in harsh, roof top environments, Dura-Bloks are made from 100% recycled rubber, require no supplemental rubber pads, and will not float or blow away. 1" gaps between blocks allow water to flow freely around longer assemblies. For added strength, the Dura-Blok support channel is through bolted on all sizes. For added visibility, a reflective strip is incorporated on both sides of each Dura-Blok.

Beyond product durability, Dura-Bloks help to dampen vibration, are not sharp or abrasive and require no roof penetration to maximize existing roof life - and roof structural and environmental integrity.

Recommended Torque (In channels)

See page 44 Channel Nuts & Hardware section

Materials & Finishes

See appropriate fitting's pages.
Alternative finishes available upon request.

Metric

Metric dimensions are shown in parentheses.
Unless noted, all metric dimensions are in millimeters.

Proposed Stanchion Repair Base Assemblies

ROOFTOP APPLICATIONS







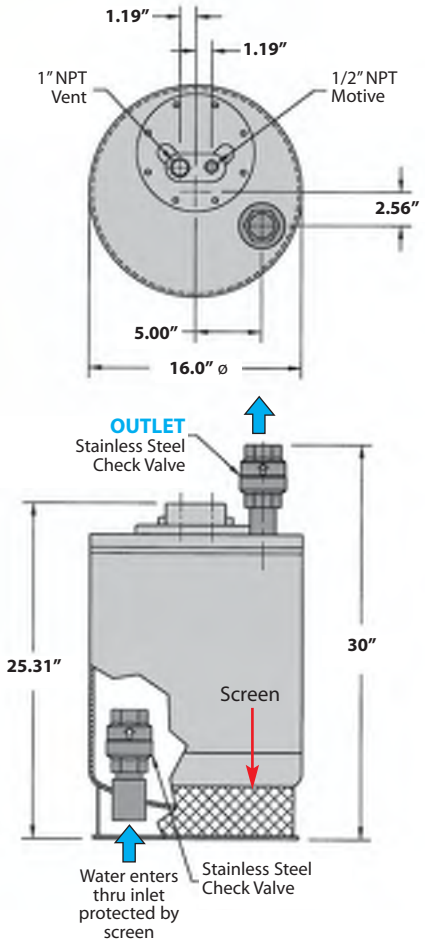


Proposed Steam Powered Sump Pumps

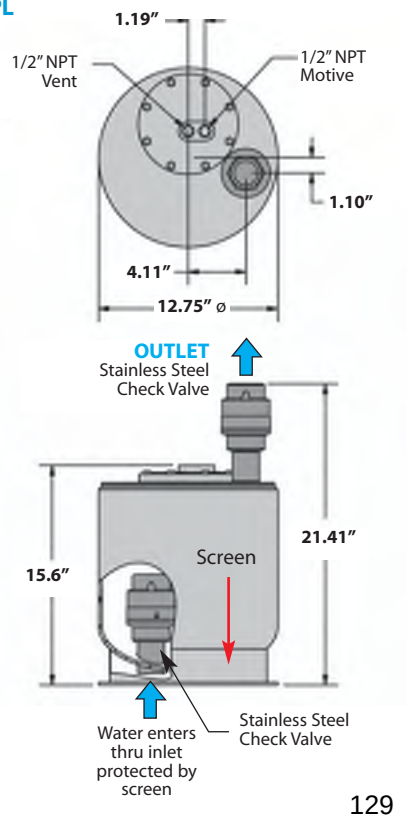
PMPSP

PMPSPL

Model	PMPSP/PMPSPL
Body	Carbon Steel
Cover	Ductile Iron
Check Valves	Stainless Steel
PMO Max. Operating Pressure	150 PSIG
TMO Max. Operating Temperature	366°F
PMA Max. Allowable Pressure	150 PSIG @ 650°F



PMPSPL



Typical Applications

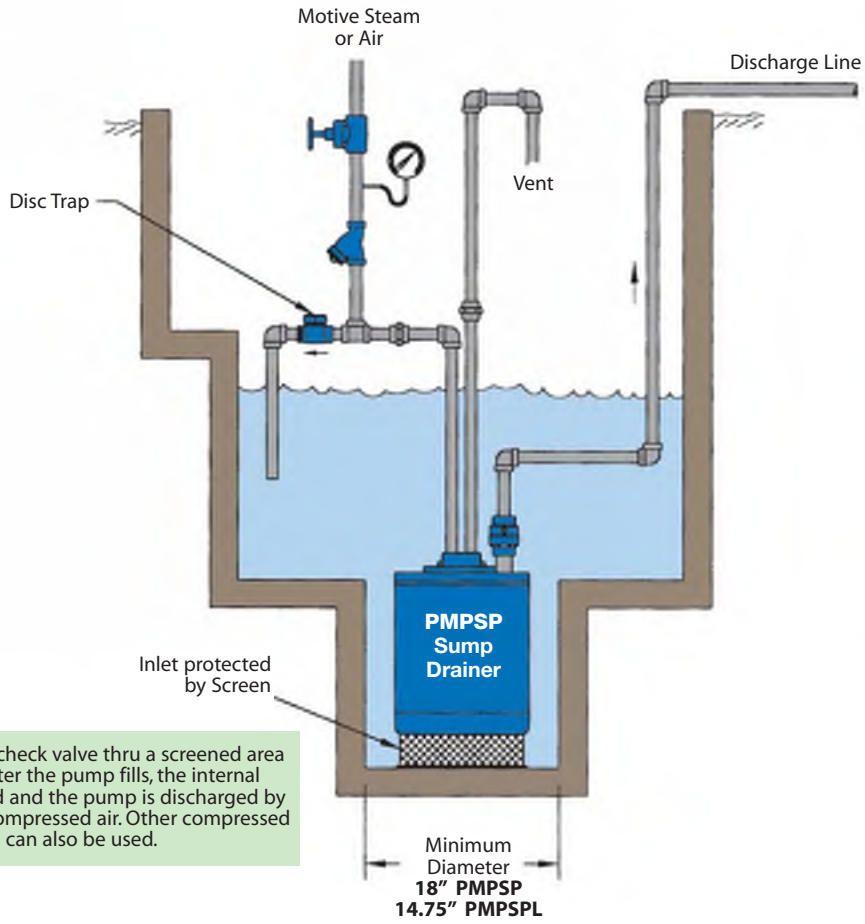
The **PMPSP** Sump Drainer uses the same internal mechanism as the standard PMP models. The piping configuration is such that the liquid is discharged vertically out the top as opposed to horizontally out the side. This allows the unit to be easily positioned inside of a sump area. Condensate or water from the sump enters the tank through a stainless steel low resistance check valve. This unit is capable of operating with a maximum motive pressure of 150 PSIG using steam, air, nitrogen or other pressurized gas as the motive force.

Features

- Equipped with our **Patented "Snap-Assure"** Mechanism which **extends the useful life of the pump**
- Mechanism incorporates **heat-treated stainless steel wear items** for ultimate corrosion resistance
- Dual compression springs made from Inconel-X-750 for high-temperature corrosive service
- Operates using steam, air, nitrogen or other pressurized gas as the motive force
- **Non-Electric** – can be used in remote locations or NEMA 4, 7, 9 and hazardous areas
- Built-in Strainer screen

Snap-Assure U.S. Patent No. 6572340

Typical PMPSP Piping Configuration



Water enters the inlet check valve thru a screened area at bottom of pump. After the pump fills, the internal mechanism is actuated and the pump is discharged by the motive steam or compressed air. Other compressed gases such as nitrogen can also be used.

Size/Connection (Outlet) NPT	Model Code	PMO PSI	Weight lbs
1 1/2"	PMPSPL	150	110
1 1/2"	PMPSP-1	150	230
2"	PMPSP-2	150	270
2"	PMPSP-3	150	290

PMPSP & PMPSPL

PUMP CAPACITIES – *Water (GPM)*

Motive Pressure (PSIG)	Total Back Pressure (PSIG)	PMPSPL 1 1/2"	PMPSP-1 1 1/2"	PMPSP-2 2"	PMPSP-3 2"
10	0	2.8	11.7	22.2	35
20	10	3.1	9.2	17.5	22
20	0	3.3	12.5	23.7	30
40	20	3.2	8.7	16.5	21
40	10	3.4	10.4	19.8	25
40	0	3.5	13.1	25	31.4
70	40	3.2	7.1	12.1	17
70	20	3.4	9.4	15	22.5
70	0	3.6	12.9	20.6	31
100	70	3.2	5.4	8.6	10.8
100	40	3.4	7.5	12	15
100	20	3.4	9.4	15	18.8
100	0	3.5	12.3	19.7	24.6
150	100	-	4.5	7.2	9
150	70	-	5.7	9.1	11.4
150	40	-	7.2	11.5	14.4
150	20	-	8.8	14	17.6
150	10	-	9.5	15.2	19
150	0	-	10.7	17.1	21.4

Proposed Supplemental Sump Pump Backup

Quality & Performance. Ask for it by name.

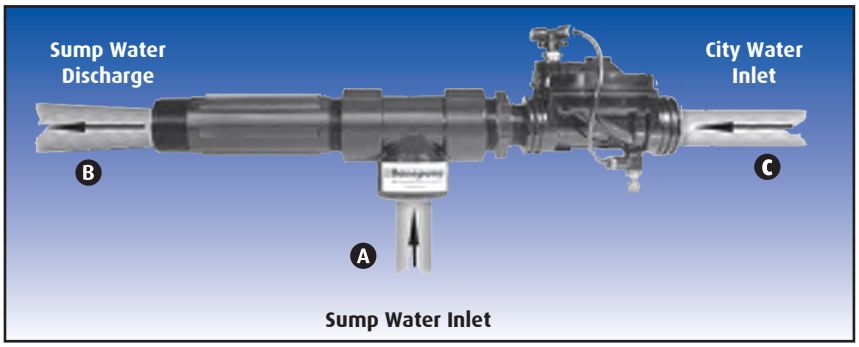
Basepump™

Water Powered Backup Sump Pump

Models: RB750 • HB1000 • CB1500

Purpose

Basepump helps keep your basement and its contents protected from flood damage caused by power outages or sump pump failure. Regardless of the reason for sump pump failure, the Basepump is on the job and ready to pump at any time, day or night, for weeks at a time if necessary. Rest assured with the Basepump.



Principle of Operation

Basepump is a siphon ejector system that creates a vacuum source using municipal city water pressure as its motive force. The Basepump is comprised of a tee configuration with three connector ports. A suction port designated "A" is in contact with ground water in the sump pit. A discharge port designated "B" which is located outside the building and has an open drain. The third port is "C" which is connected to the municipal water supply. When the Basepump is not operating, the control valve is held in the closed position, the suction pipe "A" is empty, and discharge pipe "B", being self draining, is also empty.

Product Specifications

Basepump Models

- RB750 Residential
- HB1000 High Performance
- CB1500 Commercial

Service Requirements
Municipal Water: 40 PSI Minimum
90 PSI Maximum

Inlet Water Pipe Size

- RB750 Residential 1/2" or 3/4"
- HB1000 High Performance 3/4"
- CB1500 Commercial 3/4" or 1"

Connection Sizes

- Residential Model: 1" PVC
- High Performance Model: 1 1/4" PVC
- Commercial Model: 1 1/2" PVC

Pumping Rates

- RB750: 700 - 900 GPH
- HB1000: 900 - 1,400 GPH
- CB1500: 1,400 - 2,000 GPH

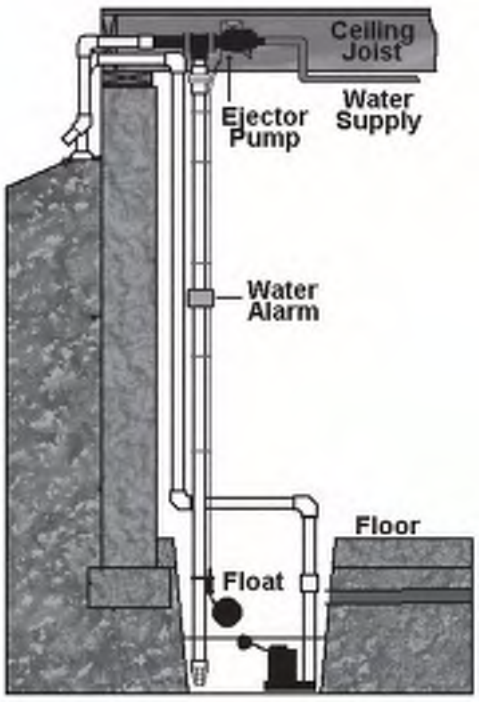
5 Year Warranty

Features/Advantages

- Constructed of heavy duty, durable, corrosion resistant materials.
- No moving parts to break and no maintenance required.
- Highest pumping rates in the industry.
- Standard float design can fit into a 12" diameter sump pit.
- No parts are in contact with sump pit water unless pump is operating.

Water Alarm

Typical Installation



Materials Included

- Ejector, float, adapters, fittings, discharge hose, transfer tube, mounting clamps, check valve, water alarm, misc. hardware, complete step-by-step instructions.

Quality & Performance. Ask for it by name.

Basepump™

Product Performance

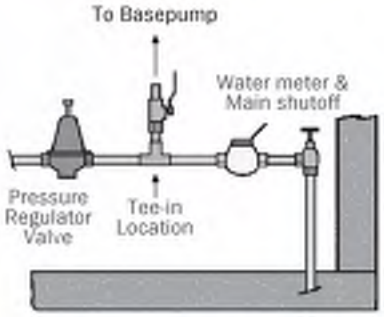
Basepump Selection		Pumping Rates (GPH)				Pipe	Water Flow Requirements
Model	Uses	40 psi	60 psi	80 psi	90 psi	Size	Gallons per minute (GPM)
RB750 Residential	Homes with normal volumes of sump water	700	750	800	900	1/2" or 3/4"	7 - GPM
HB1000 High Performance	Homes & Buildings with normal volumes of sump water	900	1,000	1,200	1,400	3/4"	10 - GPM
CB1500 Commercial	Homes & Buildings with large volumes of sump water	1,400	1,500	1,700	2,000	3/4" or 1"	15 - GPM

ALL BASEPUMP MODELS REMOVE 2 GALLONS OF SUMP WATER FOR EVERY 1 GALLON OF CITY WATER USED AT 90 PSI.

Basepump Water Supply Checklist

Pre-Installation 4 Point Checklist

Before installing, use these check boxes to verify each item below. Improper installation will result in reduced pumping capacity or pump may not operate at all.



❑ *Household Water Pressure*

1 **40 PSI minimum; 90 PSI maximum pressure at the Basepump Ejector. Compensate for pressure loss from test point to Basepump and avoid excessive piping from "tee-in" location.**

❑ *Household Water Flow*

2 **In order to install Basepump, you must be able to fill a 5 gallon bucket with water from a hose spigot within the following times for each model:**

RB750: 40 seconds
HB1000: 30 seconds
CB1500: 20 seconds

❑ *Type of Piping*

3 **Basepump requires installation with full flow copper pipe or it's equivalent (PVC, CPVC, PEX, etc. are okay if approved in your area). Do not connect to or install using galvanized iron pipe.**

❑ *Pipeline Restrictions*

4 **Basepump must be "teed-in" before any devices that restrict water flow. Examples of such devices are: stop & waste valves, Pressure Regulator Valves (PRV), water conditioners, filters, etc. (see sketch). Water meter must be minimum 3/4" standard.**

Backflow Prevention

***DCV* - Dual Check Valve: This backflow preventer is installed on the municipal cold water line that is connected to the Basepump. The dual check valve provides the installer flexibility to be able to mount the pump in many different configurations. Sizes:1/2",3/4" & 1" ASSE 1024, CSA B64-6 Dual Check Valve. ASSE 1012, CSA B64.3 State of Illinois approval #890-1140**

***AVB* - Atmospheric Vacuum Breaker: The AVB is located on the non-pressure part of the Basepump acting as a vacuum break which prevents back siphoning. The Basepump AVB must have a separate independent discharge pipe that self drains to the outdoors. ASSE 1001, CSA 64.1.1, State of Wisconsin approval # 20100389**

***RPZ* - Reduced Pressure Zone: Industry recognized backflow prevention device that meets the most stringent code requirements. The RPZ requires annual inspection and testing by a trained plumbing professional. Light weight nylon composite construction. Size: 3/4"ASSE 1013, AWWA C511, NSF61 approved**

VISIT OUR WEBSITE FOR COMPLETE DETAILS: WWW.BASEPUMP.COM

Base Products Corporation

Flood Prevention Products

265 Mayville Ave, Buffalo, NY 14217
Phone: 716-876-5206 Fax: 716-876-5211
Toll Free: 800-554-1426
www.basepump.com

Proposed Vacuum Type Sump Drainage System

Vacuum Collection For Decentralized Sewage

Newterra Offers a Clean and Highly Efficient System For Environmentally Acceptable Sewage Disposal

Newterra Value Proposition

- Low Investment Cost
- Minimal Maintenance
- Quick, simple excavation in shallow trench
- No electricity in field
- Low energy consumption
- No potential for ground pollution
- Small diameter piping

Customer Need

As an alternative to costly gravity sewer systems, or high maintenance pumping systems, Newterra offers Vacuflow, a proven, environmentally friendly vacuum collection system from Qua-vac. In particular the technology addresses:

- Replacement for failing septic systems
- Areas with high water table such as:
  - Islands, marinas
  - Coastal communities, lakefront developments
- Areas with deep trench construction constraints:
  - Bedrock
  - Small villages, ribbon developments, remote camps
  - Rolling terrain
- Environmentally sensitive or water protection areas
- New urban development in rural areas
- Retrofit of existing vacuum system components

The Vacuflow/Newterra Solution

Sewage flows by gravity to a Collection Chamber buried in the ground; gravity connection to house (up to 4), or to business, condominium or apartment. A central vacuum system applies a constant vacuum to the piping network, buried in shallow trenches in a sawtooth fashion that allows liquid to be lifted when necessary. Advantages of this system are:

- Lower investment cost due to:
  - Small pipe sizes
  - Shallow, narrow trenches
  - No manholes
  - Pipe around obstacles
  - No lift stations
  - No electricity except at vacuum station
- Sewage never goes septic, low odors
- High velocity in pipes prevents blockages and scours pipe
- No infiltration means smaller treatment system
- No leakage means no environmental damage
- Build in reserve volume at home in case of power outage
- Eliminates potential for H2S gas hazards

1.800.420.4056
newterra.com

newterra®
clean water. modular solutions. simple.™

Qua-vac Vacuflow® presented by newterra

Qua-Vac VacuFlow® System

Vacuum Collection For Decentralized Sewage

Specifications

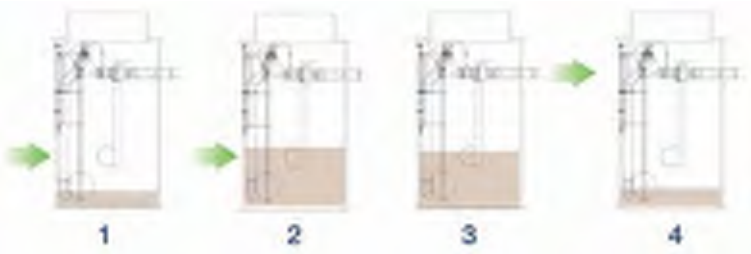
VacuFlow System Components

❶ Gravity connection to house (up to 4), or to business, condominium or apartment
❷ Collection Chamber with Interface Unit
❸ Vacuum Connection
❹ Sawtooth Vacuum Piping in shallow trench
❺ Vacuum Station*
❻ Odor control unit*
❼ Discharge to Newterra treatment system

*may be incorporated in Newterra treatment system

VacuFlow Operation

1. Water flows by gravity to chamber. Vacuflow valve closed.
2. Start level reached, valve opens.
3. Water pulled out of chamber by vacuum, air added in exact mixture to maximize transport.
4. Stop level reached, valve closes.



newterra®
clean water. modular solutions. simple.™

1.800.420.4056 | newterra.com

LITHONIA LIGHTING®

Proposed Replacement Light Fixture Type

FEATURES & SPECIFICATIONS

INTENDED USE — A general purpose and energy-efficient surface-mounted or suspended LED fixture, suitable for wet, damp and/or cold locations. For vapor-tight demanding environments where moisture or dust is a concern and where relatively low fixture mounting heights and wide fixture spacing are common. Not for use or installation in direct outdoor sunlight. Must be installed under canopy or covered ceiling. For direct sunlight installations, please refer to the FEX product family. Typical applications include industrial facilities, parking garages, retail malls, multi-purpose rooms, garden centers, and food processing. **Certain airborne contaminants can diminish the integrity of acrylic and/or polycarbonate.** **Click here for Acrylic-Polycarbonate Compatibility table for suitable use.**

Certain airborne contaminants may adversely affect the functioning of LEDs and other electronic components, depending on various factors such as concentrations of the contaminants, ventilation, and temperature at the end-user location. **Click here for a list of substances that may not be suitable for interaction with LEDs and other electronic components.**

CONSTRUCTION — One-piece 5VA fiberglass housing with integral perimeter channel utilizing continuous poured-in-place NEMA 4X gasket. Approved for through wiring. Captive polymeric latches are standard. Stainless steel latches (#316) available as an option for food processing or more demanding applications.

Power connection is easily accomplished through pre-drilled holes.

OPTICS — Injection molded, acrylic lens (.080" thick) provides high impact-resistance comparable to 100% DR. A UV stabilized polycarbonate diffuser is available (.080" thick) in clear or frosted for additional impact strength where vandal protection is desired.

Expected service life of 60,000 hours at 80% lumen maintenance (L80); predicted life of more than 100,000 hours.

ELECTRICAL — Utilizes high-efficiency LEDs mounted to core circuit boards. High-efficiency drivers operate 120-277 (MVOLT) and 347-480 (HVOLT) offered with 0-10 volt dimming, dims to 10%. Standard Luminaire Surge Protection Level: 6kV/3kA Surge Rated per ANSI C82.77-5-2015.

INSTALLATION — A pair of stainless steel surface mount brackets (SMB) are included (unless another mounting option is chosen) allowing for surface (ceiling) or suspension mount applications using included bail with aircraft cable or chain. Optional pair of dual pendant mount brackets (DPMB) are available for surface (ceiling) or suspension mount applications using either 3/8" threaded rod or included bail with aircraft cable or chain. Optional pair of angle mounting brackets (ANGBKT) for wall mount applications.

LISTINGS — CSA Certified to UL and C-UL Standards. Suitable for wet location. IP65,IP66, IP67 rated. NSF Splash Zone 2 and Non-Food Zone rated. NEMA 4X rated. Sensors maintain IP65 and IP66 only. See chart on page 5 for Ambient Temperatures.

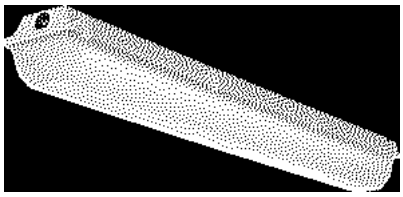
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

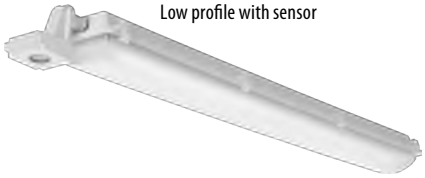
Low-Profile Enclosed and Gasketed Industrial



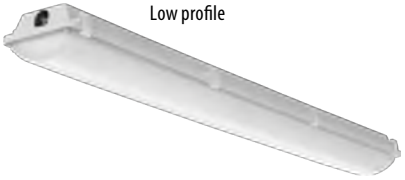
FEM LED

SURFACE/ SUSPENDED/WALL MOUNT

Low profile with sensor



Low profile



Buy American

Stock configurations are offered for shorter lead times:

Standard Part Number	Stock Part Number
FEM L48 4000LM LPAFL MD MVOLT GZ10 40K 80CRI	**FEM L48 4L MVOLT**
FEM L48 4000LM LPAFL MD MVOLT GZ10 50K 80CRI	**FEM L48 4L MVOLT 5K**

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

A+ Capable options indicated by this color background.

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: FEM L48 4000LM IMAFL WD MVOLT GZ10 40K 80CRI

Series	Length	Nominal Lumens	Diffuser	Distribution	Voltage	Driver	Color temperature	CRI
FEM	L24 24" ‡	2000LM 2,000 lumens 3000LM 3,000 lumens 4000LM 4,000 lumens 6000LM 6,000 lumens	IMAFL Acrylic, lineal ribbed frosted lens IMACD Acrylic, clear deep lens IMAFD Acrylic, deep frosted lens LPAFL Acrylic, low profile frosted lens LPACL Acrylic, low profile clear lens LPPCL Polycarbonate, low profile clear lens LPPFL Polycarbonate, low profile frosted lens	MD Medium WD Wide PGD Parking garage	MVOLT 120-277V HVOLT 347-480V ‡ 120 120V 277 277V 347 347V 480 480V	GZ10 0 - 10V dimming	30K 3000K 35K 3500K 40K 4000K 50K 5000K	80CRI 80 CRI 90CRI 90 CRI
	L48 48" ‡	3000LM 3,000 lumens 4000LM 4,000 lumens 6000LM 6,000 lumens 8000LM 8,000 lumens 10000LM 10,000 lumens 12000LM 12,000 lumens						
	L96 96" ‡	9000LM 9,000 lumens 12000LM 12,000 lumens 15000LM 15,000 lumens 18000LM 18,000 lumens 20000LM 20,000 lumens 24000LM 24,000 lumens						

Options

Emergency:

E10WMCP	EM Self-diagnostics battery pack, MVOLT, 10W, Constant Power Certified in the California Title 20 Modernized Appliance Efficiency Database (MAEDBS) ‡
BE6WCP	Cold Weather EM battery pack, 120/277V, 6W, Constant Power Certified in the California Title 20 Modernized Appliance Efficiency Database (MAEDBS) ‡
BGTD	Generator transfer device

Other Options:

ANGBKT	Angle bracket shipped with fixture ‡
BAA	Buy America(n) Act Compliant
DPMB	Dual pendant mounting bracket ‡
SPD	Surge protection device, additional 10kV/6kA
STSL	Stainless steel latches
TRS	Tamper Resistant Torx® T10 screws
WLF	Wet location fitting (two outboard, top (L24 - 20 inches off-center, L48 - 48 inches off-center, L96 - 95.7 inches off-center) ‡
WLFEND	Wet location fitting (one end) ‡
WLFEND2	Wet location fitting (both ends) ‡
WLFPMP	Wet location pendant monopoint ‡

Cord Sets: ‡

CPSB16YWLBH	Brad Harrsion Mini-Change® cordset with straight blade plug, 16 gauge, 3 conductors, 6ft, yellow ‡
CPSB16YWL12FTBH	Brad Harrsion Mini-Change® cordset with straight blade plug, 16 gauge, 3 conductors, 12ft, yellow ‡
CRSB16YWLBH	Brad Harrison Mini-Change® receptacle ‡
CNP16WWL	Cord only (no plug), 16 gauge, 3 conductors, white, 6ft, wet location ‡
CNP16WWL12FT	Cord only (no plug), 16 gauge, 3 conductors, white, 6ft, wet location ‡
CNP164CWWL	Cord only (no plug), 16 gauge, 4 conductors, white, 6ft, wet location (for use when unswitched circuit is required for battery pack) ‡

Individual Controls: ‡

SBOR10	360° Low mount sensor, (8-15' mounting heights), outdoor PIR, ON/OFF occupancy (LINK) (formerly MSI10NWL)
SBOR10 HL 3V	360° Low mount sensor, (8-15' mounting heights), outdoor PIR, occupancy controlled dimming (bi-level) (LINK) (formerly MSI102L3VWL)
SBOR10 P	360° Low mount sensor, (8-15' mounting heights), outdoor PIR, ON/OFF photocell (LINK) (formerly MSI10NWL DSCNWL)

nLight Wireless: ‡

NLTAIR2 RSBOR10	nLight® Air Generation 2 enabled, 360° low mount sensor, (8-15' heights) (LINK)
NLTAIR2 RIO	nLight® Air Generation 2 enabled, fixture embedded network interface, 0-10V dimming output (LINK)

NOTE: ‡ indicates option chosen has ordering restrictions. Please reference ordering restrictions chart, page 3. Options are sorted alphanumerically.

Accessories: *Order as separate catalog number.*

MHCH 36	3 foot (36 inches) jack chain (pair)
MHHK120	10 foot (120 inches) single leg air craft cable (ships as pair)
MHHK120SS	10 foot (120 inches) single leg air craft cable, stainless steel (ships as pair)
RK1 T10BIT W/PIN U	Hex-base driver bit, Torx TX10, for tamper resistant screws with center reject pin
FEMDPMB	Dual pendant mounting bracket (ships as a pair) ‡
FEMANGBKT	Angle bracket (ships as pair) ‡
FEMSMB	Surface mount bracket (ships as pair) ‡

See Accessories and ordering restrictions on next page.

‡ Option Value Ordering Restrictions	
Option value	**Restriction**
ANGBKT, FEMANGBKT	For wall mount applications. If mounted in an upward orientation, fixture will be damp location listed only.
BE6WCP	Utilizes Bodine BSL36 Cold-Pak emergency driver. Not available with L24 length. Order with CNP164CWWL when unswitched hot is required for battery. Not available with 347V,480V,HVOLT.
CNP16WWL, CNP16WWL12FT	Not available with BE6WCP or E10WMCP.
CNP164CWWL	Available with BE6WCP or E10WMCP only. **Not NEMA4X rated**.
Cord Sets	**Not NEMA4X rated**.
CPSB16YWLBH, CPSB16YWL12FTBH	Not available with BE6WCP or E10WMCP.
CRSB16YWLBH	Not available with BE6WCP or E10WMCP.
E10WMCP	Utilizes Power Sentry, PS1055MCP battery pack. Order with CNP164CWWL when unswitched hot is required for battery. Not available with 347V,480V,HVOLT.
DPMB, FEMDPMB	For surface (ceiling) or suspension mount applications using either 3/8" threaded rod or included bail with aircraft cable or chain.
FEMSMB	Ships standard with fixture (unless another mounting option is chosen). For surface (ceiling) or suspension mount applications using included bail with aircraft cable or chain.
HVOLT	When ordered with L24, available with 6000LM only. When ordered with L48, not available with 3000LM or 4000LM.
Individual Controls	**Not NEMA4X rated. IP65 and IP66 rated.**
L24	Not available with BE6WCP.
L48	Not available with WLFPMP.
L96	Not available with WLFPMP
nLight® Wireless	**Not NEMA4X rated. IP65 and IP66 rated.**
WLF	If cord is ordered, cord will exit from the end of the fixture. **Not NEMA4X rated**.
WLFEND	If cord is ordered, cord will exit from the end of the fixture. **Not NEMA4X rated**. Available with cord or sensor option. Choose only one.
WLFEND2	Not available with sensor or cord options. **Not NEMA4X rated**.
WLFPMP	Available only with L24. **Not NEMA4X rated.**

MOUNTING OPTIONS

DPMB Option or FEMDPMB Accessory

Material: 304 Stainless Steel

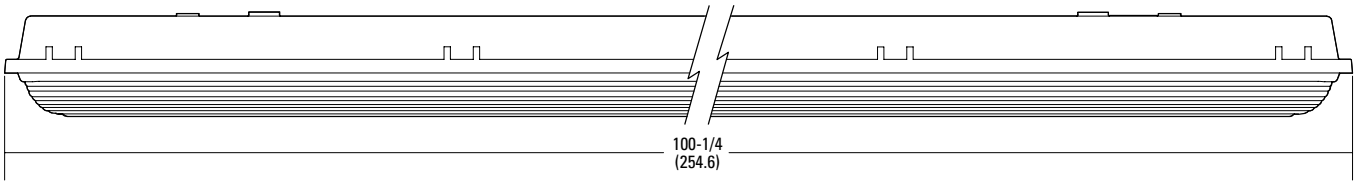
pictured less bail wire

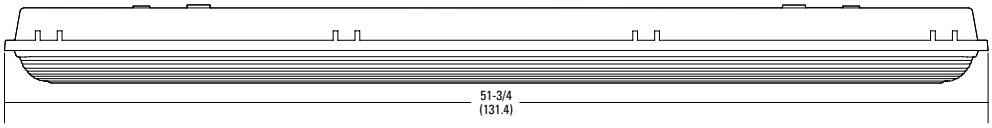
CS88L12/CS88R options

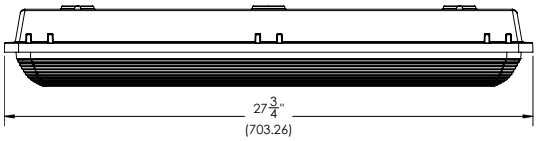
DIMENSIONS

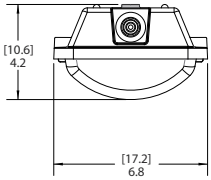
Specifications subject to change without notice.
All dimensions are inches (centimeters) unless otherwise indicated.

Weight (may vary with options or accessories)
FEM L48: 11.9 lbs (5.397kg)
FEM L96: 24.3 lbs (11.022kg)

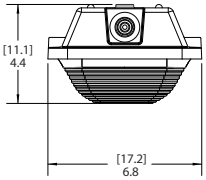




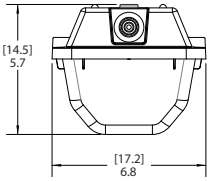




Diffuser Type:
LPAFL
LPACL
LPPFL
LPPCL



Diffuser Type:
IMAFL



Diffuser Type:
IMAFD
IMACD

PHOTOMETRICS

See www.lithonia.com for photometry reports.

Contender™ Series Factory Sealed Front Operated Tumbler Switches

Switch Covers and Sealing Chamber/Switch Assemblies. Explosionproof, Dust-Ignitionproof

Malleable Iron Body and Cover. Furnished with Internal Ground Screw.

NE/CEC:
Class I, Division 1, Groups C, D
Class I, Division 2, Group B◆, C, D
Class II, Division 1 and 2, Groups E, F, G
Class III
NEMA 3, 7CD, 9EFG

Proposed Heavy Duty Tunnel Light Switch

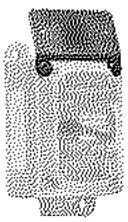
Factory Sealed Front Cover/Chamber/Switch Assembly

	Switch Type	Catalog Number ① 20 Amp 120–277 Vac ②	Catalog Number ① 30 Amp 120–277 Vac ③
 Cover/Switch Assembly	1-Pole	**EDSF21Q ◆**	**EDSF31Q**
	2-Pole	**EDSF22Q ◆**	**EDSF32Q**
	3-Way	**EDSF23WQ ◆**	**EDSF33WQ**
	4-Way	**EDSF24WQ**	—

	Switch Type	Front Cover Only	Catalog Number EFSFR Switch ④	Factory Sealed LAB Switch
 Front Cover Only	1-Pole	**EDSF12**	**EFSFR1Q**	**LAB21**
	2-Pole	**EDSF12**	**EFSFR2Q**	**LAB22**
	3-Way	**EDSF34W**	**EFSFR3WQ**	**LAB23W**
 EFSFR Switch  Factory Sealed Switch Only	4-Way	**EDSF34W**	**EFSFR4WQ**	—

Nameplate Mounting Bracket

Mount bracket between cover screws and cover. Do not mount bracket between ground joint flame path between cover and backbox.

	Description	Catalog Number
	Bracket with blank silver/black nameplate for Contender series	**NPBRKT-CONT**
	To order bracket with control station, add suffix –**NPBRKT** to end of catalog number.	
	To order engraved nameplates, add desired markings after catalog number. Maximum of 2 lines with 12 characters (including spaces) per line.	

① *With sealing chamber.*
② *20 Amp Switches 1 HP at 120 Vac and 2 HP at 240 Vac.*
③ *30 Amp Switches 2 HP at 120 Vac or 240 Vac.*
④ *Requires the use of Code recognized sealing method as part of installation.*
◆ *Contains Factory Sealed Switch; no sealing chamber. Suitable for Class I, Division 2, Group B.*

LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE — Ideal for applications where electrical power cannot be provided.

CONSTRUCTION — Tritium filled gas tubes require no electrical input.

Universal directional indicator knockouts and mounting (canopy included).

Letters 6" high with 3/4" stroke, with 100' viewing distance rating, based upon UL924 standard.

Completely-sealed lamp compartment.

Polycarbonate or aluminum frame with aluminum faceplate.

Explosion proof/hazardous location.

Suitable for damp locations.

Ideal for extreme temperatures -20°F – 150°F (-28°C – 65°C).

Tamperproof mounting hardware.

Optional vandal shield suitable for low-level applications.

OPTICS — Tritium filled gas tubes require no electrical input and are rated for 10 or 20-year life.

No energy consumption.

Self-Luminous signs are required to meet a minimum luminance of 0.06 foot lamberts per square meter. The initial brightness measurements are: 10 Year - 0.13 foot lamberts and 20 Year - 0.20 foot lamberts.

The light output of a tritium sign reduces over time due to decay.

The level of tritium in the exit is 7.5 Curies in a 10-year sign and 11.5 Curies in a 20-year sign (for double face the unit will have 2x the amount).

INSTALLATION — Universal (top, end or back) mounting.

Mounting hardware included.

LISTINGS — UL Listed. UL Listed for low-level applications with VR option. Meets UL 924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards, and State of Minnesota energy-efficiency legislation requiring less than 20W consumption.

AA option suitable for use in Class I, Div. I, Groups C & D.

WARRANTY — 3-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

All life safety equipment, including emergency lighting for path of egress must be maintained, serviced, and tested in accordance with all National Fire Protection Association (NFPA) and local codes. Failure to perform the required maintenance, service, or testing could jeopardize the safety of occupants and will void all warranties.

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

Self-Luminous Exits

D

TRITIUM

Proposed Tunnel Exit Signs

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: D S W 1 R

D	S					
Family	**Face type**	**Housing color**	**Number of faces**	**Faceplate color**	**Luminous life**	**Options**
D Self-luminous	S Stencil	(blank) Black W White AL Aluminum[6]	1 Single 2 Double	R Red G Green	(blank) 10 years 20 20 years	VR Vandal shield[1,2,5,7] AA Aluminum anodized frame[3] IF Institutional frame[5,7]

Accessories:[4] *Order as separate catalog number.*	
ELA WGEXT	Top-mount wireguard
ELA WG1	Back-mount wireguard

Notes

1 Only available in single face.

2 Only available with aluminum housing color.

3 Available in all housing colors.

4 See spec sheet ELA-WG.

5 IF option suitable for vandal resistant application; no VR shield required.

6 Aluminum anodized frame is standard with AL housing color.

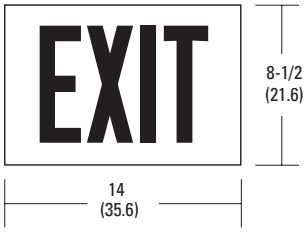
7 Aluminum frame is standard with VR or IF option.

MOUNTING

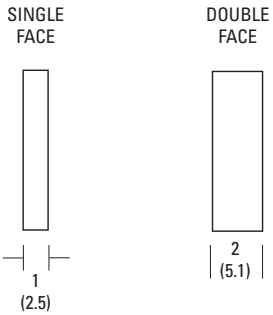
All dimensions are inches (centimeters) unless otherwise indicated.

Shipping weight: Plastic Frame (single face) – 1.5 lbs (0.7 kgs)
Plastic Frame (double face) – 3 lbs (1.4 kgs)
AA option (single face) – 4 lbs (1.8 kgs)
AA option (double face) – 8 lbs (3.6 kgs)
IF option (single face) – 7 lbs (3.2 kgs)
IF option (double face) – 8 lbs (3.6 kgs)
VR option – 3.5 lbs (1.6 kgs)

PLASTIC FRAME



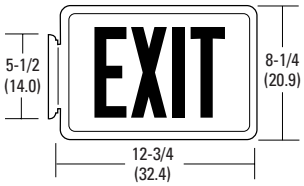
TOP MOUNTING



OPTION AA (Aluminum Anodized)

(Canopy provided with double face only)

END MOUNTING



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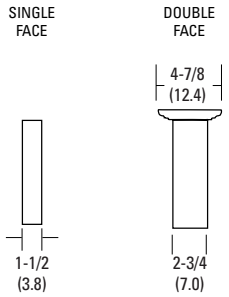
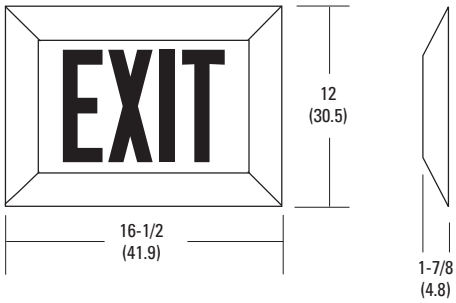
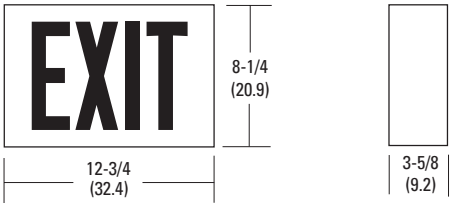


OPTION IF (Institutional Frame)

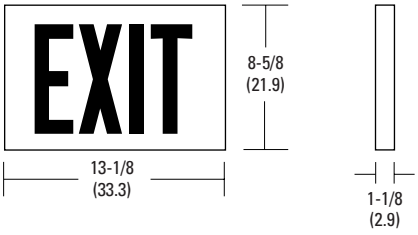
SINGLE FACE



DOUBLE FACE



OPTION VR (Vandal Shield)



SUMMARY BY 100FT SECTIONS

TUNNEL ABBREVIATION	STATION NUMBER	AVG (1-4 scale)
W	0-100	3.86
W	101-200	4.00
W	201-300	3.85
W	301-400	2.93
W	401-500	2.36
W	501-600	2.15
W	601-700	2.00
W	701-800	2.64
W	801-900	2.93
W	901-1000	3.73
W	1001-1100	2.36
W	1101-1200	2.80
W	1201-1300	3.58
W	1301-1400	3.5
W	1401-1500	2.92
W	1501-1600	2.82
W	1601-1700	3.67
W	1701-1800	3.90
W	1801-1900	3.70
W	1901-2000	3.10
W	2001-2100	3.80
W	2101-2200	3.67
W	2201-2300	2.17
W	2301-2400	2.00
W	2401-2500	2.13
W	2501-2557	2.58
E	0-100	2.27
E	101-200	2.85
E	201-300	2.65
E	301-400	3.27
E	401-500	2.77
E	501-600	2.55
E	601-700	2.17
E	701-800	2.73
E	801-900	2.52
E	901-1000	2.00
E	1001-1100	2.36
E	1101-1200	3.00
E	1201-1300	2.44
E	1301-1400	2.38
E	1401-1500	2.42
E	1501-1600	2.27

APPROX. TOTAL STANCHIONS	1430
STANCHIONS IN RED	415
STANCHIONS IN YELLOW NEEDING REPAIR	108

Tunnel Support Stand Grading Summary by 100ft Sections of Tunnel: "Red-Yellow-Green" Stop-Light Ratings

E	1601-1700	2.38
E	1701-1800	2.55
E	1801-1900	2.80
E	1901-2000	3.25
E	2001-2100	2.62
E	2101-2200	2.24
E	2201-2300	2.22
E	2301-2400	2.38
E	2401-2500	2.38
E	2501-2600	2.54
E	2601-2700	2.57
E	2701-2800	3.00
E	2801-2900	2.00
E	2901-2949	2.00
KING	0-100	3.10
KING	101-200	2.54
KING	201-300	2.62
KING	301-400	2.71
KING	401-500	3.60
KING	501-600	3.82
KING	601-700	3.88
KING	701-800	4.00
KING	801-900	3.81
KING	901-1000	3.80
KING	1001-1100	3.93
KING	1101-1150	3.60
SNR	0-100	4.00
SNR	101-179	4.00
SHO	0-100	2.71
SHO	101-150	2.25
HAR	0-100	2.85
HAR	101-200	3.62
HAR	201-266	4.00
SUT	0-100	3.00
SUT	101-200	3.45
SUT	201-300	3.30
SUT	301-400	3.92
SUT	401-500	3.55
SUT	501-600	3.54
SUT	601-663	4.00
JFK	0-100	2.00
JFK	101-200	1.93
JFK	201-300	2.00
JFK	301-402	2.91
ART	0-100	3.17
ART	101-200	3.41
ART	201-300	3.61

ART	301-400	3.74
ART	401-500	2.33
ART	501-600	2.29
ART	601-700	2.14
ART	701-800	2.35
ART	800-872	3.50
CEB	0-100	2.80
CEB	101-200	3.43
CEB	201-235	4.00
ARC	0-100	3.63
ARC	101-200	3.43
ARC	201-300	3.43
ARC	301-400	4.00
ARC	401-500	3.45
ARC	501-533	3.00
HPE	0-100	3.56
HPE	101-200	3.53
HPE	201-300	3.10
HPE	301-400	3.06
HPE	401-500	3.18
HPE	501-600	3.15
HPE	601-700	3.00
HPE	701-800	2.67
HPE	801-900	2.63
HPE	901-1000	3.91
HPE	1001-1050	4.00
PEC	0-50	4.00
PE1	0-63	3.50
PE2	0-95	3.91
SCI	0-100	3.00
SCI	101-200	4.00
SCI	201-323	4.00

EWU Construction & Planning
1115 Cedar Street
101 Rozell Plant,
Cheney, WA 99004

Existing Conditions

Location: JFK Ramp
Date: August 2025

Spalling concrete, underside of JFK ramp

Spalling concrete, underside of JFK ramp

Damaged column at JFK ramp

Damaged column at JFK ramp

Carbon Capture

Interagency Agreement with

Eastern Washington University

through

Energy Division, Energy Programs in Communities

Contract Number:
24-92201-055

For

Eastern Washington University Carbon Capture Demonstration Project

Dated: Friday, February 28, 2025

Washington State Department of Commerce

Table of Contents

Washington State Department of Commerce

Contract Number: 24-92201-055

Face Sheet

Energy Division, Energy Programs in Communities Unit
Research, Development, & Demonstration (RDD) Program

1. Contractor Eastern Washington University 526 5th St, 210 Showalter, Cheney, WA 99004-1619		**2. Contractor Doing Business As (as applicable)**	
3. Contractor Representative Erik Budsberg Director of Sustainability (509) 359-6476 ebudsberg@ewu.edu		**4. COMMERCE Representative** Brianna Gomez-Catalan Program Manager 360-725-2802 Brianna.gomez-catalan@commerce.wa.gov PO Box 42525 1011 Plum St. NE Olympia, WA 98504-2525	
5. Contract Amount $1,913,723	**6. Funding Source** **Federal:** ☐ **State:** ☒ **Other:** ☐ **N/A:** ☐	**7. Start Date** 09/01/2024	**8. End Date** 06/30/2027
9. Federal Funds (as applicable) N/A	**Federal Agency:** N/A	**ALN** N/A	
10. Tax ID # 91-6000624	**11. SWV #** SWV000026-07	**12. UBI #** 321-000-780	**13. UEI #** N/A

14. Contract Purpose

To demonstrate how a small-scale carbon capture technology, using a new and novel adsorbent, can significantly reduce the GHG emissions from the EWU central plant. The project will implement a modular pilot carbon capture system utilizing a novel metal organic framework (MOF) adsorbent, which will demonstrate a reduction in CO2 emissions at a lower energy intensity.

COMMERCE, defined as the Department of Commerce, and the Contractor, as defined above, acknowledge and accept the terms of this Contract and Attachments and have executed this Contract on the date below and warrant they are authorized to bind their respective agencies. The rights and obligations of both parties to this Contract are governed by this Contract and the following documents incorporated by reference: Contractor Terms and Conditions including Attachment "A" – Scope of Work, Attachment "B" – Budget, Attachment "C" –Reporting, Attachment "D" - Proviso

FOR CONTRACTOR	**FOR COMMERCE**
Signed by: Annika Schaarsch 3D0C464A3E5E4FB... Associate Vice President for Civil Rights, Compliance, and Business Services	Signed by: Jennifer Grove 7B8CBF83E1F34AE... Assistant Director, Energy Division
3/12/2025 | 11:12 AM PDT Date	3/12/2025 | 5:05 PM PDT Date
	APPROVED AS TO FORM ONLY **BY ASSISTANT ATTORNEY GENERAL** **APPROVAL ON FILE**

Washington State Department of Commerce

DECLARATIONS

The Washington State Department of Commerce (Commerce) has been appropriated funds by the Washington State Legislature to provide grants to promote Washington's commitment to equitable, clean energy development.

CLIENT INFORMATION	
Legal Name:	Eastern Washington University
Agreement Number:	24-92201-055
Award Year:	2024
State Wide Vendor Number:	SWV000026-07

PROJECT INFORMATION	
Project Title:	Eastern Washington University Carbon Capture Demonstration Project
Project Address:	101 Rozell
Project City:	Cheney
Project State:	WA
Project Zip Code:	99004-2464

GRANT INFORMATION	
Grant Amount:	$1,913,723
Non-State Match (1:X)	1:1
Type of Match Accepted:	Private – EWU
Earliest Date for Reimbursement:	10/01/2024
Time of Performance:	09/01/2024 – 06/30/2027

Washington State Department of Commerce

Program Specific Terms and Conditions

As identified herein, notwithstanding General & Specific Terms and Conditions SECTIONs, the following Program Specific Terms and Conditions take precedence over any similarly referenced Special or General Terms and Conditions:

1. BILLING AND COMPENSATION FOR PERFORMANCE BASED CONTRACT (Replaces Special Terms and Conditions #4 Billing Procedures and Payment)

COMMERCE will pay Contractor not more often than monthly upon acceptance of services provided and receipt of properly completed invoices for completed milestones, which shall be submitted to the Representative for COMMERCE.

The Contractor shall provide the Representative of COMMERCE a signed electronic Invoice A19 form that includes the contract number referenced on the declarations page.

The invoices shall describe and document, to COMMERCE's satisfaction, a description of the work performed and the milestone number(s) achieved.

The Contractor is required to maintain documentation to support invoiced costs and cost share obligations. The Contractor shall make these documents available to COMMERCE if requested.

COMMERCE will pay Contractor the amounts set forth in Attachment B upon full completion of each milestone. Upon full completion of each Milestone, Contractor will provide an invoice and any required supporting documentation to the Representative of COMMERCE. Except as may be agreed by COMMERCE in its discretion, COMMERCE shall only be obligated to make payments upon demonstration of completion of all Deliverables within a given Milestone.

However, it is acknowledged that in the event one or two Deliverables of a Milestone is unduly delayed (more than 3 months) due to circumstances outside Contractor's control, COMMERCE may, in its sole discretion, reasonably negotiate with Contractor regarding paying for those Deliverables of such Milestones that are completed.

Payment shall be considered timely if made by COMMERCE within thirty (30) calendar days after receipt of properly completed invoices. Payment shall be sent to the address designated by the Contractor.

COMMERCE may, in its sole discretion, terminate the Contract or withhold payments claimed by the Contractor for services rendered if the Contractor fails to satisfactorily comply with any term or condition of this Contract.

No payments in advance or in anticipation of services or supplies to be provided under this Agreement shall be made by COMMERCE.

Invoices and End of Fiscal Year
Invoices are due on the 20th of the month following the provision of services.

Final invoices for a state fiscal year may be due sooner than the 20th and Commerce will provide notification of the end of fiscal year due date.

The contractor must invoice for all expenses from the beginning of the contract through June 30, regardless of the contract start and end date.

Duplication of Billed Costs

The Contractor shall not bill COMMERCE for services performed under this Agreement, and COMMERCE shall not pay the Contractor, if the Contractor is entitled to payment or has been or will be paid by any other source, including grants, for that service.

Disallowed Costs
The Contractor is responsible for any audit exceptions or disallowed costs incurred by its own organization or that of its subcontractors.

2. SUBCONTRACTING (Replaces General Terms and Conditions #15 Subcontracting)

The Contractor may only subcontract work contemplated under this Contract if it provides written notification to COMMERCE of any subcontractors who will be performing work under this Grant Agreement. The written notice must provide the names and address of the subcontractor with a brief description of which tasks within the Contractor Scope of Work (Attachment A) that will be undertaken by the subcontractor(s).

The Contractor shall maintain written procedures related to subcontracting, as well as copies of all subcontracts and records related to subcontracts. For cause, COMMERCE in writing may: (a) require the Contractor to amend its subcontracting procedures as they relate to this Contract; (b) prohibit the Contractor from subcontracting with a particular person or entity; or (c) require the Contractor to rescind or amend a subcontract.

Every subcontract shall bind the Subcontractor to follow all applicable terms of this Contract. The Contractor is responsible to COMMERCE if the Subcontractor fails to comply with any applicable term or condition of this Contract. The Contractor shall appropriately monitor the activities of the Subcontractor to assure fiscal conditions of this Contract.

In no event shall the existence of a subcontract operate to release or reduce the liability of the Contractor to COMMERCE for any breach in the performance of the Contractor's duties.
Every subcontract shall include a term that COMMERCE and the State of Washington are not liable for claims or damages arising from a Subcontractor's performance of the subcontract.

All reference to the Contractor under this clause shall also include Contractor's employees, agents or subcontractors.

3. PREVAILING WAGE LAW

The contractor certifies that all contractors and subcontractors performing work on the Project shall comply with state Prevailing Wages on Public Works, Chapter 39.12 RCW, as applicable to the Project funded by this Agreement, including but not limited to the filing of the "Statement of Intent to Pay Prevailing Wages" and "Affidavit of Wages Paid" as required by RCW 39.12.040. The contractor shall maintain records sufficient to evidence compliance with Chapter 39.12 RCW, and shall make such records available for COMMERCE's review upon request

4. HISTORICAL OR CULTURAL ARTIFACTS

Prior to approval and disbursement of any funds awarded under this Contract, Contractor shall complete the requirements of Governor's Executive Order 21-02, where applicable, or Contractor shall complete a review under Section 106 of the National Historic Preservation Act, if applicable.

Contractor agrees that the Contractor is legally and financially responsible for compliance with all laws, regulations, and agreements related to the preservation of historical or cultural resources and

agrees to hold harmless COMMERCE and the state of Washington in relation to any claim related to such historical or cultural resources discovered, disturbed, or damaged as a result of the project funded by this Contract.

In addition to the requirements set forth in this Contract, Contractor shall, in accordance with Governor's Executive Order 21-02 coordinate with Commerce and the Washington State Department of Archaeology and Historic Preservation ("DAHP"), including any recommended consultation with any affected tribe(s), during Project design and prior to construction to determine the existence of any tribal cultural resources affected by Project. Contractor agrees to avoid, minimize, or mitigate impacts to the cultural resource as a continuing prerequisite to receipt of funds under this Contract.

The Contractor agrees that, unless the Contractor is proceeding under an approved historical and cultural monitoring plan or other memorandum of agreement, if historical or cultural artifacts are discovered during construction, the Contractor shall immediately stop construction and notify the local historical preservation officer and the state's historical preservation officer at DAHP, and the Commerce Representative identified on the Face Sheet. If human remains are uncovered, the Contractor shall report the presence and location of the remains to the coroner and local enforcement immediately, then contact DAHP and the concerned tribe's cultural staff or committee.

The Contractor shall require this provision to be contained in all subcontracts for work or services related to the Scope of Work attached hereto.

In addition to the requirements set forth in this Contract, Contractor agrees to comply with RCW 27.44 regarding Indian Graves and Records; RCW 27.53 regarding Archaeological Sites and Resources; RCW 68.60 regarding Abandoned and Historic Cemeteries and Historic Graves; and WAC 25-48 regarding Archaeological Excavation and Removal Permit.

Completion of the requirements of Section 106 of the National Historic Preservation Act shall substitute for completion of Governor's Executive Order 21-02.

In the event that the Contractor finds it necessary to amend the Scope of Work the Contractor may be required to re-comply with Governor's Executive Order 21-02 or Section 106 of the National Historic Preservation Act

5. ACKNOWLEDGMENT OF CLIMATE COMMITMENT ACT FUNDING

If this Agreement is funded in whole or in part by the Climate Commitment Act, Grantee agrees that any website, announcement, press release, and/or publication (written, visual, or sound) used for media-related activities, publicity, and public outreach issued by or on behalf of Grantee which reference programs or projects funded in whole or in part with Washington's Climate Commitment Act (CCA) funds under this Grant, shall contain the following statement:

"The [PROGRAM NAME / GRANT / ETC.] is supported with funding from Washington's Climate Commitment Act. The CCA supports Washington's climate action efforts by putting cap-and-invest dollars to work reducing climate pollution, creating jobs, and improving public health. Information about the CCA is available at www.climate.wa.gov."
The Grantee agrees to ensure coordinated Climate Commitment Act branding on work completed by or on behalf of the Grantee. The CCA logo must be used in the following circumstances, consistent with the branding guidelines posted at CCA brand toolkit, including:

A. Any project related website or webpage that includes logos from other funding partners;
B. Any publication materials that include logos from other funding partners;
C. Any on-site signage including pre-during Construction signage and permanent signage at completed project sites; and
D. Any equipment purchased with CCA funding through a generally visible decal.

Washington State Department of Commerce

Special Terms and Conditions

1. AUTHORITY

COMMERCE and Contractor enter into this Contract pursuant to the authority granted by Chapter 39.34 RCW.

2. CONTRACT MANAGEMENT

The Representative for each of the parties shall be responsible for and shall be the contact person for all communications and billings regarding the performance of this Contract.

The Representative for COMMERCE and their contact information are identified on the Face Sheet of this Contract.

The Representative for the Contractor and their contact information are identified on the Face Sheet of this Contract.

3. COMPENSATION

COMMERCE shall pay an amount not to exceed $1,913,723, for the performance of all things necessary for or incidental to the performance of work under this Contract as set forth in the Scope of Work.

EXPENSES

Contractor shall receive reimbursement for travel and other expenses as identified below or as authorized in advance by COMMERCE as reimbursable. The maximum amount to be paid to the Contractor for authorized expenses shall not exceed $0, which amount is included in the Contract total above.

Such expenses may include airfare (economy or coach class only), other transportation expenses, and lodging and subsistence necessary during periods of required travel. Contractor shall receive compensation for travel expenses at current state travel reimbursement rates.

4. BILLING PROCEDURES AND PAYMENT (Replaced by Program Specific Terms and Conditions #1 Billing and Compensation for Performance Based Contract)

~~COMMERCE will pay Contractor upon acceptance of services provided and receipt of properly completed invoices, which shall be submitted to the Representative for COMMERCE not more often than monthly nor less than quarterly.~~

~~The invoices shall describe and document, to COMMERCE's satisfaction, a description of the work performed, the progress of the project, and fees. The invoice shall include the Contract Number _____. If expenses are invoiced, provide a detailed breakdown of each type. A receipt must accompany any single expenses in the amount of $50.00 or more in order to receive reimbursement. Payment shall be considered timely if made by COMMERCE within thirty (30) calendar days after receipt of properly completed invoices. Payment shall be sent to the address designated by the Contractor.~~

~~COMMERCE may, in its sole discretion, terminate the Contract or withhold payments claimed by the Contractor for services rendered if the Contractor fails to satisfactorily comply with any term or condition of this Contract.~~

~~No payments in advance or in anticipation of services or supplies to be provided under this Agreement shall be made by COMMERCE.~~

~~Invoices and End of Fiscal Year~~

~~Invoices are due on the 20th of the month following the provision of services.~~

~~Final invoices for a state fiscal year may be due sooner than the 20th and Commerce will provide notification of the end of fiscal year due date. The Contractor must invoice for all expenses from the beginning of the contract through June 30, regardless of the contract start and end date.~~

~~Duplication of Billed Costs~~

~~The Contractor shall not bill COMMERCE for services performed under this Agreement, and COMMERCE shall not pay the Contractor, if the Contractor is entitled to payment or has been or will be paid by any other source, including grants, for that service.~~

~~Disallowed Costs~~

~~The Contractor is responsible for any audit exceptions or disallowed costs incurred by its own organization or that of its subcontractors.~~

~~COMMERCE may, in its sole discretion, withhold ten percent (10%) from each payment until acceptance by COMMERCE of the final report (or completion of the project, etc.).~~

5. SUBCONTRACTOR DATA COLLECTION

Contractor will submit reports, in a form and format to be provided by Commerce and at intervals as agreed by the parties, regarding work under this Contract performed by subcontractors and the portion of Contract funds expended for work performed by subcontractors, including but not necessarily limited to minority-owned, woman-owned, and veteran-owned business subcontractors. "Subcontractors" shall mean subcontractors of any tier.

6. INSURANCE

Each party certifies that it is self-insured under the State's or local government self-insurance liability program, and shall be responsible for losses for which it is found liable.

7. FRAUD AND OTHER LOSS REPORTING

Contractor shall report in writing all known or suspected fraud or other loss of any funds or other property furnished under this Contract immediately or as soon as practicable to the Commerce Representative identified on the Face Sheet.

8. ORDER OF PRECEDENCE

In the event of an inconsistency in this Contract, the inconsistency shall be resolved by giving precedence in the following order:

- Applicable federal and state of Washington statutes and regulations
- Attachment D – Proviso
- Program Specific Terms and Conditions
- Special Terms and Conditions
- General Terms and Conditions
- Attachment A – Scope of Work
- Attachment B – Budget
- Attachment C – Reporting
- Submitted RDD2023 Application

Washington State Department of Commerce

General Terms and Conditions

1. DEFINITIONS

As used throughout this Contract, the following terms shall have the meaning set forth below:

A. "Authorized Representative" shall mean the Director and/or the designee authorized in writing to act on the Director's behalf.

B. "COMMERCE" shall mean the Washington Department of Commerce.

C. "Contract" or "Agreement" or "Grant" means the entire written agreement between COMMERCE and the Contractor, including any Attachments, documents, or materials incorporated by reference. E-mail or Facsimile transmission of a signed copy of this contract shall be the same as delivery of an original.

D. "Contractor" or "Grantee" shall mean the entity identified on the face sheet performing service(s) under this Contract, and shall include all employees and agents of the Contractor.

E. "Personal Information" shall mean information identifiable to any person, including, but not limited to, information that relates to a person's name, health, finances, education, business, use or receipt of governmental services or other activities, addresses, telephone numbers, social security numbers, driver license numbers, other identifying numbers, and any financial identifiers, and "Protected Health Information" under the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA).

F. "State" shall mean the state of Washington.

G. "Subcontractor" shall mean one not in the employment of the Contractor, who is performing all or part of those services under this Contract under a separate contract with the Contractor. The terms "subcontractor" and "subcontractors" mean subcontractor(s) in any tier.

2. ALL WRITINGS CONTAINED HEREIN

This Contract contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this Contract shall be deemed to exist or to bind any of the parties hereto.

3. AMENDMENTS

This Contract may be amended by mutual agreement of the parties. Such amendments shall not be binding unless they are in writing and signed by personnel authorized to bind each of the parties.

4. ASSIGNMENT

Neither this Contract, work thereunder, nor any claim arising under this Contract, shall be transferred or assigned by the Contractor without prior written consent of COMMERCE.

5. CONFIDENTIALITY AND SAFEGUARDING OF INFORMATION

A. "Confidential Information" as used in this section includes:

i. All material provided to the Contractor by COMMERCE that is designated as "confidential" by COMMERCE;

ii. All material produced by the Contractor that is designated as "confidential" by COMMERCE; and

iii. All Personal Information in the possession of the Contractor that may not be disclosed under state or federal law.

B. The Contractor shall comply with all state and federal laws related to the use, sharing, transfer, sale, or disclosure of Confidential Information. The Contractor shall use Confidential Information solely for the purposes of this Contract and shall not use, share, transfer, sell or disclose any Confidential Information to any third party except with the prior written consent of COMMERCE or as may be required by law.

The Contractor shall take all necessary steps to assure that Confidential Information is safeguarded to prevent unauthorized use, sharing, transfer, sale or disclosure of Confidential Information or violation of any state or federal laws related thereto. Upon request, the Contractor shall provide COMMERCE with its policies and procedures on confidentiality. COMMERCE may require changes to such policies and procedures as they apply to this Contract whenever COMMERCE reasonably determines that changes are necessary to prevent unauthorized disclosures.

The Contractor shall make the changes within the time period specified by COMMERCE. Upon request, the Contractor shall immediately return to COMMERCE any Confidential Information that COMMERCE reasonably determines has not been adequately protected by the Contractor against unauthorized disclosure.

C. Unauthorized Use or Disclosure. The Contractor shall notify COMMERCE within five (5) working days of any unauthorized use or disclosure of any confidential information, and shall take necessary steps to mitigate the harmful effects of such use or disclosure.

6. COPYRIGHT

Unless otherwise provided, all Materials produced under this Contract shall be considered "works for hire" as defined by the U.S. Copyright Act and shall be owned by COMMERCE. COMMERCE shall be considered the author of such Materials. In the event the Materials are not considered “works for hire” under the U.S. Copyright laws, the Contractor hereby irrevocably assigns all right, title, and interest in all Materials, including all intellectual property rights, moral rights, and rights of publicity to COMMERCE effective from the moment of creation of such Materials.

“Materials” means all items in any format and includes, but is not limited to, data, reports, documents, pamphlets, advertisements, books, magazines, surveys, studies, computer programs, films, tapes, and/or sound reproductions. “Ownership” includes the right to copyright, patent, register and the ability to transfer these rights.

For Materials that are delivered under the Contract, but that incorporate pre-existing materials not produced under the Contract, the Contractor hereby grants to COMMERCE a nonexclusive, royalty-free, irrevocable license (with rights to sublicense to others) in such Materials to translate, reproduce, distribute, prepare derivative works, publicly perform, and publicly display. The Contractor warrants and represents that the Contractor has all rights and permissions, including intellectual property rights, moral rights and rights of publicity, necessary to grant such a license to COMMERCE.

The Contractor shall exert all reasonable effort to advise COMMERCE, at the time of delivery of Materials furnished under this Contract, of all known or potential invasions of privacy contained therein and of any portion of such document which was not produced in the performance of this Contract. The Contractor shall provide COMMERCE with prompt written notice of each notice or claim of infringement received by the Contractor with respect to any Materials delivered under this Contract. COMMERCE shall have the right to modify or remove any restrictive markings placed upon the Materials by the Contractor.

7. DISPUTES

In the event that a dispute arises under this Agreement, it shall be determined by a Dispute Board in the following manner: Each party to this Agreement shall appoint one member to the Dispute Board. The members so appointed shall jointly appoint an additional member to the Dispute Board. The

Dispute Board shall review the facts, Agreement terms and applicable statutes and rules and make a determination of the dispute. The Dispute Board shall thereafter decide the dispute with the majority prevailing. The determination of the Dispute Board shall be final and binding on the parties hereto. As an alternative to this process, either of the parties may request intervention by the Governor, as provided by RCW 43.17.330, in which event the Governor's process will control.

8. GOVERNING LAW AND VENUE

This Contract shall be construed and interpreted in accordance with the laws of the state of Washington, and the venue of any action brought hereunder shall be in the Superior Court for Thurston County.

9. INDEMNIFICATION

Each party shall be solely responsible for the acts of its employees, officers, and agents.

10. LICENSING, ACCREDITATION AND REGISTRATION

The Contractor shall comply with all applicable local, state, and federal licensing, accreditation and registration requirements or standards necessary for the performance of this Contract.

11. RECAPTURE

In the event that the Contractor fails to perform this Contract in accordance with state laws, federal laws, and/or the provisions of this Contract, COMMERCE reserves the right to recapture funds in an amount to compensate COMMERCE for the noncompliance in addition to any other remedies available at law or in equity.

Repayment by the Contractor of funds under this recapture provision shall occur within the time period specified by COMMERCE. In the alternative, COMMERCE may recapture such funds from payments due under this Contract.

12. RECORDS MAINTENANCE

The Contractor shall maintain books, records, documents, data and other evidence relating to this contract and performance of the services described herein, including but not limited to accounting procedures and practices that sufficiently and properly reflect all direct and indirect costs of any nature expended in the performance of this contract.

The Contractor shall retain such records for a period of six years following the date of final payment. At no additional cost, these records, including materials generated under the contract, shall be subject at all reasonable times to inspection, review or audit by COMMERCE, personnel duly authorized by COMMERCE, the Office of the State Auditor, and federal and state officials so authorized by law, regulation or agreement.

If any litigation, claim or audit is started before the expiration of the six (6) year period, the records shall be retained until all litigation, claims, or audit findings involving the records have been resolved.

13. SAVINGS

In the event funding from state, federal, or other sources is withdrawn, reduced, or limited in any way after the effective date of this Contract and prior to normal completion, COMMERCE may suspend or terminate the Contract under the "Termination for Convenience" clause, without the ten calendar day notice requirement. In lieu of termination, the Contract may be amended to reflect the new funding limitations and conditions.

14. SEVERABILITY

The provisions of this contract are intended to be severable. If any term or provision is illegal or invalid for any reason whatsoever, such illegality or invalidity shall not affect the validity of the remainder of the contract.

15. SUBCONTRACTING (Replaced by Program Specific Terms and Conditions #2 Subcontracting)

~~The Contractor may only subcontract work contemplated under this Contract if it obtains the prior written approval of COMMERCE.~~

~~If COMMERCE approves subcontracting, the Contractor shall maintain written procedures related to subcontracting, as well as copies of all subcontracts and records related to subcontracts. For cause, COMMERCE in writing may: (a) require the Contractor to amend its subcontracting procedures as they relate to this Contract; (b) prohibit the Contractor from subcontracting with a particular person or entity; or (c) require the Contractor to rescind or amend a subcontract.~~

~~Every subcontract shall bind the Subcontractor to follow all applicable terms of this Contract. The Contractor is responsible to COMMERCE if the Subcontractor fails to comply with any applicable term or condition of this Contract. The Contractor shall appropriately monitor the activities of the Subcontractor to assure fiscal conditions of this Contract. In no event shall the existence of a subcontract operate to release or reduce the liability of the Contractor to COMMERCE for any breach in the performance of the Contractor's duties.~~

~~Every subcontract shall include a term that COMMERCE and the State of Washington are not liable for claims or damages arising from a Subcontractor's performance of the subcontract.~~

16. SURVIVAL

The terms, conditions, and warranties contained in this Contract that by their sense and context are intended to survive the completion of the performance, cancellation or termination of this Contract shall so survive.

17. TERMINATION FOR CAUSE

In the event COMMERCE determines the Contractor has failed to comply with the conditions of this contract in a timely manner, COMMERCE has the right to suspend or terminate this contract. Before suspending or terminating the contract, COMMERCE shall notify the Contractor in writing of the need to take corrective action. If corrective action is not taken within 30 calendar days, the contract may be terminated or suspended.

In the event of termination or suspension, the Contractor shall be liable for damages as authorized by law including, but not limited to, any cost difference between the original contract and the replacement or cover contract and all administrative costs directly related to the replacement contract, e.g., cost of the competitive bidding, mailing, advertising and staff time.

COMMERCE reserves the right to suspend all or part of the contract, withhold further payments, or prohibit the Contractor from incurring additional obligations of funds during investigation of the alleged compliance breach and pending corrective action by the Contractor or a decision by COMMERCE to terminate the contract. A termination shall be deemed a "Termination for Convenience" if it is determined that the Contractor: (1) was not in default; or (2) failure to perform was outside of his or her control, fault or negligence.

The rights and remedies of COMMERCE provided in this contract are not exclusive and are, in addition to any other rights and remedies, provided by law.

18. TERMINATION FOR CONVENIENCE

Except as otherwise provided in this Contract, COMMERCE may, by ten (10) business days' written notice, beginning on the second day after the mailing, terminate this Contract, in whole or in part. If this Contract is so terminated, COMMERCE shall be liable only for payment required under the terms of this Contract for services rendered or goods delivered prior to the effective date of termination.

19. TERMINATION PROCEDURES

Upon termination of this contract, COMMERCE, in addition to any other rights provided in this contract, may require the Contractor to deliver to COMMERCE any property specifically produced or

acquired for the performance of such part of this contract as has been terminated. The provisions of the "Treatment of Assets" clause shall apply in such property transfer.

COMMERCE shall pay to the Contractor the agreed upon price, if separately stated, for completed work and services accepted by COMMERCE, and the amount agreed upon by the Contractor and COMMERCE for (i) completed work and services for which no separate price is stated, (ii) partially completed work and services, (iii) other property or services that are accepted by COMMERCE, and (iv) the protection and preservation of property, unless the termination is for default, in which case the Authorized Representative shall determine the extent of the liability of COMMERCE. Failure to agree with such determination shall be a dispute within the meaning of the "Disputes" clause of this contract. COMMERCE may withhold from any amounts due the Contractor such sum as the Authorized Representative determines to be necessary to protect COMMERCE against potential loss or liability.

The rights and remedies of COMMERCE provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

After receipt of a notice of termination, and except as otherwise directed by the Authorized Representative, the Contractor shall:

A. Stop work under the contract on the date, and to the extent specified, in the notice;

B. Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portion of the work under the contract that is not terminated;

C. Assign to COMMERCE, in the manner, at the times, and to the extent directed by the Authorized Representative, all of the rights, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case COMMERCE has the right, at its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

D. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Authorized Representative to the extent the Authorized Representative may require, which approval or ratification shall be final for all the purposes of this clause;

E. Transfer title to COMMERCE and deliver in the manner, at the times, and to the extent directed by the Authorized Representative any property which, if the contract had been completed, would have been required to be furnished to COMMERCE;

F. Complete performance of such part of the work as shall not have been terminated by the Authorized Representative; and

G. Take such action as may be necessary, or as the Authorized Representative may direct, for the protection and preservation of the property related to this contract, which is in the possession of the Contractor and in which COMMERCE has or may acquire an interest.

20. TREATMENT OF ASSETS

Title to all property furnished by COMMERCE shall remain in COMMERCE. Title to all property furnished by the Contractor, for the cost of which the Contractor is entitled to be reimbursed as a direct item of cost under this contract, shall pass to and vest in COMMERCE upon delivery of such property by the Contractor. Title to other property, the cost of which is reimbursable to the Contractor under this contract, shall pass to and vest in COMMERCE upon (i) issuance for use of such property in the performance of this contract, or (ii) commencement of use of such property in the performance of this contract, or (iii) reimbursement of the cost thereof by COMMERCE in whole or in part, whichever first occurs.

A. Any property of COMMERCE furnished to the Contractor shall, unless otherwise provided herein or approved by COMMERCE, be used only for the performance of this contract.

B. The Contractor shall be responsible for any loss or damage to property of COMMERCE that results from the negligence of the Contractor or which results from the failure on the part of the Contractor to maintain and administer that property in accordance with sound management practices.

C. If any COMMERCE property is lost, destroyed or damaged, the Contractor shall immediately notify COMMERCE and shall take all reasonable steps to protect the property from further damage.

D. The Contractor shall surrender to COMMERCE all property of COMMERCE prior to settlement upon completion, termination or cancellation of this contract.

E. All reference to the Contractor under this clause shall also include Contractor's employees, agents or Subcontractors.

21. WAIVER

Waiver of any default or breach shall not be deemed to be a waiver of any subsequent default or breach. Any waiver shall not be construed to be a modification of the terms of this Contract unless stated to be such in writing and signed by Authorized Representative of COMMERCE.

Washington State Department of Commerce

Attachment A: Scope of Work

Purpose/ narrative: The project goal is to demonstrate how a new small-scale carbon capture technology, using a new and novel adsorbent, can significantly reduce the green house gas (GHG) emissions from the EWU central plant. The project will implement a modular pilot carbon capture system utilizing a novel metal organic framework (MOF) adsorbent. The MOF will demonstrate feasibility of carbon capture to reduce CO_2 emissions at a lower energy intensity as a viable pathway to help the university meet its emission reduction goals. The project will demonstrate that the application of the new novel MOF can lower the energy intensity of the process by 20% or more, resulting in an industry-leading energy intensity and levelized cost of carbon. EWU will measure effectiveness of the carbon capture system through evaluating performance data, Life Cycle Assessment (LCA) analysis, and levelized cost of carbon calculations. The carbon capture system will serve as a blueprint for other Washington universities and district steam heating campuses needing to reduce near term GHG emissions.

Site Address: Eastern Washington University, 101 Rozell, Cheney, WA 99004-2464

Serving electric utility: Cheney City Light (City of Cheney, WA)

Major Components:

Component	Approximate Cost	Description
System Design	~$113,000	System Integration and Design
One Carbon Capture System	~$2,961,646.00	Complete Carbon Capture system may include: Inlet Water Separation Inlet Compressor Desiccant Dryer Pressure Swing Adsorption Sys. Vacuum Pump CO2 Compression System CO2 Liquefaction System CO2 Storage Tank Offtake Pump and Port
Multiple Permits	~$20,000	Electrical, Building, Plumbing Permits

Permits Required

☒Electrical	☒Building	☐ Land use
☐ SEPA	☐ NEPA	☒Other (please specify): Investment grade audit will determine the full extent of permits required.

Preliminary Design/Investment Grade Audit

1. The project will be procured using Energy Savings Performance Contracting (ESPC) through EWU's competitively selected Energy Services Company (ESCO).
2. The first step will include an Investment Grade Audit (IGA).
3. The deliverable from the IGA is an Energy Services Proposal (ESP) which will include:
    a. Detailed Scope of Work
    b. Guaranteed Maximum Price of the project
    c. Guaranteed Performance of the project (GHG Reduction)
    d. Construction contract
4. The entire design and construction of the system will be contracted to the ESCO.
5. The carbon capture equipment will be procured by the ESCO.
6. Life Cycle Assessment Planning will be completed in-house by EWU
7. Equipment media specifications and verification plan will be completed by the equipment manufacturer.
8. Sequestration pathways will be assessed both in-house and with the equipment manufacturer.

Final Design & Equipment Procurement

1. Final equipment design will be completed by the equipment manufacturer based on the budget and performance criteria specified in the Investment Grade Audit.
2. Purchase order to the equipment manufacturer with 50% deposit once design is finalized and approved.
3. Necessary permits requested to Authority Having Jurisdiction (AHJ).

Construction

1. Site preparation
2. Mechanical, electrical and plumbing to accept system installation
3. Equipment delivery and connection
4. Commissioning of system
5. Training of EWU staff on system operation
6. Construction Close-out

Analytics & Monitoring

1. Validation of adsorbent performance improvement
2. Sequestration path established
3. One-year measurement and verification of carbon capture and GHG reduction.
4. CarbonQuest has a web-based Carbon Management System that tracks, records, and provides historical access for system performance and carbon accounting. Access is provided to the University staff and allows for tracking and performance monitoring.

CarbonQuest has a web-based Carbon Management System that tracks, records, and provides historical access for system performance and carbon accounting. Access is provided to the University staff and allows for tracking and performance monitoring. Following are examples of what that data could look like:

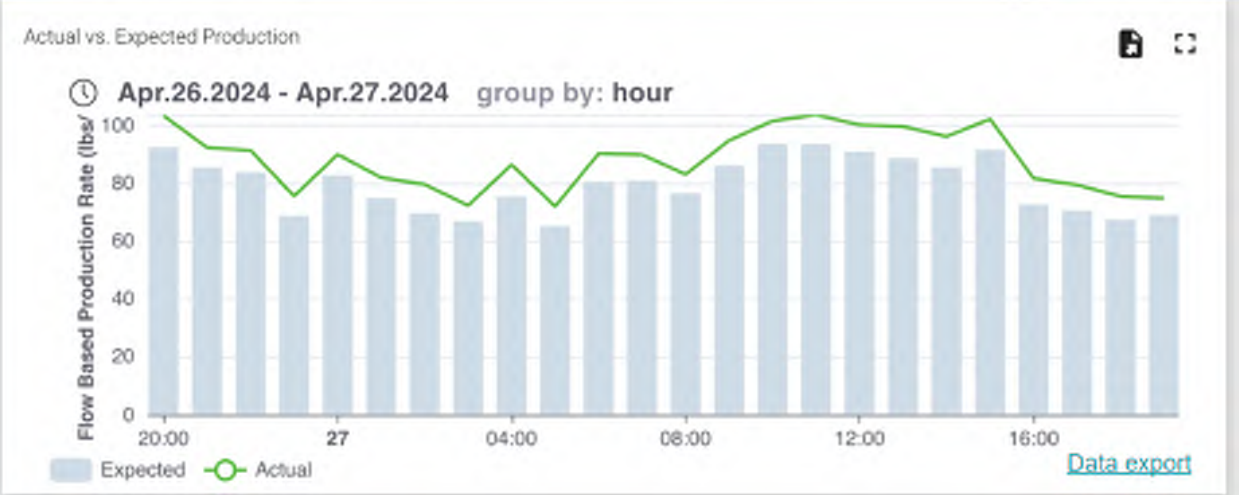
Washington State Department of Commerce

Key Performance Indicators

History - from 2024-04-26 23:00:00 to 2024-04-27 23:00:00 | EDT

Runtime (%)	Gross Carbon Captured (tCO2)	Electrical Emissions (tCO2e)	Net Carbon Captured (tCO2e)	Energy Efficiency (kWh/lb)	Total Production Rate (lbs/hr)
59 %	0.928 tCO2	0.477 tCO2e	0.451 tCO2e	0.80 kWh/lb	87 lbs/hr
Uptime (%)	Gross Carbon Captured (lbs)	Energy Used (kWh)	Carbon Efficiency (%)	Energy Efficiency (kWh/tCO2)	Running Production Rate (lbs/hr)
100 %	2047 lbs	1652 kWh	50 %	1773 kwh/tCO2	144 lbs/hr

Actual vs Expected performance (by day)



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Attachment B: Budget

All funding is subject to continued legislative authorization and re-appropriation where applicable.

Milestone	Deliverable(s)	Deliverable Description	Expected Completion Date	Percent of Grant	$ Applicant Match	$ Amount of Grant
A: ESCO Selection, Preliminary Design			**Q4 2024 - Q3 2025**			
A1:	ESCO Selection MOU	Memorandum of Understanding (MOU) to Selected ESCO	Completed	0.00%	$0	$0
A2:	Investment Grade Audit (IGA) Contract	Investment Grade Audit Proposal/Contract	Completed	0.00%	$0	$0
A3:	IGA Report & Energy Services Proposal (ESP)	IGA Report and ESP including GMAX Pricing, Guaranteed Performance	July - '25	4.44%	$58,673	$85,000
			Milestone A Subtotal	**4.44%**	**$58,673**	**$85,000**
B: Final Design, Equipment Procurement			**Q3 - Q4 2025**			
B1:	100% Design - virtual meeting with commerce to present 100% design	Complete Mechanical, Electrical, Plumbing (MEP) design and site plans for carbon capture system & installation	September - '25	5.90%	$15,605	$113,000
B2:	Equipment Ordering	Equipment Purchase Order (50% payment) or other proof of payment	August - '25	72.15%	$276,047	$1,380,823
B3:	Permits	Permitting for carbon capture system	December '25	1.05%	$0	$20,000
			Milestone B Subtotal	**79.10%**	**$291,652**	**$1,513,823**
C: Construction			**Q1 2026 - Q1 2027**			
C1:	Equipment Fabrication	Equipment Fabrication (30%)	January – '26	0.00%	$994,122	$0
C2:	Site Prep - Photos and report of progress	Prepare site outside of Rozel Central plant for carbon capture system including concrete pad-mobilize 20% progress pmt	April – '26	2.25%	$35,549	$42,980
C3:	Site Prep -Photos and report of progress	Prepare site outside of Rozel Central plant for carbon capture system including concrete pad- 20% progress pmt	May – '26	2.25%	$35,549	$42,980

C4:	Site Prep - Photos and report of progress	Prepare site outside of Rozel Central plant for carbon capture system including concrete pad- 20% progress pmt	June – '26	2.25%	$35,549	$42,980
C5:	Equipment Acceptance	Equipment factory acceptance testing (10%)	June – '26	0.00%	$331,374	$0
C6:	Site Prep - Photos and report of progress	Prepare site outside of Rozel Central plant for carbon capture system including concrete pad- 20% progress pmt	July – '26	2.25%	$35,549	$42,980
C7:	Site Prep - Photos and report of progress	Prepare site outside of Rozel Central plant for carbon capture system including concrete pad- 20% progress pmt	August – '26	2.25%	$35,549	$42,980
C8:	MEP	Mechanical, electrical, and plumbing for carbon capture system – mobilize 25%	September - '26	0.00%	$217,029	$0
C9:	MEP	Mechanical, electrical, and plumbing for carbon capture system – 25% progress pmt	October – '26	0.00%	$217,029	$0
C10:	MEP	Mechanical, electrical, and plumbing for carbon capture system – 25% progress pmt	November - '26	0.00%	$217,029	$0
C11:	MEP	Mechanical, electrical, and plumbing for carbon capture system – 25% progress pmt	December – '26	0.00%	$217,029	$0
C12:	Equipment Delivery - Commissioning	Bring carbon capture system into working condition	January – '27	0.00%	$331,374	$0
C13:	Training	Train EWU staff in proper operation of carbon capture system	February '27	0.00%	$5,690	$0
C14:	Closeout	Complete construction and installation of carbon capture system	March – '27	0.00%	$2,845	$0
C15:	University Administration	University contract administration	October ' 26	0.00%	$58,264	$0
			Milestone C Subtotal	**11.23%**	**$2,769,530**	**$214,900**
D: Analytics & Monitoring			**Q4 2026 - Q1 2028**			
D1:	Final Report	Communicate the project narrative with a Fact Sheet based on the Commerce-provided template and at least one other mode of story-telling. Final report will include data reporting, maintenance plan, and utilization plan.	November – '26	5.23%	$0.00	$100,000

D2:	Conference Presentation	Appropriate conference will be selected and presentation proposal will be submitted. CarbonQuest and EWU staff/students will give presentation at conference.	June - '27	0.00%	$5,000	$0
D3:	Greenhouse Gas Reduction Guarantees	Measurement and verification of carbon capture system	March '28	0.00%	$9,560	$0
D4:	Life Cycle Assessment Study	Model carbon capture system and potential carbon sequestration pathways to assess carbon reduction potentials. Completed case-study will be submitted to peer reviewed journal for publication.	June - '27	0.00%	$5,000	$0
			Milestone D Subtotal	**5.23%**	**$19,560**	**$100,000**
			TOTALS:	**100.00%**	**$3,139,415**	**$1,913,723**

Washington State Department of Commerce

Attachment C: Reporting

The Contractor shall provide a quarterly report to COMMERCE, no later than 15 days after the end of each quarter. The template report form will be provided by Commerce. The report should describe the project activity that occurred during the quarter, including but not limited to:

- A narrative summarizing project activities, risks and issues mitigated, and lessons learned;
- The project milestones met to date and anticipated in the subsequent quarter (such as through a project Gantt Chart schedule provided quarterly showing actual progress to date along with the baseline schedule developed at project kickoff etc.); and,
- Any additional metrics required from the capital budget proviso, legislature, governor's office, or COMMERCE.
- Quarterly updated invoice projection sheet for grant expenditures. Commerce will provide the invoice projection sheet;

A final report and fact sheet will be submitted to Commerce. Commerce will provide the fact sheet template and may request the fact sheet be updated as conditions warrant.

Washington State Department of Commerce

Attachment D: Proviso

Engrossed Substitute Senate Bill 6248, Chapter 356, Laws of 2020
Section 1005
Clean Energy Transition 4 (40000042)
The appropriation in this section are subject to the following conditions and limitations:6)
(a) $8,100,000 of the state building construction account—state appropriation is provided solely for competitive grants for strategic research and development for new and emerging clean energy technologies. These grants will be used to match federal or other nonstate funds to research, develop, and demonstrate clean energy technologies.
(b) The department shall consult and coordinate with the University of Washington, Washington State University, the Pacific Northwest national laboratory and other clean energy organizations to design the grant program. Clean energy organizations who compete for grants from the program may not participate in the design of the grant program. Criteria for the grant program must include life cycle cost analysis for projects that are part of the competitive process.
(c) The program may include, but is not limited to: Solar technologies, advanced bioenergy and biofuels, development of new earth abundant materials or lightweight materials, advanced energy storage, battery components recycling, and new renewable energy and energy efficiency technology.

Substitute House Bill 1080, Chapter 332, Laws of 2021
Section 1064
2021-23 Clean Energy V - Investing in Washington's Clean Energy (40000148)
The appropriations in this section are subject to the following conditions and limitations:(9) $10,830,000 of the state building construction account—state appropriation is provided solely for grants for strategic research and development for new and emerging clean energy technologies. These grants must be used to match federal or other nonstate funds to research, develop, and demonstrate clean energy technologies, focusing on areas that help develop technologies to meet the state's climate goals, offer opportunities for economic and job growth, and strengthen technology supply chains. The program may include, but is not limited to: Solar technologies, advanced bioenergy and biofuels, development of new earth abundant materials or lightweight materials, advanced energy storage, recycling energy system components, and new renewable energy and energy efficiency technologies.

Engrossed Substitute Senate Bill 5949 Chapter 375, Laws of 2024
Section 1006
2023-25 Clean Energy Fund Program (40000294)
The appropriation in this section is subject to the following conditions and limitations:(2) Except as provided in subsections (1) and (11), (13), and (14) of this section, the appropriation in this section is provided solely for competitive grants to eligible entities for predevelopment, design, and construction of projects that provide a public benefit through research, development, demonstration, or deployment of clean energy technologies that save energy and reduce energy costs, reduce harmful air emissions, or increase energy independence for the state. Priority must be given to projects that benefit vulnerable populations and overburdened communities, including tribes.

EWU Large Solar Array

Ecovoltaic Feasibility Study

Eastern Washington University

CASCADIA RENEWABLES

Prepared by Cascadia Renewables for:
Eastern Washington University

info@cascadiarenewables.com

Published Jun 19, 2025

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About Cascadia Renewables

Cascadia Renewables is a technical consultant based in Washington state, specializing in designing and deploying solar and storage assets. We leverage our combined decades of industry experience to support public and private entities as they pursue their clean energy goals. Our team has led regional clean energy policy initiatives focused on equality, transparency, and affordability.

Authors

- Markus Virta – *Managing Partner*
- Callum McSherry – *Managing Partner*
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- Dana Hickenbottom – *Sr PV/ESS Design & Project Manager*
- Rose Kirby – *Information Designer & Project Coordinator*
- Emily Coulter – *Content Writer & Administrative Assistant*

Executive Summary

The Eastern Washington University (EWU) Ecovoltaic Project is a proposed 1.45 MW DC ground-mounted solar photovoltaic installation designed to advance EWU's sustainability goals while integrating education, research, and equity into its core functionality. Strategically sited across three zones on the Cheney campus adjacent to the Palouse Prairie Restoration Project, the system will combine renewable energy generation with habitat restoration, student access, and climate-focused curriculum development, establishing EWU as a leader in applied energy transition education.

Since project inception, extensive engagement has shaped the system's design and institutional fit. Project development has included structured lectures, site walks, and workshops with academic departments, active collaboration with EWU Facilities, and detailed planning sessions with civil and electrical engineers, solar contractors, and environmental scientists. The feasibility team has coordinated with the Washington State University (WSU) Community Solar Program, City of Cheney Light Department, Avista Utilities, Bonneville Power Administration (BPA), applicable Authorities Having Jurisdiction (AHJs), and the Washington Department of Archaeology and Historic Preservation (DAHP) to ensure cross-compliance, integration feasibility, and long-term resilience.

The system comprises (2,500) Heliene 580 watt bifacial solar modules on Terrasmart Terraglide 35° fixed-tilt racking with module-level optimization via SolarEdge three-phase inverters. Each array includes pad-mounted transformers and secure fencing, with the medium-voltage feeder routed via EWU's utility tunnel to the Rozell Power Plant. A comprehensive SolarEdge monitoring platform will support both operational diagnostics and educational programming.

Estimated to generate over 1.8 million kWh annually, the system will offset approximately $54,000 in electricity costs in its first year, with avoided cost savings escalating in line with utility rates. Greenhouse gas (GHG) reductions approximate 1,422 metric tons of CO2 annually, supporting both EWU's carbon neutrality objectives and the State of Washington's broader climate adaptation strategy.

The financial model is designed to leverage both state and federal incentives while ensuring compliance with Washington's Community Solar legislation (RCW 82.16.183). A proposed partnership with the EWU Foundation would direct all net financial benefits to a newly established low-income scholarship fund, amplifying the project's equity impact. Funding sources include the 30% federal Investment Tax Credit (ITC) via direct pay ($1.871 million) and Washington State University Energy Program's Community Solar program ($3.262 million), leaving a projected funding gap of $1.1 million to be addressed through institutional match or grant acquisition. Additional Ecovoltaic specific fees for planting, site preparation and ongoing maintenance are not included in the PV construction budget, and should be considered as an addition to the institutional match or additional grant acquisition (if applicable).

Not intended as a scalable utility model, the EWU Ecovoltaic system is deliberately over-specified relative to commercial or utility-scale solar projects. This enhanced infrastructure, characterized by module-level monitoring, robust electrical distribution, ecological restoration, and a layered safety architec-

ture, is purpose-built as a learning laboratory. The system is designed to inform future large-scale ecovoltaic deployments by enabling advanced monitoring, vegetation and energy-yield research, and student interaction, all while maintaining the highest standards of safety and operational integrity.

Project Background & Goals

Overview

Eastern Washington University (EWU) is a public state university located in Cheney, Washington, that is actively pursuing a comprehensive decarbonization strategy aligned with its institutional sustainability goals and state legislation (House Bill 1390). The university's Sustainability Office, led by Dr. Erik Budsberg, has sought to integrate renewable energy generation with academic programming, ecosystem enhancement, and climate resilience across campus. This feasibility study centers on a proposed multi-array ecovoltaic installation on three underutilized land parcels near the university's Jim Thorpe Fieldhouse, the 120-acre Palouse Prairie Restoration Project, and the university's Police Department Red Barn.

This dual-use solar project expands upon previous feasibility work conducted by Cascadia Renewables for solar plus storage systems at the JFK Memorial Library and the Jim Thorpe Fieldhouse on the EWU campus. Those studies highlighted the limitations of rooftop installations while recognizing the university's strong interest in resilient, community-serving energy infrastructure. The current ecovoltaic concept being pursued builds on those recommendations and reflects a strategic pivot toward ground-mounted solar infrastructure integrated with ecological co-benefits.

Ecovoltaics, Agrivoltaics, and the Palouse Prairie Restoration at EWU

Defining Agrivoltaics and Ecovoltaics

Agrivoltaics refers to the dual-use strategy of combining photovoltaic (PV) solar energy production with ongoing agricultural activity, such as crop production, grazing, or pollinator habitat development. The goal is to maintain or even enhance agricultural productivity while generating renewable energy from the same land area. Agrivoltaic systems can improve land-use efficiency, support farm economics, and increase resilience to climate variability.

Ecovoltaics builds upon this concept by incorporating ecological principles directly into the design and operation of solar energy systems. Rather than retrofitting energy-focused infrastructure to accommodate habitat functions, ecovoltaics co-prioritizes ecosystem services, such as biodiversity enhancement, soil health, and carbon sequestration, alongside energy generation from the outset. The ecovoltaic approach is especially valuable in water-limited environments like grasslands, where shading from PV panels can alter microclimates in ways that benefit both plants and soil microbes.

The EWU Palouse Prairie Restoration Project

The Palouse Prairie Restoration Project at Eastern Washington University (EWU) is a long-term ecological restoration

initiative aimed at recovering one of the most endangered ecosystems in North America: the Palouse prairie. Once spanning eastern Washington and parts of Idaho, this grassland ecosystem has been reduced to a fraction of its original extent due to agricultural conversion. EWU's 120-acre site on the Cheney campus serves as both a living laboratory and a symbol of environmental commitment, engaging students, researchers, and the community in restoration science, native seed propagation, and sustainable land stewardship. EWU Prairie Restoration Project Website.

Project Goals: Leveraging Ecovoltaics at the Prairie Interface Zone

The proposed ecovoltaic installation at EWU aims to study the integration of clean energy generation with ecological restoration to explore the viability of sustainable land use. One of the three proposed solar deployment zones, the Prairie Interface Zone (Area 1), is directly adjacent to the Palouse Prairie Restoration area, making it a prime location to investigate how solar infrastructure can enhance or challenge ecosystem function in restored native grasslands.

The project is intentionally designed as a learning and research platform. By installing a 1.45 MWdc bifacial PV array with module-level monitoring and no extensive grading or topsoil removal, EWU will be able to study a range of interactions between solar infrastructure and grassland processes. These include microclimate variation, plant productivity, invasive species management, pollinator habitat viability, and soil biogeochemistry.

Academic Leadership and Research Capacity

An interdisciplinary team of EWU faculty and sustainability professionals will oversee and advance this effort:

- **Dr Erik Budsberg, Director of Utilities and Sustainability**, leads EWU's Office of Sustainability and brings expertise in life cycle assessment, climate resilience planning, and systems-based sustainability strategy.
- **Dr. Carmen Nezat** brings expertise in soil and water chemistry, offering insight into nutrient cycling and soil health before and after array installation.
- **Dr. Rebecca Brown** leads native plant restoration and will guide vegetation planning within the array, ensuring alignment with regional prairie ecology.
- **Dr. Justin Bastow** focuses on soil ecology and decomposition, providing tools to measure how solar-induced changes affect soil communities.
- **Dr. Krisztian Magori** contributes modeling expertise to assess environmental health and vector ecology under novel microclimates.
- **Erin Endres**, Climate Resilience Specialist, ensures that the project's native planting and maintenance strategies are practical, climate-resilient, and aligned with EWU's landscape master plan.

Project Motivation

The EWU Ecovoltaic Project is driven by the university's commitment to sustainability, applied research, and regional climate leadership. Co-locating ground-mounted solar infrastructure with ecological restoration presents a timely opportunity to explore how energy systems can support, rather than displace, native ecosystems. Sited at the edge of the Palouse Prairie Restoration area, the project enables direct investigation into solar-induced changes in plant productivity, soil health, and habitat function within one of North America's most endangered grassland types.

This installation is optimized not only to produce clean energy but also to function as a research and teaching platform that supports long-term ecological monitoring, student engagement, and interdisciplinary collaboration. By applying ecovoltaic design principles, EWU aims to model a more sustainable approach to solar development, one that supports biodiversity, climate resilience, and public benefit.

Key Goals

The project is structured around the following core goals:

- **Clean Energy Generation**
  Deploy solar arrays capable of generating meaningful electricity to offset campus energy demand, while exploring future integration into the campus district energy system.
- **Ecological Co-Benefits**
  Create and monitor habitats for pollinators and native vegetation under and around the solar arrays, with design attention to shade, microclimates, soil conditions, and use of ruminators for vegetation management.
- **Staff and Student Engagement and Education**
  Involve EWU staff and/or students in all phases of the project, from site evaluation and habitat design to monitoring, maintenance, and impact assessment.
- **Research and Curriculum Integration**
  Build long-term research capacity for soil ecology, restoration ecology, water systems, plant-pollinator dynamics, and sustainability science.
- **Community Solar Model**
  Leverage energy savings from the project to establish a means-tested scholarship, ensuring that low-income students benefit from the clean power produced on campus.
- **Resilience and Infrastructure**
  Build on previous work to ensure the ecovoltaic array can serve as a component of a future campus-wide microgrid, enhancing energy resilience through localized generation and distribution. With future microgrid integration, this system could provide backup power capabilities, improve energy reliability during grid disruptions, and support EWU's long-term strategy for campus electrification and infrastructure modernization.

Summary of Activities

The EWU Ecovoltaic Feasibility Study has been shaped by several site visits, faculty engagement, technical coordination, and stakeholder meetings, all designed to ensure a well-rounded and construction-ready project. These activities are listed below in chronological order:

Fall 2023 – Spring 2024:
Cascadia Renewables conducted solar plus storage feasibility assessments for the JFK Library and Fieldhouse. These studies provided early insights into EWU's energy infrastructure needs and constraints and identified the limitations of rooftop solar.

December 18, 2024:

Dr Erik Budsberg and the Cascadia Renewables team met with Dr. Matthew Sturchio (Cornell University) to discuss ecovoltaic design best practices. Emphasis was placed on minimizing soil disturbance (e.g., avoiding topsoil removal, using pile-driven posts), phased native seeding to suppress noxious weeds, and designing for ecological co-benefits beyond energy production. EWU's water-limited, restoration-adjacent site was seen as highly suitable for ecovoltaics. Tracking systems were deemed impractical; grazing may be considered in the future, but it was not prioritized. Dr. Sturchio highlighted research opportunities in light–soil–vegetation interactions and supported the project's "living laboratory" vision for long-term interdisciplinary study. Recommendations will inform design specs to support future ecological monitoring and research.

January 22, 2025:
First site walk with EWU Facilities' staff and Dr. Erik Budsberg. The discussion focused on potential solar array locations, site constraints, ecological restoration goals, and conceptual access paths. Initial stakeholder meeting with the City of Cheney Building Department officials, the Cheney Fire Department Deputy Fire Chief (Zachary Hedquist), and the City of Cheney's Light Department staff (Terry Mourning and Director Steve Marx).

January 23, 2025:
On the second day of the site evaluation, there will be in-person meetings with a broader group, including the electrical and grounds staff, Dan Wolf (TD&H Engineering), and Mike Terrell (landscape architect). Dean Alego (MW Engineers) participated in identifying the project point-of-interconnection, fire lane, and site access locations, conceptual electrical design, and routing for conduits and wires at the array location and throughout the university's underground utility tunnel network. Concepts for planting, maintenance, and pollinator zones were discussed.

February 13, 2025:
Virtual meeting between Joshua Miller, Markus Virta, and Dr. Erik Budsberg to discuss past and ongoing coordination with Avista regarding utility support and interconnection viability.

February 26, 2025:
Joshua, Callum, Erik, and Dan met virtually to review the conceptual layout and discuss fire marshal requirements. Potential revisions to ensure code compliance and safe routing were addressed.

February 27, 2025:
Callum and Markus held a follow-up meeting with Erik Budsberg to review project progress and gather input from the Sustainability Office.

March 3, 2025:
Virtual meeting with Cheney Deputy Fire Chief, Zach Hedquist, to review the proposed conceptual design. The plan was approved with respect to the National Fire Code, the City's required fire access, and emergency routing.

April 2025:
Geotechnical field work was conducted, including 20 test pits across Areas 1–3. Results identified key constraints: uncontrolled fill in Area 1, shallow bedrock in Area 3, and variable compaction in Area 2. Findings were summarized in a geotechnical report from TD&H Engineering.

March-May 2025:
Joshua Miller held virtual meetings and phone calls with various representatives from Avista and BPA to discuss the proposed project. Both entities expressed verbal support and noted no major technical barriers to interconnection. Separate discussions with Cheney Public Utility District (PUD) confirmed general alignment with the proposed design and routing approach.

May 1, 2025:
In-person presentation to Enviro 101 students on the faculty and academic planning sessions focused on research collaboration, ecological design parameters, and potential monitoring protocols involving students. In-person meeting between Callum McSherry and Erik Budsberg to explore deeper integration of the agrivoltaics project into student curriculum, internships, and career pathway development in the clean energy sector.

May 5, 2025:

Virtual meeting with Environmental Planner and Field Biologist, Randall Miller, to develop strategies for natural insect and rodent control by attracting birds of prey, and resident and migratory birds to the array locations.

June 2, 2025:
Callum led an educational site walk for students in Environmental Science 101, exploring the full project area and engaging students in identifying ecological priorities, dual-use design tradeoffs, and restoration strategies. Feedback was documented via an interactive QR survey.

June 4, 2025:
Ryan Taylor from Sulis Energy reviewed EWU construction standards with Dean Alego (MW Engineering) to refine the budget estimate and confirm compatibility with electrical installation expectations. On the same day, Callum McSherry and Dan Wolf reviewed the geotechnical findings. They discussed the feasibility of helical piers and ground screws, noting concern about fill variability, potential rates of refusal and bearing capacity.

Site Analysis & Constraints

Area 1: Prairie Interface Zone (Western Edge, Adjacent to the Palouse Prairie Restoration Project)

Overview & Physical Context

Area 1 is situated on the western perimeter of the campus, directly abutting the Palouse Prairie Restoration Project. This zone is relatively flat and open, framed to the north and east by low-traffic service roads and to the west by the restoration site itself. The openness, gentle slope, and direct adjacency to the prairie restoration project make this zone ideally positioned for dual-use solar and habitat integration.

Land Use History & Vegetation Profile

Historically used as a construction spoil site, Area 1 contains undocumented fill materials of varying quality and depth. Aerial imagery and anecdotal input indicate minimal past ecological management. Current vegetation consists primarily of opportunistic invasive grasses and weedy forbs. While ecologically degraded, this underutilized space offers a high-value opportunity for redevelopment that supports both energy production and habitat goals.

Ecological Potential & Integration Opportunities

The proximity of Area 1 to the prairie restoration zone offers a uniquely powerful ecological interface. The potential for seed transfer, pollinator corridor expansion, and long-term coordinated monitoring is unmatched among the three zones. However, this opportunity also presents constraints: soil disturbance must be minimized, and restoration-aligned design principles must be applied. Special attention is needed to match native plantings to microclimatic changes caused by panel shading and to suppress invasive species over the long term.

Soil & Geotechnical Conditions

Associated Test Pits: TP-S25015-A through TP-S25015-K

Key Findings:

- Deep heterogeneous fill observed, ranging from 5 to 10 feet in depth.
- Debris, including concrete, wood, plastic, and glass fragments encountered throughout the profile.
- Underlying native soils are classified as lean clay with variable sand (CL), exhibiting low strength and patchy saturation.
- Surface conditions showed significant crusting and sparse vegetative cover, consistent with historical compaction and disturbance.

Construction Implications:

- Groundscrews may not be viable due to heterogeneous fill, presence of debris, and risk of refusal.
- Helical piers are recommended by the pre-design geotech report, with embedment depths >10 ft, designed to bypass loose or refuse-laden layers.
- Overexcavation and reconditioning with engineered fill is technically feasible but ecologically disruptive.

Operational Risks:

- Potential for long-term settlement due to uncompacted zones and voids.
- Vegetation establishment may be hindered by crusting and fill quality unless topsoil is amended and decompacted.

Access & Construction Logistics

Access to Area 1 is excellent via existing service roads, with a newly constructed fire lane doubling as a staging zone for materials and equipment. All construction routes will avoid encroachment into the prairie restoration area through protective fencing and buffer zones. No special access mats or soil stabilization interventions are currently planned due to the anticipated soil behavior.

Site Preparation & Installation Strategy

- Pre-construction treatment will include rototilling the upper 6” of soil to prepare the site for post-installation grass mix seeding.
- The ground mounted solar mounting/racking system is a major variable:
    - Helical pile foundations are recommended by TD&H Engineering due to the soil conditions as shown in the attached pre-design geotech report.
    - Ground screws are preferred and have been integrated into the final design by Terrasmart. They may require additional pre-drilling and/or concrete footings as determined by the geotech report or varying soil conditions that the installer will encounter that may hinder the screw installation. An additional onsite pull-test and soil review is required by Terrasmart prior to final contracting or installation. Terrasmart has reviewed the geotech report and has included a 15% contingency in their proposed installation services contract for ground screws that will require additional drilling or foundations. See attached Terrasmart engineering for further details and considerations.
    - Ballasted solar mounting systems may demand significant site grading, would limit options for eco-voltaic design considerations, and would be more disruptive.
- Any debris discovered during construction will be removed to either offsite facilities or an EWU-sanctioned location.

Trenching & Electrical Integration

- 480Y/277V commercial PV inverters will be installed individually on the ground mount racking system, with manual load break AC disconnects.
- PV Area 1 will house its own pad-mounted step-up transformer and 480Y/277V distribution panel that will serve as the PV array’s AC generation combiner panel, withina secondary fenced equipment enclosure.
- Medium-voltage conductors will trench to the convergence point north of Area 3 where a medium-voltage switch will be installed and the combined PV arrays power will transfer into the university’s tunnel system to the Rozell Plant for interconnection.
- Directional boring is not viable in this zone; trenching poses some risk to undocumented irrigation lines and requires careful coordination.

- All trenching must be executed with awareness of soil instability and debris.

Vegetation Management & Fire Safety

- All arrays, including Area 1, will be seeded with a universal hydroseed mix designed to remain under or equal to 12” in height to comply with fire code.
- Initial vegetation efforts will focus on establishing ground cover and weed suppression, supported by targeted herbicide treatments.
- Once established, pollinator enhancement zones or “islands” may be introduced.
- The vegetation management and fire safety strategy—including access lanes and vertical clearance—has been reviewed and approved by the City of Cheney Deputy Fire Chief.

Educational & Research Opportunities

Area 1 is poised to be the flagship interface between EWU’s sustainability goals and its academic mission. Faculty have identified numerous teaching and research opportunities here, including:

- Monitoring the success of native vegetation under different panel shading conditions.
- Tracking pollinator diversity and activity across microclimates.
- Developing and testing low-disturbance maintenance regimes.
- Involving students in longitudinal studies of restoration and energy synergy.

Area 2: Campus Edge Transition Zone

Overview & Physical Context

Area 2 is located directly east of Area 1 and acts as a transitional buffer between the solar installation and core campus facilities, particularly the athletics complex. It is a long, narrow zone running parallel to the south edge of Playfield 1, with flat topography and unobstructed solar access. A central gravel access road divides Area 1 and Area 2, connecting EWU’s maintenance and facilities buildings. This area is more exposed and publicly visible than Area 1, with moderate vehicular and pedestrian traffic.

Land Use History & Vegetation Profile

Historically, Area 2 has functioned as a utilitarian service corridor, facilitating groundskeeping, deliveries, and facilities operations. Its surface vegetation reflects typical campus turf management practices: dominated by non-native grasses, regularly disturbed by vehicle traffic, and occasionally mowed or compacted. The gravel road has been heavily compacted over time and lacks formal drainage infrastructure. Utility lines for communications and irrigation likely run beneath the corridor, though these are not expected to interfere with solar deployment.

Ecological Potential & Campus Integration

While less ecologically connected than Area 1, Area 2 offers transitional habitat potential and meaningful opportunities for urban-edge restoration. Its position between core campus activity and prairie zones makes it an ideal location to demonstrate how developed spaces can support pollinator movement and biodiversity. Its visibility further enhances its value for educational signage, sustainability storytelling, and campus engagement.

Soil & Geotechnical Conditions

Associated Test Pits: TP-S25015-L through TP-S25015-Q

Key Findings:

- Fill depth of 1 to 4 feet over compacted gravel/cobble layers and native silty sands and loams.
- Evidence of prior road construction in the central corridor with heavily compacted substrates.
- Native soils are classified as sandy lean clay (CL) and silty sand (SM), with moderate bearing strength.
- No construction debris found; drainage acceptable, but local infiltration hindered by surface compaction.

Construction Implications:

- Helical piers are feasible, especially in the southern half of the zone.
- Ground screws are preferred by Terrasmart and are feasible in this area.
- Pre-drilling may be required in compacted areas to aid embedment.
- Utility avoidance and layout flexibility are needed due to likely subsurface infrastructure.

Operational Risks:

- Localized settlement potential where compaction transitions sharply.
- If the central road is removed, the disturbed soil may be prone to erosion unless treated and revegetated.

Access & Construction Logistics

The existing gravel access road provides excellent entry and staging space for construction equipment. However, as this road is slated for relocation where it crosses the south edge of Area 2 to allow for additional PV array installations, it's construction use will need to be short-term and closely coordinated with EWU facilities and athletics departments. Additional laydown space exists to the east of the project site, facilitating efficient material delivery and vehicle movement.

Site Preparation & Installation Strategy

- The site will follow a uniform preparation sequence: 6-inch rototilling, installation, and hydroseeding following construction.
- Soils are moderately disturbed; pre-drilling may be needed if compacted sublayers interfere with piling.
- Ground screws are preferred and have been integrated into the final design by Terrasmart. They may require additional pre-drilling and/or concrete footings as determined by the geotech report or varying soil conditions that the installer will encounter that may hinder the screw installation. An additional onsite pull-test and soil review is required by Terrasmart prior to final contracting or installation. Terrasmart has reviewed the geotech report and has included a 15% contingency in their proposed installation services contract for ground screws that will require additional drilling or foundations. See attached Terrasmart engineering for further details and considerations.
- If ballasted systems are chosen, surface leveling and compaction remediation will be required.

- Debris is not expected based on geotechnical results, but any discovered materials will be responsibly disposed of.
- Soil quality may benefit from organic amendments before seeding.

Trenching & Electrical Integration

- 480Y/277V commercial PV inverters will be installed individually on the ground mount racking system, with manual load break AC disconnects.
- Area 2 will host its own step-up transformer and 480Y/277V distribution panel that will serve as the PV array's AC generation combiner panel, within a secondary fenced equipment enclosure..
- Conductors will trench from this point to the convergence zone north of Area 3.
- Due to historic grading and undocumented irrigation infrastructure, trenching crews should exercise caution and potentially verify alignments manually.
- Directional boring is not expected to be viable.

Vegetation Management & Fire Safety

- The site will be hydroseeded with the universal low-height (≤12") mix designed for code compliance and resilience.
- During the first two years post-installation, vegetation will be actively managed for invasives and establishment success.
- Once the foundational groundcover is stable, additional pollinator-friendly plantings may be introduced to diversify the habitat.
- Deputy Fire Chief-approved setbacks and vertical clearances are incorporated into the design, including a maintained 20' fire lane with 13.5' vertical clearance.

Social, Visual & Educational Opportunities

Area 2 is among the most visible project zones, directly facing high-use student areas, athletic fields, and campus pathways. This creates strong potential for:

- Interpretive signage explaining dual-use land strategies and biodiversity benefits.
- QR code-enabled educational modules or live system dashboards.
- Course integration focused on public engagement, edge ecology, and infrastructure design.

Area 3: Research & Demonstration Zone

Physical Description

Area 3 is located north of the Red Barn and east of the university's facilities yard. Slightly set apart from the academic and recreation cores, this zone is defined by its moderate slope, adjacency to mature trees on the northern edge, and open terrain to the south. Its relative quiet and isolation from high-traffic areas make it ideal for long-term experimentation, monitoring, and academic use. Two existing pole-mounted PV demonstration projects are installed at the north edge of Area 3

Land Use History

Historically used for agricultural purposes and equipment storage, Area 3 has transitioned into an unmanaged open space. While some fencing and tree planting define its periphery, most of the area is covered in a mix of grasses and forbs. Occasional mowing has maintained semi-open conditions, though succession and soil variability are evident across the site.

Ecological Potential

Area 3 presents a rare opportunity for controlled ecological enhancement and solar–ecology experimentation. Its isolation allows for variable treatments without high public exposure, and its proximity to naturalized vegetation increases the potential for edge and corridor biodiversity development. This is also the site where the widest variety of solar installation configurations will be deployed, including east, west, and south-facing racking systems, and possibly bifacial panels. As a result, this location is key for studying tradeoffs between ecological outcomes and energy yield through the study of the ground mount's three orientations and their annual shade patterns effects on the plant growth cycles.

Technical & Design Considerations

Access: Moderate. Accessed via a perimeter road; however, turnarounds and staging require coordination due to narrow approach paths and tree buffers.

Soil & Geotechnical Conditions

Associated Test Pits: TP-S25015-R through TP-S25015-T

Key Findings

- Topsoil depth ranges from 4 - 10 inches, underlain by loessic silts and clayey sands.
- Shallow basaltic bedrock encountered as close as 30 inches below surface in TP-S25015-R.
- Stratigraphy shows variability across short distances, with sloping profiles and moderate surface compaction.
- No construction debris observed; moisture content increases with depth, and upper layers are generally loose and friable.

Construction Implications

- Ground screws may not be recommended due to shallow refusal risk from bedrock and variable embedment resistance. Terrasmart will follow up with onsite pullout testing prior to commencing construction.
- Helical piers may be viable in deeper loess zones but require selective placement and verification of embedment depth.
- Ballasted or alternative racking systems may be trialed for research purposes, but would demand thorough slope management and grading.
- Careful layout and micro-siting are essential to avoid refusal zones and ensure stable foundations for all experimental racking types.

Operational Risks

- Uneven torque resistance during installation may result in misalignment or installation delays.
- Potential for erosion along sloped portions if vegetation is not quickly established and maintained.
- Long-term stability and vegetation success may vary due to microclimatic differences and soil depth variation under panels.

Site Preparation & Management

- Soil will be rototilled to a depth of 6 inches, followed by array installation and hydroseeding.
- A standard native hydroseed mix will be used across the site, designed to comply with fire safety requirements (≤12" vegetation height).

- Because this site has variable slope and shading, plant performance may vary — presenting research opportunities.
- Erosion control and micrograding will be critical at the upper and lower site boundaries.

Educational & Research Opportunities

Area 3 is envisioned as a long-term living lab for interdisciplinary collaboration, supporting:

- Comparative studies of east, west, and south-facing arrays, with emphasis on both ecological and energy performance tradeoffs.
- Field trials of soil amendments, groundcovers, and irrigation microstrategies under different shading conditions.
- Sensor-based monitoring of temperature, moisture, pollinator activity, and vegetation succession.
- Senior capstone projects, theses, or student-led experiments from biology, environmental science, engineering, and sustainability programs.
- Exploration of establishing beehives in collaboration with student groups and biology faculty, pending coordination with the Palouse Prairie Restoration team to assess risks to native pollinators.
- Exploration of installing Kestral and Blue Bird boxes to promote bird habitats, natural seed distribution methods, as well as to study and promote natural rodent control methods, as put forth by environmental consultants.
- The installation of small, ground-height predator/coyote gates that can be opened and closed will allow ground predator access to each fenced array location, as well as the ability to compare rodent control methods from coyotes to birds of preys in each location with defined access and nesting parameters. The predator/coyote gates have been included in each Area to allow for comparative studies on predator/prey interactions at similar sites.

System Integration & Site-Wide Considerations

Convergence Point & Tunnel Integration

Location and Function

The electrical convergence point for the EWU ecovoltaics system is located north of Area 3, serving as the aggregation hub for all solar energy produced by Arrays 1, 2, and 3. Each array delivers power independently to a local pad-mounted transformer and local disconnect, stepping up each array's 480Y/277V 3-Phase voltage to medium-voltage AC. These outputs are then routed via underground 200A conductors to the convergence point, where they are combined into a centralized disconnect cabinet/medium voltage switch.

From this cabinet, the unified conductor enters the EWU utility tunnel system, carrying the power approximately 0.75 miles to the Rozell Power Plant for final campus integration.

Tunnel Infrastructure

- The existing tunnel system travels under EWU's internal campus roads and serves as a major utility corridor, currently housing steam lines, water mains, and high-voltage electrical service.
- Preliminary routing assessments and as-built documentation confirm that the solar conductor installation can be completed with minimal disruption to existing services.

Electrical Design & Integration

- Each Area's combined 480Y/277V AC inverter output will be stepped-up to medium-voltage via dedicated transformers before being routed via 200A conductors, protected in conduits and encased in concrete per EWU construction standards.
- A centralized disconnect/switch and junction cabinet at the convergence point will be rated for full system load for safety isolation.
- By leveraging the existing tunnel system, the project avoids the need for extensive surface trenching back to the Rozell Plant, protecting pedestrian infrastructure and minimizing trenching and/or pavement repair costs.
- MW Engineers, the University's electrical engineering firm that has previously provided engineering services for the Rozell Plant, was contracted to engineer the PV arrays AC output interconnection route and methods from the individual PV inverters installed at each array to the interconnection into the Rozell Plant, ensuring compatibility with the university's current electrical distribution equipment and future expected changes that may occur with the expansion of the Rozell Plant in the coming years.

Design Advantages

- Comparatively cost-effectiveness routing utilizing pre-existing tunnels as compared to trenching, tunnelling or boring..
- Minimized ecological/campus disturbance through reduced surface disruption.
- Clear segmentation of upstream/downstream electrical components for safer maintenance.
- Full code compliance with fire safety, accessibility, and electrical standards.

Environmental & Ecological Constraints

Proximity to the Palouse Prairie Restoration Project (PPRP)

- Area 1 directly borders the ongoing PPRP, offering a rare opportunity to extend and support native habitat.
- However, this proximity demands care: soil disturbance, shading, or invasive species encroachment into the PPRP could undermine restoration efforts.
- Restoration leads (Dr. Rebecca Brown and Erin Endres) emphasize microclimate monitoring under panels and invasive species suppression as essential measures.

Existing Vegetation & Invasive Species Risk

- All three array zones are currently dominated by non-native grasses and weedy forbs.
- No intact native prairie remains at the three array zones.
- EWU staff identified priority invasive species:
  - Bromus tectorum (cheatgrass)
  - Cirsium arvense (Canada thistle
  - Convolvulus arvensis (bindweed)
- These species thrive in compacted or disturbed soil. Without an aggressive revegetation and management strategy, construction risks accelerating invasive spread.

Fire Safety & Vegetation Management

- Solar site vegetation must comply with fire safety regulations, which sometimes conflict with biodiversity goals.
- The City of Cheney's Deputy Fire Chief, Zachary J. Hedquist, was consulted throughout the pre-design and post-design process to ensure project compliance with both city and national fire code requirements, and allow for fast-tracked project approval.
- The Deputy Fire Chief has approved the conceptual layout, based on the following measures, which apply to Areas 1,2, and 3:
    - 20' fire access lanes/service roads to be installed and maintained at each array location that allow fire apparatus access pass-through and/or turnaround with no array location to extend greater than 200' from the fire access lanes to allow for fire fighting hose systems to extend to all individual PV arrays groundmounts as needed during an emergency.
    - A clear, brush-free area of 10' shall be required around the perimeter of the ground mounted arrays in zones where the 20' fire access lanes/service roads are not installed, to provide fire breaks from grass fires that may occur both on and offsite.
    - 13.5' vertical clearance for emergency vehicle access
    - Managed vegetation height at or under 12 inches is required to meet IFC 1205.5.1 codes for Ground Mounted Photovoltaic Panel Systems Vegetation Control, that states that "A non-combustible base of gravel or a maintained vegetative surface or a noncombustible base, approved by the fire code official, shall be installed and maintained under the photovoltaic arrays and associated electrical equipment installations.
    - A fire propagation review was completed by the Deputy Fire Chief taking into consideration grass mixes from 12" to 3', with a determination that a 12" grass height will allow flame heights to extend up to 5' above ground-level (4' above the grass height), requiring the leading/lower edge of each array to maintain a minimum of 5' of ground clearance.
    - The solar inverter, transformer and combiner equipment locations will be mounted on a concrete pad with 10' of clearance to minimize fire risk at all high-voltage equipment.
    - While not required for ground mounted PV arrays by the NEC code 690.12, this individual module-level rapid shut-down power optimizers have been proposed for installation on each solar module to minimize fire propagation if an event were to occur on an individual solar module, string of solar modules or array zone.
    - Additional "Solar Scrim" safety netting will be installed on the rear of each ground mount array to further limit access to high-voltage DC conductors, further reducing the potential for human or animal/rodent caused fire events.

- Restoration specialists must develop fire-compliant seed mixes and mowing regimes that also support ecological function, especially in Areas 2 and 3.
- In order to maintain the required 12” maximum grass height, while minimizing environment impacts from traditional gas-powered mowers, maintaining the site’s biodiversity development, and eliminating the requirements to use herbicides or or other potentially toxic methods, a contract with an animal grazing company or the use of solar powered mowers is recommended.
- Leshay Goat Rentals in the City of Cheney has previously contracted with the university to provide goat rentals for grazing services on campus. Leshay was consulted as to the PV array heights, the installation of the Solar-Scrim protective netting to limit access to the DC wiring/optimizers, and the potential for damage from the goats. No concerns were expressed and they were confident that their services could provide the needed 12” grass limitations if an annual/bi-annual contract was facilitated. The coyote predator gates could be closed during these services, both limiting predator access, and providing a secure location that does not require temporary fencing as is sometimes required when contracting with grazing services.
- Solar powered autonomous lawn mowers would provide fossil fuel free mowing and could be employed within each array location if preferred by the university over grazing services, but would be difficult to ensure full mowing of the entire site due to the multiple ground mount array mounting legs. The use of solar powered lawn mowers may not bring the project into compliance with the Deputy Fire Chiefs requirements for a maintained 12” grass height.

Soil-Plant-Panel Feedback

- The project will actively explore ecological interactions driven by ecovoltaic design in collaboration with Drs. Bastow and O'Quinn. Student-led research will focus on:
    - Native seed germination and survival under partial shading
    - Pollinator use patterns across shade gradients
    - Soil carbon accumulation, microbial diversity, and runoff dynamics
- Enabling these studies is not peripheral goal—they represent a core project objective and must inform vegetation planning/seed mix, array safety considerations and access points.

Tunnel & Access Routing Impacts

- Trenching for conduit runs and transformer pads has been designed to avoid prairie edges and sensitive drainages, but residual risks remain:
    - Sediment displacement during excavation
    - Temporary vegetation removal and revegetation cost
    - Accidental damage to buried irrigation or legacy infrastructure
- All trenching must be accompanied by site-specific erosion control, with pre-installation documentation of subsurface conditions where uncertainty exists.

Campus Integration & Regulatory Context

Land Ownership & Governance

The entire project footprint is situated on land owned by Eastern Washington University (EWU), which greatly simplifies internal coordination and eliminates the need for complex land-use negotiations or external easements. Site selection was a collaborative process involving EWU's Facilities, Sustainability, Biology, and Environmental Science departments. This cross-departmental coordination ensured that the selected sites would avoid conflict with future development zones, minimize disruptions to athletics and pedestrian corridors, and preserve long-term access for academic programming, research, and maintenance. As a publicly funded university project, the Washington State Department of Archaeology and Historic Preservation (DAHP) were consulted before any geotechnical test pits.

Educational Integration & Campus Access

A core goal of the ecovoltaic project is to serve as a living laboratory for student learning and faculty-led research. The solar arrays are intentionally designed to support experiential learning through secure, yet accessible, entry points for scheduled academic use. The sites will enable hands-on engagement in areas such as ecological fieldwork, solar energy systems monitoring, habitat restoration, and infrastructure maintenance training. Additionally, the array mounted DC systems, array mounted AC inverter and transformer locations, convergence point and utility tunnel systems, which houses the main distribution routing, may be used as teaching platforms for electrical engineering courses. However, due to safety considerations, any student access to the fenced array

locations and/or tunnel would require strict supervision and access protocols and approval of EWU facilities staff.

Visual Interface & Public Engagement

Despite being located away from the campus core, the solar arrays are still visible from several high-traffic areas, including the football field and adjacent pedestrian pathways (Area 2), as well as the corridor between the Red Barn and the Archives Building (Area 3). This visibility presents an opportunity for storytelling and educational outreach. Planned interpretive features include signage that highlights the dual-use nature of the ecovoltaic systems, as well as QR-code enabled dashboards that provide real-time performance data and ecological context. While visual screening is not currently planned, future landscape phases may consider berms or shrub buffers to enhance aesthetics or mitigate glare if needed.

Permitting & Oversight

Oversight responsibilities are primarily internal and regulatory, involving DAHP for archaeological clearance (already completed), the City of Cheney's Deputy Fire Chief for fire access and vegetation compliance (already pre-approved), and Avista and BPA for interconnection viability and potential future scalability (see attached pre-design meeting notes).

In the event that land disturbance exceeds regulatory thresholds, additional documentation, such as State Environmental Policy Act (SEPA) reviews or Stormwater Pollution Prevention Plans (SWPPP), may be required due to the extent of ground disturbance, especially in areas with sensitive drainage or erosion risk. A final SWPP cannot be determined until pull-out test and final groundscrew installation methods have been determined by Terrasmart at the time of contract signing.

City of Cheney Building Department Officials were present and consulted at early design meetings with university staff, and no permitting concerns and/or limitations were expressed. Building officials primarily focused on the need to see approval from the Deputy Fire Chief, who was consulted throughout the process, as they would be critical in the final approval for the City of Cheney.

Steve Marx, the Director of the City of Cheney Light Department, was consulted throughout the design process to ensure compliance with the Light Department requirements. As of June 2025, the Light Department does not have official applications and/or protocols for interconnecting PV arrays over 100 kW. Steve Marx, has provided initial verbal approvals of the project, with an acknowledgement that a formal application process and interconnection contract with Avista/BPA will not be completed until after the project has been funded and is formally submitted for approval.

Phased Expansion Potential

The design of the ecovoltaic system intentionally accommodates future growth aligned with EWU's campus-wide decarbonization and electrification goals. An open conduit pathway has been recommended between Area 3 and the Red Barn parking lot to support a potential solar carport installation. We recommend that all major electrical components at the convergence point, including transformers and distribution panels, are specified to handle at least a 30% increase in total photovoltaic capacity. Additionally, the existing utility tunnel system has the capacity to support additional conductor runs. This infrastructure foresight positions the university to scale the solar system in the future.

PV Conceptual Designs

General System Design and Equipment Notes

The conceptual design for the Eastern Washington University (EWU) Ecovoltaic project is a 1.45 MW (DC) ground-mounted photovoltaic system distributed across three on-campus sites. The system is designed to balance solar energy generation with ecological enhancement, safety compliance, and educational integration. A total of 2,500 bifacial Heliene, 144HC M10 NTYP SL, 580 watt solar modules are deployed across the three array zones.

Module support is provided by Terrasmart's Terraglide 2×10 fixed-tilt racking system, set at a 35° angle to maximize annual solar harvest in Eastern Washington's latitude while maintaining compatibility with bifacial albedo gains. The Terrasmart racking design is specified to meet local structural loading requirements, including wind, snow, and seismic conditions. Ground screws are the preferred foundation type, as they minimize ground disturbance and can lower installation costs. While geotech testing and drone land surveys have been completed by TD&H Engineers, and provided to Terrasmart for the initial design, their viability will need to be confirmed via on-site pullout tests conducted by Terrasmart before installation. Where subsurface conditions preclude screw installation, like in areas with heterogeneous fill or shallow bedrock, the design will transition to driven, drilled, or helical piles. Terrasmart has included a 15% contingency for alternative installation methods for a designated percentage of the ground-screws to encounter "refusal" based upon their review of the provided geotech report. Ballasted systems are a last-resort consideration due to ecological impact concerns.

All exposed wiring beneath and between arrays can be protected using SolarScrim, a UV-stable wire mesh product that provides protection against abrasion, animal intrusion, and mechanical damage. Use of SolarScrim is recommended, particularly in areas where grazing or student field activity may occur, although fencing alone may be sufficient for routine protection for electrical designs conforming to NEC 690.31 for wire security and exposure. The additional cost of SolarScrim should be considered against the use-case for the area in question, but has been assumed project-wide for the sake of budgeting. Each array is enclosed with 6-foot galvanized chain-link fencing with tension wire and includes multiple lockable standard personnel, predator (12"x12") and 20' vehicle access gates. Additional fencing will be provided around each array's transformer, AC combiner and disconnect location to limit access to all medium-voltage equipment by students when conducting fieldwork and grazing animals used to maintain the grass height. Fire access lanes and vertical clearances have been reviewed and approved by the City of Cheney Deputy Fire Chief.

The inverter configuration relies on multiple array-mounted commercial-scale, 100kW AC, SolarEdge 480Y/277V three-phase inverters offering module-level optimization and monitoring. Each 100 kW inverter will allow for up to (9) strings of 30+ solar modules per string in to the inverter's three DC inputs. Larger, centralized inverters could be considered for cost reduction, but would not offer the same module-level performance and safety features. Inverters are to be installed at multiple locations on rack-mounted systems at the end of each array to minimize the system's 400V DC wiring losses.

The inverters will be installed along a single end of each array location with dedicated local AC disconnects, allowing for a single trench to feed the 480Y/277V inverter outputs to the array dedicated pad-mounted AC generation/combiner distribution panel and transformer that step up the 480Y/277V AC voltage to medium-voltage (MV) levels for interconnection. Each transformer's output is routed via underground, concrete-encased conduit to a centralized AC convergence cabinet/switch located north of Area 3. From this hub, a unified MV feeder enters EWU's utility tunnel system, routed in rigid galvanized steel conduit approximately 0.75 miles to the Rozell Power Plant for interconnection into the campus electrical system. A combination of newly installed and existing conduits will be used to limit system installation costs.

System-wide performance monitoring is enabled through SolarEdge's integrated cloud-based platform. The monitoring solution provides real-time performance tracking via cellular telemetry and supports potential future development of student-accessible dashboards. Recommendations include evaluation of additional whole-site monitoring devices or weather stations (not included in project budget) to support academic and ecological analysis.

Array-Specific Design Summaries

Array 1 – Prairie Interface Zone

- **Module Count:** 1,480 x Heliene, 144HC M10 NTYP SL, 580 watt Bifacial Solar Modules
- **Total PV DC Capacity:** 858,400 kW DC
- **Orientation/Angle:** South-facing (azimuth 180°) at 35° tilt-angle
- **Mounting Systems:** 74 x Terrasmart Terraglide, 2x10, portrait orientation racking
- **Inverters:**
  - 5 × SolarEdge SE100KUS, 480Y/277V, 3-Phase Commercial Inverters
  - 2 × SolarEdge SE30KUS, 480Y/277V, 3-Phase Commercial Inverters
- **Total PV AC Capacity:** 560 kW AC at 480Y/277V, 3-Phase
- **Design Notes:** Subsurface testing indicates deep heterogeneous fill. Helical piers will be required to bypass loose material; ground screws are not viable in this area. The inverters are to be mounted at the northeast corners of the arrays, with a single trench along the east edge of the arrays to the transformer/combiner location. The medium-voltage transformer, required disconnects and the AC generation/combiner panels are located at the northeast corner of the array within a dedicated fenced zone, with trenching directed to the convergence cabinet north of Array 3.

Array 2 – Campus Edge Transition Zone

- **Module Count:** 540 x Heliene, 144HC M10 NTYP SL, 580 watt Bifacial Solar Modules
- **Total PV DC Capacity:** 313,200 kW DC
- **Orientation/Angle:** 27 x South-facing (azimuth 180°) at 35° tilt-angle
- **Mounting Systems:** 74 x Terrasmart Terraglide, 2x10, portrait orientation racking

- **Inverters:**
  - 2 × SolarEdge SE100KUS, 480Y/277V, 3-Phase Commercial Inverters
- **Total PV AC Capacity:** 200 kW AC at 480Y/277V, 3-Phase
- **Design Notes:** Geotechnical data supports the use of either ground screws or helical piers. Existing gravel access roads provide construction and maintenance logistics. Fencing, access points, and fire code compliance are confirmed. The inverters are to be mounted at the northeast corners of the arrays, with a single trench along the east edge of the arrays to the transformer/combiner location. The medium-voltage transformer, required disconnects and the AC generation/combiner panels are located at the northeast corner of the array within a dedicated fenced zone, with trenching directed to the convergence cabinet north of Array 3.

Array 3 – Research & Demonstration Zone

- **Module Count:** 480 x Heliene, 144HC M10 NTYP SL, 580 watt Bifacial Solar Modules
- **Total PV DC Capacity:** 278,400 kW DC
- **Orientation/Angle:** Mixed array orientations (9 x south, 6 x east, and 9 x west) at 35° tilt-angle
- **Mounting Systems:** 24 x Terrasmart Terraglide, 2x10, portrait orientation racking
- **Inverters:**
  - 1 × SolarEdge SE100KUS, 480Y/277V, 3-Phase Commercial Inverters
  - 2 × SolarEdge SE30KUS, 480Y/277V, 3-Phase Commercial Inverters
- **Total PV AC Capacity:** 160 kW AC at 480Y/277V, 3-Phase
- **Design Notes:** This array is specifically optimized for comparative research and ecological experimentation. Layout includes variable orientations to assess performance trade-offs and shading impacts. Subsurface conditions include shallow bedrock and moderate slope; foundations may require driven piles and careful layout. This site also has the highest potential for sensor-based monitoring and academic research integration. The inverters are to be mounted at the northwest corners of the arrays, with a single trench along the northwest edge of the arrays to the transformer/combiner location. The medium-voltage transformer, required disconnects and the AC generation/combiner panels are located at the north central side of the array (adjacent to existing pole-mounted solar demonstration project) within a dedicated fenced zone, with trenching directed a short distance to the convergence cabinet north of Array 3.

Component Selection

Component selections for the EWU ecovoltaic system have been made to balance performance, reliability, and integration with research and academic programming. While many system elements are described in the architectural layout section, this section summarizes rationale and recommendations for product selection, including considerations for alternate specifications and implementation.

Photovoltaic Modules

The system design assumes the use of Heliene, 144HC M10 NTYP SL, 580 watt Bifacial Solar Modules or a comparable bifacial alternative. These 580 watt monocrystalline, half-cell modules are well suited to ecovoltaic applications due to their enhanced rear-side gain potential and industry-standard warranty and degradation performance. Should procurement or pricing warrant, a module of similar power class and bifacial characteristics may be substituted without compromising design intent or energy output projections.

Inverter Systems

SolarEdge's three-phase commercial platform with integrated power optimizers was selected to support module-level visibility, fault isolation, and fire safety. This granular monitoring capability aligns with EWU's academic goals and enables real-time diagnostics that would not be possible with centralized inverters. While larger, non-optimized inverters could reduce capital costs, they would not support the educational and operational transparency prioritized in the current design.

Power Optimizers/Rapid Shutdown

Power optimizers and module-level rapid shutdown devices are not typically installed on ground-mounted PV arrays, as they are not required by the NEC 690 when a safety fence is the array construction. The Deputy Fire Chief requested the addition of these systems as part of his fire approval process to limit fire propagation and to enhance the safety of the installations sites. In addition to acting as rapid shutdown devices, the optimizers allow for module level remote monitoring that will further enhance the project's educational and research capabilities. SolarEdge S1201 2:1 optimizers were included in the project design. The S1201 is set to be replaced with the new C651U 1:1 optimizer in 2025 that may be substituted along with the most recent inverter model in the final design prior to permitting.

Monitoring and Controls

The system will be fully integrated with the SolarEdge monitoring platform, offering module-level telemetry from the power optimizers, and overall inverter-level and project-wide diagnostics. In addition to this core system, the feasibility team recommends the addition of a whole-site environmental monitoring station. This could include irradiance, temperature, and soil moisture sensors—particularly for the research-oriented Area 3. Such instrumentation would enhance the system's role in supporting coursework, ecological research, and public outreach.

Transformer Sizing and Electrical Capacity

Preliminary sizing for medium-voltage pad-mounted transformers has been established, with final specifications to be determined during electrical design. All step-up transformers are assumed to have thermal and impedance ratings compatible with their corresponding inverter loads, with upstream distribution infrastructure at the Rozell Power Plant sized to accommodate at least 30% future expansion. Future expansions of this project, or the installation of PV arrays at any location on the university campus will require coordination with the Cheney Light Department, Avista and the BPA, as there is a single metering/interconnection location on campus that results in any PV arrays having their AC output combined with the Ecovoltaic AC output when calculating array interconnection sizes. Projects over 1 MW may require additional multi-month load studies and/or reviews by the BPA and Avista. Additionally, the Ecovoltaic project's pre-approval was dependent upon the projects overall AC output being limited so as to not exceed the campus's current minimum electrical demand

levels, ensuring that no PV production is back-fed on to the Cheney Light Department's local grid. Transformer placement inside each array's fenced boundary supports both security and construction efficiency.

Wiring Protection and Operational Security

As noted in Section 1, the use of SolarScrim above-ground wire shielding is assumed for all arrays in initial budgeting, though it may be selectively omitted where fencing alone ensures code-compliant protection. Its inclusion is especially justified where animal grazing, active research, or regular student access is expected. This approach ensures compliance with NEC 690.31 while balancing cost and protection across the site.

Ground Mount Racking Systems

TerraSmart's TerraGlide was selected for the ground mount racking system due to a combination of design considerations that provides for the lowest cost per watt installation of the racking system and required groundscrews. TerraSmart has extensive manufacturing, design and installation experience with multi-megatt projects, including two 25 Megawatt Terraglide installations that are currently being installed. TerraSmart's system design included a sub-contract to provide turn-key installation services of their product by their dedicated, out-of-state installation team, ensuring proper installation techniques and the ability to provide onsite, immediate options for groundscrew refusals that may occur during the installation.

System Production Summary

The EWU ecovoltaic system is expected to produce approximately 1,816,099 kWh annually from its 1.45 MW DC of installed PV capacity, based on simulation outputs from Aurora Solar using the PVWatts v6 engine and NSRDB weather data for Cheney, WA. This production estimate accounts for a modeled 1.67% light-induced degradation (LID) loss, with total system degradation expected to follow industry norms of 0.5%–0.7% annually thereafter.

Array-Level Output Summary

- Array 1: 1,480 modules, 858,400 kW DC – **1,110,797 kWh/year**
  - Irradiance: 1,649 kWh/m2/year, **TSRF:** 96%
- Array 2: 540 modules, 313,200 kW DC – **375,986 kWh/year**
  - Irradiance: 1,634 kWh/m2/year, **TSRF:** 95%
- Array 3.1 (South-Facing): 180 modules, 104,400 kW DC – **135,408 kWh/year**
  - Irradiance: 1,656 kWh/m2/year, **TSRF:** 96%
- Array 3.2 (West-Facing): 180 modules, 104,400 kW DC – **106,956 kWh/year**
  - Irradiance: 1,255 kWh/m2/year, **TSRF:** 72%
- Array 3.3 (East-Facing): 120 modules, 69,600 kW DC – **86,952 kWh/year**
  - Irradiance: 1,300 kWh/m2/year, **TSRF:** 75%

The system's annual system losses is calculated at approximately 10.5%, consistent with fixed-tilt, bifacial installations in the region and accounting for inverter efficiency (98.5%), shading, soiling, 2% wiring losses, module mismatch, availability, and climate-adjusted irradiance levels.

The annual production offsets EWU's retail energy usage at approximately $0.043/kWh (City of Cheney "University" Rate Schedule), yielding an estimated $78,092 in annual utility savings, which is expected to escalate in line with electricity rates over the 25–30 year system life.

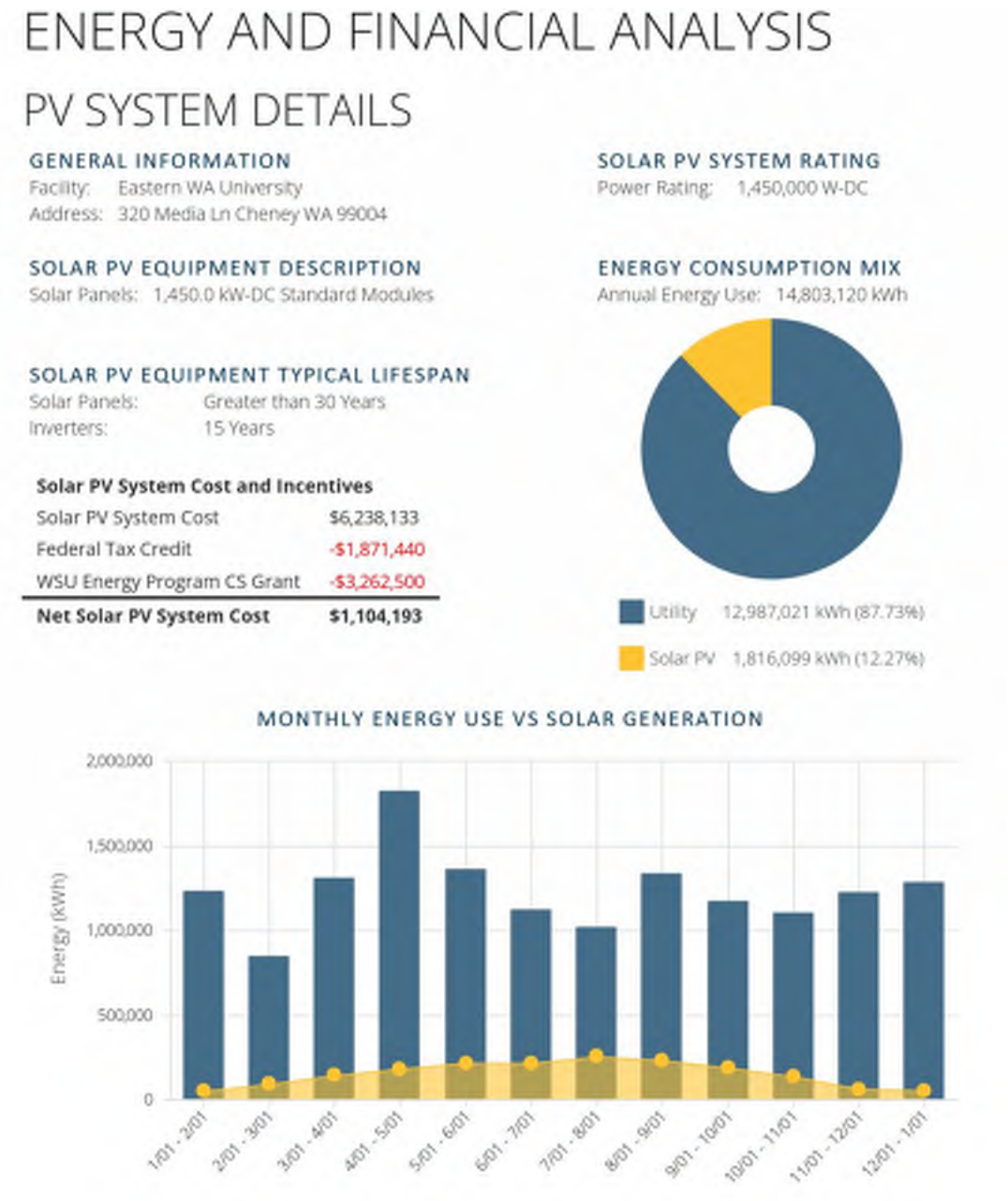
In addition to cost savings, the project is anticipated to avoid approximately 1,422 metric tons of CO2 emissions annually, based on ETB energy modeling from EPA eGRID data for the Northwest Power Pool region, supporting both EWU's climate goals and the Climate Commitment Act's broader decarbonization targets.

ROM Budget, Financial Analysis, & Risks

Total EWU Ecovoltaic PV Project - ROM COST SUMMARY	
Total Project Costs	**Cost Estimate**
Final Design/Engineering/Permitting	**$337,788.06**
Total PV and Electrical BOS Equipment Cost	**$1,931,021.74**
Electrical/PV System Installation Labor	**$675,576.12**
Project Management and Administrative Fees	**$146,374.83**
Civil/Site Preparation Services	**$236,451.64**
Subcontractors: Fencing, Racking, Groundscrew Installation, Site Prep	**$1,109,070.80**
Construction Overhead and Equipment Markup	**$1,125,960.20**
Project Sub Total	**$5,629,801.00**
Estimated Sales Tax at 8.6%	**$484,162.89**
Bid/Performance/Payment Bonds	**$124,168.38**
Total PV Project Cost ROM Estimate	**$6,238,132.27**

Additional Ecovoltaic Installation Services - ROM COST	
Ecocovoltaic Specific ROM Cost Estimates from Mike Terrell Landscape Architecture (Not Included in PV Section)	**Cost Estimate**
Soil Preparation - Tilling and Repair after Construction	**$65,185.00**
Hydroseeding	**$22,349.00**
Turf and Irrigation Repair (520 linear feet x 20' wide)	**$17,160.00**
Weed Control	**$74,498.00**
Native Pollinator Planting (1 plant for every 10')	**$93,122.00**
Total Additional Ecovoltaic Installation Services	**$272,315.70**

Additional Ecovoltaic Installation Service costs for planting, site preparation and ongoing maintenance are not included in the total PV construction budget, and should be considered as an addition to the institutional match or additional grant acquisition (if applicable). Per IRS tax guidelines, these expenses are not considered eligible property that are necessary for the installation or operation of the system.

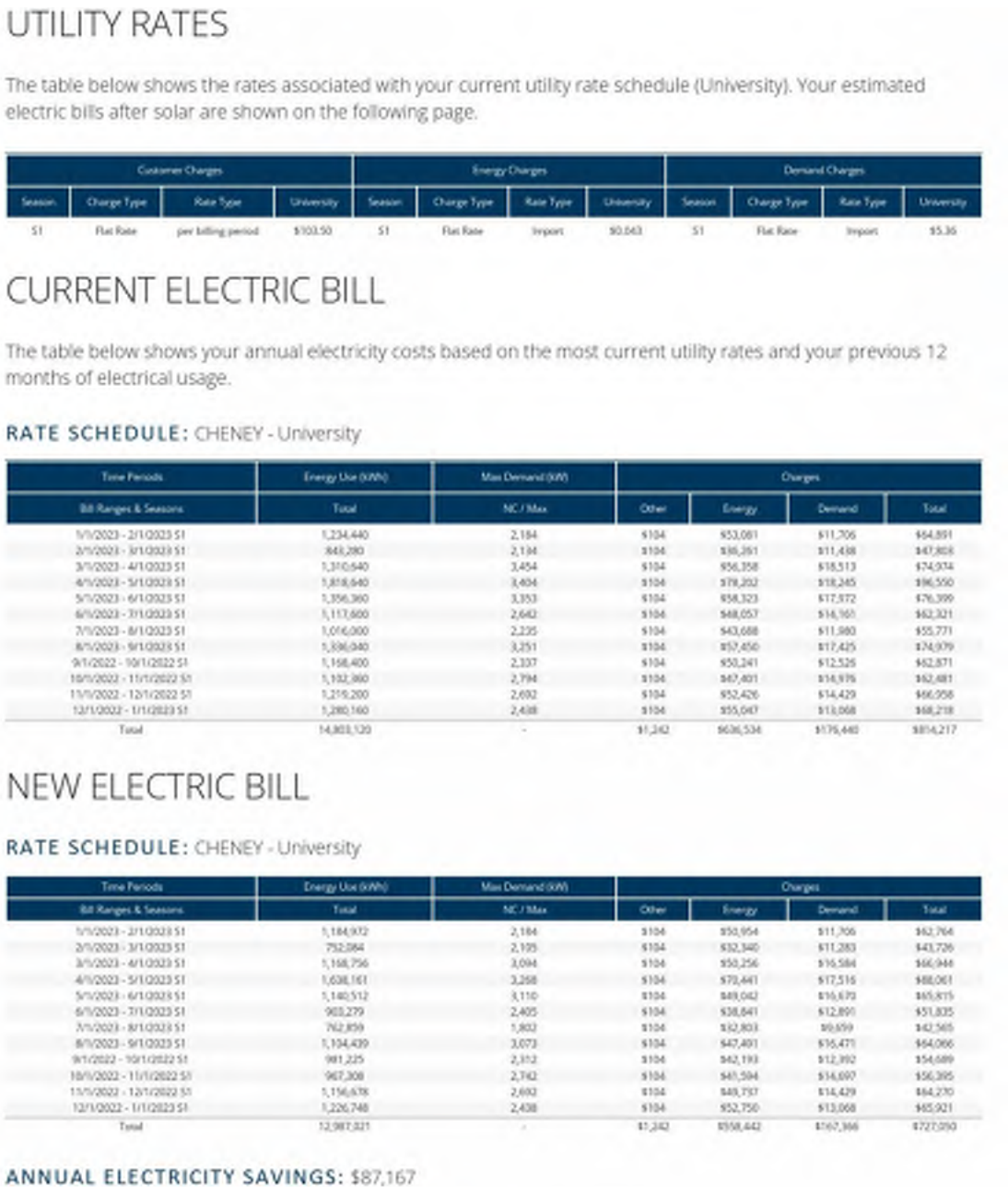


A comparison of the system's PV production compared to site consumption

The following multi-year pro forma cash flow analysis details projected capital expenditures (CAPEX), operating expenses (OPEX), anticipated revenues, system payback period, and internal rate of return (IRR). This financial modeling illustrates the economic viability and long-term financial benefits of the EWU Ecovoltaic project under current funding and operational assumptions.

Years	Project Costs	Electric Bill Savings	WSU Energy Program CS Grant	PV Generation (kWh)	Federal Tax Effect	Total Cash Flow	Cumulative Cash Flow
Upfront	-$6,238,133	-	-	-	-	-$6,238,133	-$6,238,133
1	-	$87,167	$3,262,500	1,816,099	$1,871,440	$5,221,107	-$1,017,026
2	-	$89,279	-	1,805,929	-	$89,279	-$927,747
3	-	$91,440	-	1,795,759	-	$91,440	-$836,308
4	-	$93,649	-	1,785,589	-	$93,649	-$742,658
5	-	$95,909	-	1,775,419	-	$95,909	-$646,749
6	-	$98,221	-	1,765,248	-	$98,221	-$548,528
7	-	$100,585	-	1,755,078	-	$100,585	-$447,944
8	-	$103,002	-	1,744,908	-	$103,002	-$344,942
9	-	$105,473	-	1,734,738	-	$105,473	-$239,469
10	-	$108,001	-	1,724,568	-	$108,001	-$131,468
11	-	$110,585	-	1,714,398	-	$110,585	-$20,883
12	-	$113,227	-	1,704,228	-	$113,227	$92,343
13	-	$115,927	-	1,694,057	-	$115,927	$208,271
14	-	$118,688	-	1,683,887	-	$118,688	$326,959
15	-	$121,511	-	1,673,717	-	$121,511	$448,470
16	-	$124,396	-	1,663,547	-	$124,396	$572,866
17	-	$127,344	-	1,653,377	-	$127,344	$700,210
18	-	$130,358	-	1,643,207	-	$130,358	$830,567
19	-	$133,437	-	1,633,036	-	$133,437	$964,005
20	-	$136,585	-	1,622,866	-	$136,585	$1,100,589
Totals:	-$6,238,133	$2,204,782	$3,262,500	34,389,655	$1,871,440	$1,100,589	-

A year-over-year cash flow summary for the proposed system and financing method



UTILITY RATES

The table below shows the rates associated with your current utility rate schedule (University). Your estimated electric bills after solar are shown on the following page.

Customer Charges				Energy Charges				Demand Charges			
Season	Charge Type	Rate Type	University	Season	Charge Type	Rate Type	University	Season	Charge Type	Rate Type	University
S1	Flat Rate	per billing period	$103.50	S1	Flat Rate	Import	$0.043	S1	Flat Rate	Import	$5.36

CURRENT ELECTRIC BILL

The table below shows your annual electricity costs based on the most current utility rates and your previous 12 months of electrical usage.

RATE SCHEDULE: CHENEY - University

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/1/2023 - 2/1/2023 S1	1,234,440	2,184	$104	$53,081	$11,706	$64,891
2/1/2023 - 3/1/2023 S1	843,280	2,134	$104	$36,261	$11,438	$47,803
3/1/2023 - 4/1/2023 S1	1,310,640	3,454	$104	$56,358	$18,513	$74,974
4/1/2023 - 5/1/2023 S1	1,818,640	3,404	$104	$78,202	$18,245	$96,550
5/1/2023 - 6/1/2023 S1	1,356,360	3,353	$104	$58,323	$17,972	$76,399
6/1/2023 - 7/1/2023 S1	1,117,600	2,642	$104	$48,057	$14,161	$62,321
7/1/2023 - 8/1/2023 S1	1,016,000	2,235	$104	$43,688	$11,980	$55,771
8/1/2023 - 9/1/2023 S1	1,336,040	3,251	$104	$57,450	$17,425	$74,979
9/1/2022 - 10/1/2022 S1	1,168,400	2,337	$104	$50,241	$12,526	$62,871
10/1/2022 - 11/1/2022 S1	1,132,360	2,794	$104	$47,401	$14,976	$62,481
11/1/2022 - 12/1/2022 S1	1,219,200	2,692	$104	$52,426	$14,429	$66,958
12/1/2022 - 1/1/2023 S1	1,280,160	2,438	$104	$55,047	$13,068	$68,218
Total	14,803,120	-	$1,242	$636,534	$179,440	$814,217

NEW ELECTRIC BILL

RATE SCHEDULE: CHENEY - University

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/1/2023 - 2/1/2023 S1	1,184,972	2,184	$104	$50,954	$11,706	$62,764
2/1/2023 - 3/1/2023 S1	752,984	2,135	$104	$32,340	$11,283	$43,726
3/1/2023 - 4/1/2023 S1	1,168,756	3,094	$104	$50,256	$16,584	$66,944
4/1/2023 - 5/1/2023 S1	1,638,161	3,268	$104	$70,441	$17,516	$88,061
5/1/2023 - 6/1/2023 S1	1,140,512	3,110	$104	$49,042	$16,670	$65,815
6/1/2023 - 7/1/2023 S1	903,279	2,405	$104	$38,841	$12,891	$51,835
7/1/2023 - 8/1/2023 S1	762,959	1,802	$104	$32,803	$9,659	$42,565
8/1/2023 - 9/1/2023 S1	1,104,439	3,073	$104	$47,491	$16,471	$64,066
9/1/2022 - 10/1/2022 S1	981,225	2,312	$104	$42,193	$12,392	$54,689
10/1/2022 - 11/1/2022 S1	967,308	2,742	$104	$41,594	$14,697	$56,395
11/1/2022 - 12/1/2022 S1	1,156,678	2,692	$104	$49,737	$14,429	$64,270
12/1/2022 - 1/1/2023 S1	1,226,748	2,438	$104	$52,750	$13,068	$65,921
Total	12,987,021	-	$1,242	$558,642	$167,366	$727,050

ANNUAL ELECTRICITY SAVINGS: $87,167

Left: a month-by-month example of the bill reduction provided by the system

The financial strategy for the EWU Ecovoltaic project is structured to leverage available state and federal incentives to maximize project affordability and long-term financial benefit to EWU and its community stakeholders. Key funding assumptions include:

- A 30% federal Investment Tax Credit (ITC), accessed via the direct pay provision available to eligible tax-exempt entities, is assumed. This direct payment would provide approximately $1.871 million toward total project costs.
- Washington State University's (WSU) Energy Program Community Solar funding is expected, capped at $2.25 per watt of installed capacity, totaling approximately $3.2 million.
- A funding shortfall of approximately $1.1 million remains after accounting for ITC and WSU incentives. EWU or its partners may seek additional grant funding through programs such as the Washington State Clean Energy Fund (e.g.,

EPIC), philanthropic sources, or institutional matching funds to bridge this gap.

- Due to the nature of EWU's campus load, no electricity export to the Cheney Public Utility District (PUD) is anticipated. Additional load studies may be required at the time of utility permitting to ensure that no PV export occurs. The final interconnection agreements, rate structures and export limits will be formally developed and contracted with the Cheney Light Department once the project has been funded for construction. An interval analysis confirms that on-campus consumption will consistently exceed production, thus avoiding complications of wholesale energy export.
- Electricity cost savings are conservatively projected to escalate at a rate of 3% per year, reflecting historical trends and utility rate inflation assumptions. Actual savings may be higher if energy price escalation exceeds this conservative forecast.

Key Project Risks

Several critical risks have been identified that could impact project viability, timelines, or cost structure:

- **Permitting Risk:** While preliminary engagement with Cheney's AHJs indicates broad support and no significant barriers, the formal permitting processes—particularly fire safety compliance and environmental approvals (e.g., SWPPP)—could introduce unexpected delays or additional requirements.
- **Funding Risk:** The reliance on both federal and state incentive programs introduces vulnerability to legislative or policy changes, particularly uncertainty regarding the long-term viability of the federal direct-pay ITC provision and WSU community solar program budget availability.
- **Interconnection Risk:** Interconnection to Cheney PUD's medium-voltage distribution system involves technical and administrative complexities. Preliminary discussions indicate general alignment, but formal agreements and detailed technical reviews by Avista, BPA, and Cheney PUD could uncover unforeseen barriers or additional upgrade costs.
- **Ecological Performance Risk:** The dual-use design introduces ecological uncertainty around vegetation establishment, invasive species management, and habitat functionality under panel shading conditions. If the ecovoltaic model fails to meet restoration and ecological objectives, the project may require additional ecological interventions or operational adjustments, adding potential ongoing costs.
- **Geopolitical Events:** Geopolitical events can impact supply chains, project financing, and the overall project feasibility. Disruption in material or equipment delivery, increased costs, and tariffs may result in project delays or cancellation.

Risk Mitigation Strategies

To proactively address these risks, EWU and its consulting team have identified several strategies:

- **Stakeholder Support:** Continued robust engagement with EWU stakeholders, AHJs, Cheney PUD, Avista, and BPA ensures early identification and resolution of permitting or interconnection issues. Regular stakeholder

check-ins and workshops during detailed engineering and construction phases will help maintain alignment and promptly address concerns.

- **Engineering Strategies:** Comprehensive geotechnical assessments, have been incorporated into project planning to mitigate installation risks associated with heterogeneous subsurface conditions. A 15% installation contingency has been incorporated into the project ROM budget to allow for ground screw “refusal” in up to 15% of the array locations. Additional contingency is recommended to be included in any project funding requests, if the TerraSmart required onsite ground-screw pullout test is not contracted and completed prior to the funding request. The use of robust SolarEdge module-level optimization and monitoring reduces performance risk by facilitating early detection and response to operational issues.
- **Pilot and Adaptive Management:** Area 3, the designated Research and Demonstration Zone, provides a controlled environment to test vegetation management, habitat establishment, and ecological performance. Lessons learned from pilot-area studies will inform ongoing adaptive management across the full site, ensuring ecological co-benefits are achieved while minimizing the risk of costly ecological or operational remediation.

This structured approach to funding leverage, risk assessment, and mitigation planning positions EWU to successfully navigate uncertainties, maximize financial and ecological benefits, and ensure alignment with its strategic goals for sustainability, resilience, and educational excellence.

Community Solar Participation and Ownership Strategy

Legislative Context for Community Solar in Washington

The EWU Ecovoltaic project is structured to align with Washington State’s evolving community solar policy landscape, particularly as shaped by the Low-Income Community Solar Incentive Program (RCW 82.16.183), established by HB 1814 (2022). This statute enabled the Washington State University Energy Program to administer community solar funding with a focus on low-income beneficiaries and nonprofit administration.

This program framework directly informs the project team’s pursuit of a single-subscriber model, in which the EWU Foundation administers a low-income scholarship fund as the designated subscriber.

Over the past three years, additional legislative proposals sought to expand the scalability and accessibility of community solar by addressing structural challenges such as third-party access, credit valuation, and consumer protections. Notably:

- **SB 6113 (2024) and SB 5634 (2025)** proposed enabling third-party developers to deliver on-bill credits and define

equitable compensation mechanisms, but both stalled in committee.

- **SB 1804 (2025)** proposed a utility-administered crediting mechanism and permitted PPAs under HB 1814, but lacked sufficient support among community solar and equity advocates.

These efforts reflect a broader tension between enabling third-party market participation and maintaining utility control over billing infrastructure. While HB 1814 successfully launched a pathway for low-income solar projects, the absence of enabling legislation for on-bill crediting and standardized third-party valuation continues to limit broader market transformation in Washington State.

The EWU Ecovoltaic project represents a model tailored to existing statutory constraints, using campus load replacement and retail energy savings (rather than crediting) with nonprofit administration to maintain compliance. This model is particularly well suited to public institutions seeking to leverage community solar resources for educational or programmatic infrastructure while awaiting further legislative progress on more flexible and scalable policy tools.

Internal Stakeholder Engagement and Model Selection

Throughout the feasibility phase, project leads engaged key Eastern Washington University (EWU) stakeholders to explore viable ownership and incentive structures that would maximize community benefit while aligning with the university's sustainability, educational, and equity goals.

Key engagements included:

- **Sustainability and Facilities staff** (including Erik Budsberg) to assess operational feasibility and compatibility with the campus decarbonization strategy.
- **EWU Foundation leadership** expressed interest in administering scholarship funds tied to the solar project's energy output.
- **Faculty members** in Biology and Environmental Science underscored the project's educational potential and public benefit.
- **Finance and Procurement staff** who reviewed university ownership and interconnection responsibilities.

Based on these conversations, the project team identified Washington State's Low-Income Community Solar Incentive Program (RCW 82.16.183) as the funding mechanism to deliver long-term energy and equity benefits from the installation. The stakeholder's agreed to pursuing a single-subscriber model, with the EWU Foundation administering a means-tested scholarship fund for low-income students.

Proposed Ownership and Incentive Structure (Unconfirmed)

Several ownership models could be considered for the EWU Ecovoltaic system. These include long-term third-party ownership, a short-term third-party structure with a pre-negotiated buyout by EWU at depreciated cost, and full ownership by EWU from the outset. The system owner would assume responsibility for system operations, maintenance, and regulatory compliance. Regardless of the selected model, Eastern Washington University would be the interconnection customer. All electricity generated by the arrays would offset EWU's

retail electricity consumption, yielding long-term savings on utility expenditures.

To align with Washington State's Low-Income Community Solar Incentive Program (RCW 82.16.183), the project team has proposed a single-subscriber model, with the EWU Foundation—a 501(c)(3) nonprofit affiliated with the university—serving as the project administrator. The Foundation would manage a new scholarship fund designated for low-income students, thereby meeting the program's equity and single-subscriber criteria. The monetary value of all energy savings to EWU would be passed on to the EWU Foundation to fund this new scholarship program.

The proposed financial incentive pathway involves a tri-party arrangement designed to navigate statutory limitations on public utility tax (PUT) credits. Cheney Public Utility District (PUD), the utility serving the EWU campus, is a consumer-owned utility (COU) and lacks the tax liability required to claim the PUT credit directly. To address this, the project proposes the following structure:

Avista, an investor-owned utility (IOU) and the regional balancing authority, would apply for and receive the PUT credit. Avista would then transfer the monetary value of that credit to Cheney PUD. Cheney PUD would, in turn, issue the one-time community solar incentive payment to the EWU Foundation, as stipulated under RCW 82.16.183. The Foundation would use the funds to partially or fully reimburse the construction cost of the ecovoltaic system.

This configuration aims to remain fully compliant with state incentive guidelines while addressing the structural limitations of Cheney PUD's tax status. Preliminary discussions with all parties, including Avista, Cheney PUD, and EWU Foundation representatives, indicate broad support for this approach.

However, formal approval is still pending from the Washington State Department of Revenue (DOR) and the Washington State University Energy Program, which serves as the program's pre-certification administrator.

Feasibility and Risks

While the proposed ownership and incentive structure for the EWU Ecovoltaic project presents a promising pathway for aligning clean energy deployment with educational equity, several critical uncertainties remain unresolved at this stage.

First, there is an open question regarding the legal interpretation of RCW 82.16.183. The statute requires the utility serving the project site—in this case, Cheney PUD—to remit the incentive payment. However, it is not explicitly clear whether that same utility must also be the entity that applies for or benefits from the associated public utility tax (PUT) credit. Clarification from the Washington State Department of Revenue (DOR) may be required to confirm whether a third-party entity, such as Avista, can validly claim the credit and transfer its value to Cheney PUD without violating statutory intent.

Second, the project has not yet applied for pre-certification under the state's Low-Income Community Solar Incentive Program. The pre-certification process, administered by the Washington State University Energy Program, is a critical milestone that ensures eligibility for the incentive. Submission is anticipated in the third quarter of 2026, aligned with the completion of final engineering and site readiness.

Third, the anticipated incentive payment is unlikely to cover the full capital cost of the ecovoltaic system. As such, supplemental funding from EWU, the EWU Foundation, or other grant sources will be necessary to close the financing gap. These contributions will need to be carefully structured to avoid creating "in-kind" financial transfers that might disqualify the scholarship fund from receiving the full benefit of the incentive under RCW 82.16.183. One promising pathway for closing the funding gap is the federal Investment Tax Credit (ITC) direct pay provision, which allows eligible tax-exempt entities to receive the credit as a refundable payment. However, the long-term viability of this provision is uncertain and may be affected by current negotiations in the federal budget reconciliation process. Clarity on the availability of direct pay is expected prior to the project's pre-certification submission and will be a key factor in finalizing the project's financial structure.

Lastly, the tri-party agreement between EWU, Avista, and Cheney PUD introduces administrative complexity. This arrangement requires coordinated legal, financial, and technical commitments from all parties. Any misalignment in roles, delays in agreement execution, or regulatory setbacks could jeopardize access to the incentive and delay project implementation.

Procurement Strategy

Eastern Washington University (EWU) has multiple viable pathways for financing and owning the proposed Ecovoltaic solar system. Each model offers distinct trade-offs in terms of up-front capital, long-term ownership, risk allocation, and access to federal or state incentives. The following options are presented as frameworks for discussion, with further refinement and due diligence recommended prior to selection.

1. Capital Investment (Direct Ownership)

In this traditional model, EWU funds and owns the system outright using institutional capital, grants, or philanthropic support. This approach provides maximum control over the system's design and educational integration while ensuring all operational savings and incentives benefit the university or its

affiliates. However, it requires full upfront investment and internal management of long-term operations and maintenance.

2. Financing Bridge Loans

EWU could use short-term financing to cover construction costs while awaiting disbursement of incentives like the Community Solar rebate or federal tax credits. This approach retains ownership while reducing early capital strain but introduces cash flow and interest cost considerations.

3. Third-Party Ownership Models

Several structures enable a private partner to finance and temporarily own the system, transferring benefits to EWU in exchange for tax credit monetization:

- **Energy-as-a-Service (EaaS):** A service contract where EWU pays a fixed monthly fee for solar energy, without owning the asset.
- **Power Purchase Agreement (PPA):** EWU buys electricity at a negotiated rate per kWh under a long-term contract.
- **Partnership Flip or Inverted Lease:** Complex structures where a third-party tax investor temporarily owns the system, captures federal incentives, and eventually transfers ownership to EWU.

These models reduce up-front costs and transfer operational risk, but may offer less educational integration, lower long term savings, and require robust legal oversight.

4. Lease-to-Own with Energy Value Pass-Through (Developer Yield Model)

Cascadia Renewables recommends exploring a hybrid model tailored to EWU's mission and financial goals. Under this approach:

- A third-party developer funds and owns the system for a limited term (e.g., 5 years), taking advantage of the ITC, depreciation and WSU funding via EWU Foundtaion.
- EWU provides land access, and in return, receives 100% of the energy benefit at no cost during the initial term.
- The value of this energy (estimated at $54,000+ annually) supports low-income scholarships or offsets university operating costs.
- After 5 years, EWU purchases the system at a pre-agreed depreciated price that reflects the developer's targeted return after accounting for tax credits and incentives.

This model maximizes early energy benefit, limits financial exposure, and provides a clear path to eventual public ownership—all while maintaining alignment with IRS and state community solar compliance requirements.

Recommendation

Several key actions are recommended to advance the EWU Ecovoltaic project from feasibility to implementation. The Eastern Washington University Foundation should formally confirm its willingness to be the project administrator. This includes committing to setting up a dedicated, means-tested scholarship fund to serve low-income students, thereby fulfilling the equity requirements of the state's community solar incentive program.

EWU should secure written confirmation from Cheney PUD agreeing to remit the one-time community solar incentive payment in accordance with RCW 82.16.183. Given Cheney PUD's role as the site-serving utility, their cooperation is essential to maintain program eligibility. Concurrently, the project team should formally engage Avista to confirm their willingness to apply for and receive the Public Utility Tax (PUT) credit on behalf of the project. This agreement should also outline the mechanism by which Avista will transfer the value of the credit to Cheney PUD, enabling the PUD to pass the full incentive amount to the EWU Foundation.

Once all parties confirm participation, a tri-party legal agreement should be developed between Avista, Cheney PUD, and the EWU Foundation. This agreement should clearly delineate financial responsibilities, administrative duties, and compliance measures across all three parties.

With that agreement in hand, EWU and its partners can prepare a complete pre-certification package for submission to the Washington State University Energy Program. This package will include site designs, ownership documentation, and program compliance materials, timed to coincide with final design completion and stakeholder alignment in the third quarter of 2026.

An important component of this application will be the development of a supplemental funding strategy to cover costs not met by the community solar incentive. This strategy should prioritize external grants or institutional contributions structured to preserve full eligibility for the low-income scholarship fund without triggering disqualifying in-kind benefits.

Finally, the team should produce a set of public communications materials that explain the scholarship structure, articulate the project's student benefits, and reinforce compliance with all state incentive goals. These materials will serve to support transparency, community engagement, and institutional buy-in as the project progresses toward implementation.

Next Steps

To transition the EWU Ecovoltaic project from feasibility to implementation, we recommend a coordinated set of actions to align governance, technical design, and incentive program compliance prior to construction. These steps are structured to maintain project momentum while positioning EWU for a successful funding and construction process.

1. **Review Feasibility Study with University Leadership**
   Before proceeding, EWU should review this feasibility study with institutional leadership to confirm alignment on the project's dual-purpose design intent, as both an energy-generating system and a campus-based research and education platform. This review should also verify institutional support for the proposed community solar model, including the role of the EWU Foundation and the structure of the scholarship subscriber mechanism.
2. **Confirm Administrative Structure**
   EWU should formally establish the EWU Foundation as the project administrator and prepare to set up a dedicated, means-tested scholarship fund to serve as the sole subscriber. This step is essential for compliance with Washington's Community Solar statute (RCW 82.16.183) and ensures that financial benefits will be equitably distributed.
3. **Secure Utility Commitments**
   EWU and its consultants should secure formal agreements from Cheney Public Utility District (to act as the incentive remittance utility) and Avista Utilities (to apply for the Public Utility Tax credit and transfer its value to Cheney PUD). These agreements form the basis of a compliant tri-party financing model.
4. **Negotiate Tri-Party Incentive Agreement**
   A formal agreement should be drafted between the EWU Foundation, Cheney PUD, and Avista to define roles, financial flows, and compliance responsibilities. This agreement will enable the project to access the community solar incentive and ensure administrative transparency.
5. **Prepare Pre-Certification Package**
   Once the utility agreements and design documents are in place, EWU and its consultants should compile the materials needed for pre-certification with the WSU Energy Program. Cascadia Renewables recommends a target submission in Q3 2026.
6. **Finalize Site Design and Engineering**
   Engineering teams should build on geotest results and complete pullout analysis and final electrical design, ensuring compatibility with EWU's medium-voltage loop and utility tunnel system.
7. **Evaluate Ownership, Funding, and Procurement Strategies**
   Cascadia Renewables recommends that EWU evaluate alternative ownership models, financing pathways, and procurement strategies (e.g., energy as a service, partnership-flip, inverted lease). This assessment should balance institutional risk, long-term operational goals, and eligibility for state and federal funding programs.

8. Pursue Supplemental Funding
To close the estimated $1.1 million funding gap, EWU should seek external grants, institutional match contributions, and philanthropic support. Cascadia Renewables will monitor developments in federal tax credit policy, especially regarding the 30% direct pay Investment Tax Credit, which could materially reduce capital costs.

9. Establish Operations and Maintenance Framework
EWU should develop a long-term O&M plan that defines responsibilities for vegetation management, system performance tracking, and equipment servicing. Third-party or internal management options should be evaluated based on cost, capacity, and reliability.

10. Develop Educational and Outreach Materials
Finally, EWU should prepare public-facing materials to highlight the project's educational, environmental, and equity value. This includes real-time dashboards, interpretive signage, and outreach strategies that showcase the project as a living laboratory and a pillar of EWU's climate leadership.