



CWU 2022 Supplemental Capital Budget Request

September 13th , 2021

Washington State Office of Financial Management
302 Sid Snyder Ave SW / Mailstop 43113
Olympia, WA 98501-1342

RE: CWU 2022 Capital Budget Outline

This letter transmits the Central Washington University (CWU) Capital Budget Request for the 2022 Supplemental biennium. This request was developed in support of the university's strategic plan, that prioritizes the immediate needs that supports the growth, engagement, and education of the student body of CWU.

Electrical Grid Security

Central Washington University seeks funding to secure unstable electrical cabling that supports service to 13 highly trafficked academic and residential facilities with a new feeder line. The poor state of the cable and lack of redundancy makes this northern area of the Ellensburg campus vulnerable to a catastrophic electrical outage. This project eliminates the risk of a major outage causing extensive damage and costly repairs.

Identify the problem or opportunity addressed. Why is the request a priority?

After a major power outage in May 2021, CWU determined that two feeder lines are vulnerable to a catastrophic electrical outage. There are no redundant lines, so failure would result in loss of power to all the facilities relying on them. If facilities lost power in late fall, winter, or early spring, loss of heating and air distribution in the buildings could produce cascading damages as water lines freeze, burst and cause flooding to the buildings. The power outages also disrupt teaching and learning and result in property loss. During the May power outage, thousands of dollars of food had to be discarded as the refrigerators and freezers in the Dugmore dining hall lost power.

A second issue is that the density of cabling and presence of feeder splices in the existing electrical vaults complicate the process of diagnosing problems and repairing them. Repair is treacherous, however, due to the cable density and splices.

This request is a priority because, according to MW Engineers, the cabling that feeds all the buildings on the north end of campus are at or near the end of useful service life. The outage that occurred last May provided insight into how devastating another one could be, especially if it were to occur in the late fall or winter.

This project ensures that CWU will not have to spend thousands or possibly multiple millions of state dollars for repairs caused by a catastrophic outage. In February 2021, Barge Hall suffered a burst water line that was caused by freezing temperatures. The water damage to the building caused over \$1 million in repairs. The feeder lines that are vulnerable to outages are responsible for the electricity in 13 facilities. If an extended outage in the late fall or winter were to cause water lines to fail in multiple buildings, damages would be costly.

What will the request produce or construct (i.e., building predesign or design, construction of additional space, etc.)? When will the project start and be completed?

Per the recommendation of MW Engineers, CWU proposes to reroute and expand another feeder line around the areas currently served by the two problematic feeder lines. This would provide redundancy (backup) power so that if an outage were to occur, all the buildings could be energized within minutes. This upgrade provides safety and protection for the buildings and removes the urgency in repairing the outage, which could be complicated and lengthy. This proposed project is a single, stand-alone project that should not be phased. If the entire scope of work is not completed, then the new feeder line is useless. Assuming spending authority effective on July 1, 2022, CWU could award a contract in the fall and complete the work by spring 2023.

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 add redundancy to the existing feeder lines, thereby connecting 13 facilities to a secondary feeder. If an outage occurs on the main feeder line, the buildings could be switched to the new one and have power restored within minutes.

The result of not taking action is that the buildings on the two old feeder lines are vulnerable to a catastrophic outage that could cause multiple millions of dollars' worth of damage to buildings, materials and personal and public property, as well as disrupting teaching, learning, and the housing for 610 students.

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

The only alternative to this proposal would be to replace the two old feeders with new cabling. However, that would cost more money, would not provide redundancy, and would require extended power outages mitigated only by temporary power sources. The proposed project submitted would have no interruption in power supply, provide reliable redundancy and cost the state less money. The old feeder lines eventually will have to be replaced, but it is better to add the redundancy now and replace the existing feeders in the future.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

The facilities powered by the two feeder lines serve 11 academic programs, student housing and athletics programs. On a busy day during the academic year, upwards of 3,000 students and university employees could be affected by a major power outage. Over the course of a day, the majority of all CWU students might be scheduled for a class in one or more of the affected buildings. Additionally, the residential facilities served by the feeders have capacity to house 610 students. With impacts of this magnitude, an extended outage will likely impact every single member of the CWU community in some way. For students nearing graduation and whose majors are based in the affected buildings, an extended outage could have detrimental impacts on their progress toward graduation.



Will non-state funds be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local, or private funds?

No

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 CWU Capital Master Plan by reducing deferred maintenance and proactively solving a problem before a critical failure occurs; doing so protects the integrity of operations and avoids repair costs. This project supports every aspect of CWU's Strategic Plan because electricity is vital for every single university function. Without power, there are no lights, computers, or heat; everything stops. These two feeder lines serve a large section of campus and an interruption would affect thousands of people and prevent them from teaching, learning, researching, and working.

Does this project include IT-related costs, including hardware, software, cloud-based services, contracts or IT staff? If yes, [IT Addendum](#)

No

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy use? If yes, please elaborate.

Yes, because this project is a necessary upgrade to preserve and enhance electrical distribution on-campus. If the CWU campus is to someday have zero reliance on fossil fuels, the reliability and strength of electrical distribution is paramount.

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?

CWU is the most diverse public four-year university in Washington. For fall 2020, 40 percent of enrollees were students of color. Along with increasing the number of students of color, CWU has expanded strategies for keeping students enrolled and on-track to graduate. CWU's efforts to support student success has earned six Higher Education Excellence in Diversity Awards from INSIGHT Into Diversity magazine over the last seven years. CWU is the only institution in the state that can boast this record of achievement. This project ensures that these students will not have their academic pursuits disrupted by not having electricity in the classrooms, labs, and student housing.

Regards,

Delano Palmer

Director of Capital Planning and Projects
Central Washington University



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375 - Central Washington University Capital Project Request

2021-23 Biennium

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Version: 2A 2021-2023 First Year Supplemental

Report Number: CBS002

Date Run: 9/13/2021 3:35PM

Project Number: 40000121

Project Title: Electrical Grid Security

Description

Project Phase Title: 2021-2023 First Year Supplemental Working Version

Starting Fiscal Year: 2023

Project Class: Preservation

Agency Priority: 0

Project Summary

CWU seeks funding to secure unstable electrical cabling that supports service to 13 highly trafficked academic and residential facilities with a new feeder line. The poor state of the cable and lack of redundancy makes this northern area of the Ellensburg campus vulnerable to a catastrophic electrical outage. This project eliminates the risk of a major outage causing extensive damage and costly repairs.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? After a major power outage in May 2021, CWU determined that two feeder lines are vulnerable to a catastrophic electrical outage. There are no redundant lines, so failure would result in loss of power to all the facilities relying on them. If facilities lost power in late fall, winter, or early spring, loss of heating and air distribution in the buildings could produce cascading damages as water lines freeze, burst and cause flooding to the buildings. The power outages also disrupt teaching and learning and result in property loss. During the May power outage, thousands of dollars of food had to be discarded as the refrigerators and freezers in the Dugmore dining hall lost power. A second issue is that the density of cabling and presence of feeder splices in the existing electrical vaults complicate the process of diagnosing problems and repairing them. Repair is treacherous, however, due to the cable density and splices. This request is a priority because, according to MW Engineers, the cabling that feeds all the buildings on the north end of campus are at or near the end of useful service life. The outage that occurred last May provided insight into how devastating another one could be, especially if it were to occur in the late fall or winter. This project ensures that CWU will not have to spend thousands or possibly multiple millions of state dollars for repairs caused by a catastrophic outage. In February 2021, Barge Hall suffered a burst water line that was caused by freezing temperatures. The water damage to the building caused over \$1 million in repairs. The feeder lines that are vulnerable to outages are responsible for the electricity in 13 facilities. If an extended outage in the late fall or winter were to cause water lines to fail in multiple buildings, damages would be costly. What will the request produce or construct (i.e., building predesign or design, construction of additional space, etc.)? When will the project start and be completed? Per the recommendation of MW Engineers, CWU proposes to reroute and expand another feeder line around the areas currently served by the two problematic feeder lines. This would provide redundancy (backup) power so that if an outage were to occur, all the buildings could be energized within minutes. This upgrade provides safety and protection for the buildings and removes the urgency in repairing the outage, which could be complicated and lengthy. This proposed project is a single, stand-alone project that should not be phased. If the entire scope of work is not completed, then the new feeder line is useless. Assuming spending authority effective on July 1, 2022, CWU could award a contract in the fall and complete the work by spring 2023. 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 add redundancy to the existing feeder lines, thereby connecting 13 facilities to a secondary feeder. If an outage occurs on the main feeder line, the buildings could be switched to the new one and have power restored within minutes. The result of not taking action is that the buildings on the two old feeder lines are vulnerable to a catastrophic outage that could cause multiple millions of dollars' worth of damage to buildings, materials and personal and public property, as well as disrupting teaching, learning, and the housing for 610 students. 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. The only alternative to this proposal would be to replace the two old feeders with new cabling. However, that would cost more money, would not provide redundancy, and would require extended power outages mitigated only by temporary power sources. The proposed project submitted would have no interruption in power supply, provide reliable redundancy and cost the state less money. The old feeder lines eventually will have to be replaced, but it is better to add the redundancy now and replace the existing feeders in the future. Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc. The facilities powered by the two feeder lines serve 11 academic programs, student housing and athletics programs. On a busy day during the academic year,

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Capital Project Request**

2021-23 Biennium

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Project Number: 40000121

Project Title: Electrical Grid Security

Description

upwards of 3,000 students and university employees could be affected by a major power outage. Over the course of a day, the majority of all CWU students might be scheduled for a class in one or more of the affected buildings. Additionally, the residential facilities served by the feeders have capacity to house 610 students. With impacts of this magnitude, an extended outage will likely impact every single member of the CWU community in some way. For students nearing graduation and whose majors are based in the affected buildings, an extended outage could have detrimental impacts on their progress toward graduation. Will non-state funds be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local, or private funds? No 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 CWU Capital Master Plan by reducing deferred maintenance and proactively solving a problem before a critical failure occurs; doing so protects the integrity of operations and avoids repair costs. This project supports every aspect of CWU's Strategic Plan because electricity is vital for every single university function. Without power, there are no lights, computers, or heat; everything stops. These two feeder lines serve a large section of campus and an interruption would affect thousands of people and prevent them from teaching, learning, researching, and working. Does this project include IT -related costs, including hardware, software, cloud -based services, contracts or IT staff? If yes, IT Addendum. No Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy use? If yes, please elaborate. Yes, because this project is a necessary upgrade to preserve and enhance electrical distribution on-campus. If the CWU campus is to someday have zero reliance on fossil fuels, the reliability and strength of electrical distribution is paramount. How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted? CWU is the most diverse public four -year university in Washington. For fall 2020, 40 percent of enrollees were students of color. Along with increasing the number of students of color, CWU has expanded strategies for keeping students enrolled and on-track to graduate. CWU's efforts to support student success has earned six Higher Education Excellence in Diversity Awards from INSIGHT Into Diversity magazine over the last seven years. CWU is the only institution in the state that can boast this record of achievement. This project ensures that these students will not have their academic pursuits disrupted by not having electricity in the classrooms, labs, and student housing.

Location

City: Ellensburg

County: Kittitas

Legislative District: 013

Project Type

Infrastructure (Major Projects)

Growth Management impacts

CWU is required to comply with the Jeanne Clery act. This federal law requires timely notification of emergencies occurring on or around campus. Central Washington University (CWU) is required to adhere to the State Environmental Policy Act (SEPA). The SEPA process is where growth management act impacts are considered. CWU coordinates planning efforts with all applicable city and county jurisdictions.

Funding

Acct Code	Account Title	Estimated Total	Expenditures		2021-23 Fiscal Period	
			Prior Biennium	Current Biennium	Reappropriations	New Appropriations
057	State Bldg Constr-Unknown					
057-1	State Bldg Constr-State	1,589,000				1,589,000
	Total	1,589,000	0	0	0	1,589,000

Future Fiscal Periods

**375 - Central Washington University
Capital Project Request**

2021-23 Biennium

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Version: 2A 2021-2023 First Year Supplemental

Report Number: CBS002

Date Run: 9/13/2021 3:35PM

Project Number: 40000121

Project Title: Electrical Grid Security

Funding

	<u>2023-25</u>	<u>2025-27</u>	<u>2027-29</u>	<u>2029-31</u>
057 State Bldg Constr-Unknown				
057-1 State Bldg Constr-State				
Total	0	0	0	0

Schedule and Statistics

	<u>Start Date</u>	<u>End Date</u>
Predesign		
Design	7/1/2022	8/1/2022
Construction	8/1/2022	4/1/2023

	<u>Total</u>
Gross Square Feet:	1
Usable Square Feet:	1
Efficiency:	100.0%
Escalated MACC Cost per Sq. Ft.:	1,082,170
Construction Type:	Heating and Power Plants
Is this a remodel?	Yes
A/E Fee Class:	A
A/E Fee Percentage:	14.63%

Cost Summary

	<u>Escalated Cost</u>	<u>% of Project</u>
Acquisition Costs Total	0	0.0%
Consultant Services		
Pre-Schematic Design Services	0	0.0%
Construction Documents	120,003	7.6%
Extra Services	0	0.0%
Other Services	54,570	3.4%
Design Services Contingency	17,603	1.1%
Consultant Services Total	192,175	12.1%
Maximum Allowable Construction Cost(MACC)	1,082,170	
Site work	1,082,170	68.1%
Related Project Costs	0	0.0%
Facility Construction	0	0.0%
GCCM Risk Contingency	0	0.0%
GCCM or Design Build Costs	0	0.0%
Construction Contingencies	109,383	6.9%
Non Taxable Items	0	0.0%

**375 - Central Washington University
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2021-23 Biennium

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Version: 2A 2021-2023 First Year Supplemental

Report Number: CBS002

Date Run: 9/13/2021 3:35PM

Project Number: 40000121

Project Title: Electrical Grid Security

Cost Summary

	<u>Escalated Cost</u>	<u>% of Project</u>
Construction Contracts		
Sales Tax	98,899	6.2%
Construction Contracts Total	<u>1,290,452</u>	<u>81.2%</u>
Equipment		
Equipment	0	0.0%
Non Taxable Items	0	0.0%
Sales Tax	0	0.0%
Equipment Total	<u>0</u>	<u>0.0%</u>
Art Work Total	0	0.0%
Other Costs Total	0	0.0%
Project Management Total	106,579	6.7%
Grand Total Escalated Costs	<u>1,589,206</u>	
Rounded Grand Total Escalated Costs	1,589,000	

Operating Impacts

No Operating Impact

Capital Project Request

2021-23 Biennium

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<u>Parameter</u>	<u>Entered As</u>	<u>Interpreted As</u>
Biennium	2021-23	2021-23
Agency	375	375
Version	2A-A	2A-A
Project Classification	*	All Project Classifications
Capital Project Number	40000121	40000121
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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Cost Estimate Summary

2021-23 Biennium

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Cost Estimate Number: 197

Report Number: CBS003

Cost Estimate Title: Electrical Grid Security

Date Run: 9/13/2021 3:36PM

Version: 2A 2021-2023 First Year Supplemental

Agency Preferred: Yes

Project Number: 40000121

Project Title: Electrical Grid Security

Project Phase Title: 2021-2023 First Year Supplemental Working Version

Contact Info Contact Name: Steve Dupont

Contact Number: 509.963.2111

Statistics

Gross Sq. Ft.:	1
Usable Sq. Ft.:	1
Space Efficiency:	100%
MACC Cost per Sq. Ft.:	1,050,650
Escalated MACC Cost per Sq. Ft.:	1,082,170
Remodel?	Yes
Construction Type:	Heating and Power Plants
A/E Fee Class:	A
A/E Fee Percentage:	14.63%

Schedule

Start Date End Date

Pre-design:		
Design:	07-2022	08-2022
Construction:	08-2022	04-2023
Duration of Construction (Months):	8	

Cost Summary Escalated

Acquisition Costs Total

Pre-Schematic Design Services	0	0
Construction Documents	120,003	
Extra Services	0	
Other Services	54,570	
Design Services Contingency	17,603	

Consultant Services Total

Site work	1,082,170	192,175
Related Project Costs	0	
Facility Construction	0	
Construction Contingencies	109,383	
Non Taxable Items	0	
Sales Tax	98,899	

Construction Contracts Total

Maximum Allowable Construction Cost(MACC)	1,082,170	1,290,452
Equipment	0	
Non Taxable Items	0	
Sales Tax	0	

Equipment Total

		0
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Art Work Total

		0
--	--	----------

Other Costs Total

		0
--	--	----------

Project Management Total

		106,579
--	--	----------------

Grand Total Escalated Costs

		1,589,206
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Rounded Grand Total Escalated Costs

		1,589,000
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Additional Details

Alternative Public Works Project: No

Cost Estimate Summary

2021-23 Biennium

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Cost Estimate Number: 197

Report Number: CBS003

Cost Estimate Title: Electrical Grid Security

Date Run: 9/13/2021 3:36PM

Version: 2A 2021-2023 First Year Supplemental

Agency Preferred: Yes

Project Number: 40000121

Project Title: Electrical Grid Security

Project Phase Title: 2021-2023 First Year Supplemental Working Version

Contact Info

Contact Name: Steve Dupont

Contact Number: 509.963.2111

Additional Details

State Construction Inflation Rate: 3.28%

Base Month and Year: 09-2021

Project Administration By: AGY

Project Admin Impact to DES that is NOT Included in Project Total: \$0

Cost Estimate Detail

2021-23 Biennium

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Cost Estimate Number: 197

Analysis Date: September 08, 2021

Cost Estimate Title: Electrical Grid Security

Detail Title: Reroute & Expansion of Feeder 17

Project Number: 40000121

Project Title: Electrical Grid Security

Project Phase Title: 2021-2023 First Year Supplemental Working Version

Location: Kittitas Co

Contact Info Contact Name: Steve Dupont

Contact Number: 509.963.2111

Statistics

Gross Sq. Ft.: 1
 Usable Sq. Ft.: 1
 Rentable Sq. Ft.: 0
 Space Efficiency: 100%
 Escalated MACC Cost per Sq. Ft.: 1,082,170
 Escalated Cost per S. F. Explanation

Construction Type: Heating and Power Plants
 Remodel?: Yes
 A/E Fee Class: A
 A/E Fee Percentage: 14.63%
 Contingency Rate: 10.00%
 Contingency Explanation

Projected Life of Asset (Years): 20
 Location Used for Tax Rate: Kittitas Co
 Tax Rate: 8.30%
 Art Requirement Applies: No
 Project Administration by: AGY
 Higher Education Institution?: No
 Alternative Public Works?: No

Project Schedule

	<u>Start Date</u>	<u>End Date</u>
Pre-design:		
Design:	07-2022	08-2022
Construction:	08-2022	04-2023
Duration of Construction (Months):	8	
State Construction Inflation Rate:	3.28%	
Base Month and Year:	9-2021	

Project Cost Summary

MACC:	\$ 1,050,650
MACC (Escalated):	\$ 1,082,170
Current Project Total:	\$ 1,540,000
Rounded Current Project Total:	\$ 1,540,000
Escalated Project Total:	\$ 1,482,628
Rounded Escalated Project Total:	\$ 1,483,000

<u>ITEM</u>	<u>Base Amount</u>	<u>Sub Total</u>	<u>Escalation Factor</u>	<u>Escalated Cost</u>
CONSULTANT SERVICES				
<u>Construction Documents</u>				
A/E Basic Design Services				116,666
SubTotal: Construction Documents				120,003
<u>Other Services</u>				
Bid/Construction/Closeout				52,415
SubTotal: Other Services				54,570
<u>Design Services Contingency</u>				
Design Services Contingency	16,908			
SubTotal: Design Services Contingency		16,908	1.0411	17,603
Total: Consultant Services		185,989	1.0333	192,175
CONSTRUCTION CONTRACTS				
<u>Site work</u>				
G20 - Site Improvements	30,000			
G40 - Site Electrical Utilities	1,020,650			
SubTotal: Site work		1,050,650	1.0300	1,082,170
<u>Construction Contingencies</u>				
Allowance for Change Orders	105,065			
SubTotal: Construction Contingencies		105,065	1.0411	109,383
Sales Tax		95,924	1.0310	98,899
Total: Construction Contracts		1,251,639	1.0310	1,290,452
Maximum Allowable Construction Cost (MACC)		1,050,650	1.0300	1,082,170
PROJECT MANAGEMENT				
Agency Project Management	102,372			
Total: Project Management		102,372	1.0411	106,579

Cost Estimate Summary and Detail

2021-23 Biennium

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Cost Estimate Number: 197

Cost Estimate Title: Electrical Grid Security

Report Number: CBS003

Date Run: 9/13/2021 3:36PM

<u>Parameter</u>	<u>Entered As</u>	<u>Interpreted As</u>
Associated or Unassociated	Associated	Associated
Biennium	2021-23	2021-23
Agency	375	375
Version	2A-A	2A-A
Project Classification	*	All Project Classifications
Capital Project Number	40000121	40000121
Cost Estimate Number	197	197
Sort Order	Cost Estimate Title	Title
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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C-100(2021)

Updated June 2021

Quick Start Guide

GENERAL INFORMATION

- 1) The C-100(2021) tool was created to align with the estimating application in the Capital Budgeting System (CBS). The intended use is to enable project managers to communicate their project cost estimates to budget officers in the standard format required for capital project budget requests/submittals to OFM.
- 2) This workbook is protected so that the worksheets within it cannot be moved or deleted in the usual manner. This protection is necessary to ensure that the cost estimate details and formulas align with the estimating application in the Capital Budgeting System.
- 3) The estimating format to develop the maximum allowable construction cost (MACC) is presented in Unifomat II.
- 4) Form-calculated costs such as A/E Basic Design Service fees and Agency Project Management costs are dependent on other estimated project costs such as Acquisition, MACC, Equipment, etc.
- 5) Project estimates generated with this tool are not sufficient for budget request submittals to OFM. Use the Capital Budgeting System to submit capital project budget requests.
- 6) Contact your assigned OFM Capital Budget Analyst with questions.

[OFM Capital Budget Analyst](#)

INSTRUCTIONS

- 1) Only green cells are available for data entry.
- 2) Fill in all known cells in the 'Summary' tab prior to moving on to the cost entry tabs A-G.
- 3) It is recommended, but not required, to fill out cost entry tabs in the following order:
A. Acquisition, C. Construction Contracts, D. Equipment, G. Other Costs, B. Consultant Services, F. Project Management, then E. Artwork.
- 4) If additional rows are inserted to capture additional project costs, a description must be provided in the Notes column or within Tab H. Additional Notes. Be particularly detailed for additional costs estimated for contingencies and project management.

FORM-CALCULATED COSTS (FEE CALCULATIONS)

- 1) A/E Basic Design Services: $AE\ Fee\ \% \times (MACC + Contingency)$
- 2) Design Services Contingency: $Contingency\ \% \times Consultant\ Services\ Subtotal$
- 3) Construction Contingency: $Contingency\ \% \times MACC$
- 4) Artwork: $0.5\% \times Total\ Project\ Cost$
- 5) Agency Project Management (Greater than \$1million): $(AE\ Fee\ \% - 4\%) \times (Acquisition\ Total + Consultant\ Services\ Total + MACC + Construction\ Contingency + Other\ Costs)$

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2021

Agency	Central Washington University
Project Name	Reroute & Expansion of Feeder 17
OFM Project Number	

Contact Information

Name	Steve Dupont
Phone Number	509-963-2111
Email	Steve.Dupont@cwu.edu

Statistics

Gross Square Feet	1	MACC per Square Foot	\$1,050,650
Usable Square Feet	0	Escalated MACC per Square Foot	\$1,082,170
Space Efficiency	0.0%	A/E Fee Class	A
Construction Type	Heating and power plant	A/E Fee Percentage	14.63%
Remodel	Yes	Projected Life of Asset (Years)	20

Additional Project Details

Alternative Public Works Project	No	Art Requirement Applies	No
Inflation Rate	3.28%	Higher Ed Institution	Yes
Sales Tax Rate %	8.30%	Location Used for Tax Rate	Ellensburg
Contingency Rate	10%		
Base Month	September-21	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule

Predesign Start		Predesign End	
Design Start	July-22	Design End	August-22
Construction Start	August-22	Construction End	April-23
Construction Duration	8 Months		

Green cells must be filled in by user

Project Cost Estimate

Total Project	\$1,540,001	Total Project Escalated	\$1,589,210
		Rounded Escalated Total	\$1,589,000

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2021

Agency	Central Washington University	
Project Name	Reroute & Expansion of Feeder 17	
OFM Project Number		

Cost Estimate Summary

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

Consultant Services			
Predesign Services	\$0		
A/E Basic Design Services	\$116,666		
Extra Services	\$0		
Other Services	\$52,415		
Design Services Contingency	\$16,908		
Consultant Services Subtotal	\$185,989	Consultant Services Subtotal Escalated	\$192,177

Construction			
Construction Contingencies	\$105,065	Construction Contingencies Escalated	\$109,384
Maximum Allowable Construction Cost (MACC)	\$1,050,650	Maximum Allowable Construction Cost (MACC) Escalated	\$1,082,170
Sales Tax	\$95,924	Sales Tax Escalated	\$98,899
Construction Subtotal	\$1,251,639	Construction Subtotal Escalated	\$1,290,453

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	\$102,372		
DES Additional Services Subtotal	\$0		
Other Project Admin Costs	\$0		
Project Administration Subtotal	\$102,372	Project Administration Subtotal Escalated	\$106,580

Other Costs			
Other Costs Subtotal	\$0	Other Costs Subtotal Escalated	\$0

Project Cost Estimate			
Total Project	\$1,540,001	Total Project Escalated	\$1,589,210
		Rounded Escalated Total	\$1,589,000

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	1.0272	\$0	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	\$116,666			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	\$116,666	1.0286	\$120,003	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning				
Site Survey				
Testing				
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	\$0	1.0286	\$0	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	\$52,415			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Insert Row Here				
Sub TOTAL	\$52,415	1.0411	\$54,570	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	\$16,908			
Other				
Insert Row Here				
Sub TOTAL	\$16,908	1.0411	\$17,604	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL				
	\$185,989		\$192,177	

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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	\$30,000			
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities	\$1,020,650			
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	\$1,050,650	1.0300	\$1,082,170	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	\$0	1.0300	\$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				
Insert Row Here				
Sub TOTAL	\$0	1.0411	\$0	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	\$1,050,650		\$1,082,170	

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7) Construction Contingency

Allowance for Change Orders	\$105,065		
Other			
Insert Row Here			
Sub TOTAL	\$105,065	1.0411	\$109,384

8) Non-Taxable Items

Other			
Insert Row Here			
Sub TOTAL	\$0	1.0411	\$0

Sales Tax

Sub TOTAL	\$95,924		\$98,899
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CONSTRUCTION CONTRACTS TOTAL	\$1,251,639		\$1,290,453
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Cost Estimate Details

Equipment					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	\$0		1.0411	\$0	
1) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	\$0		1.0411	\$0	
Sales Tax					
Sub TOTAL	\$0			\$0	
EQUIPMENT TOTAL					
EQUIPMENT TOTAL	\$0			\$0	

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Cost Estimate Details

Artwork					
Item	Base Amount		Escalation Factor	Escalated Cost	Notes
Project Artwork	\$0				0.5% of total project cost for new construction
Higher Ed Artwork	\$7,946				0.5% of total project cost for new and renewal construction
Other	-\$7,946				
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
Agency Project Management	\$102,372				
Additional Services					
Other					
Insert Row Here					
PROJECT MANAGEMENT TOTAL	\$102,372		1.0411	\$106,580	

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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		1.0300	\$0	

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C-100(2021)
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

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Expected Use of Bond/COP Proceeds

Agency No:	<u>375</u>	Agency Name	<u>Central Washington University</u>
Contact Name:	<u>Steve Dupont</u>		
Phone:	<u>509-201-0528</u>	Fax:	<u></u>
Fund(s) Number:	<u>057</u>	Fund Name:	<u>State Building Construction Account</u>
Project Number:	<u>40000121</u>	Project Title:	<u>Electrical Grid Security</u>

Agencies are required to submit this form for all projects funded with Bonds or COPs, as applicable. OFM will collect and forward the forms to the Office of the State Treasurer.

1. Will any portion of the project or asset ever be owned by any entity other than the state or one of its agencies or departments? Yes No
2. Will any portion of the project or asset ever be leased to any entity other than the state or one of its agencies or departments? Yes No
3. Will any portion of the project or asset ever be managed or operated by any entity other than the state or one of its agencies or departments? Yes No
4. Will any portion of the project or asset be used to perform sponsored research under an agreement with a nongovernmental entity (business, non-profit entity, or the federal government), including any federal department or agency? Yes No
5. Does the project involve a public/private venture, or will any entity other than the state or one of its agencies or departments ever have a special priority or other right to use any portion of the project or asset to purchase or otherwise acquire any output of the project or asset such as electric power or water supply? Yes No
6. Will any portion of the Bond/COP proceeds be granted or transferred to nongovernmental entities (businesses, non-profit entities, or the federal government) or granted or transferred to other governmental entities which will use the grant for nongovernmental purposes? Yes No
7. If you have answered "Yes" to any of the questions above, will your agency or any other state agency receive any payments from any nongovernmental entity, for the use of, or in connection with, the project or assets? A nongovernmental entity is defined as
 - a. any person or private entity, such as a corporation, partnership, limited liability company, or association;
 - b. any nonprofit corporation (including any 501(c)(3) organization); or
 - c. the federal governmental (including any federal department or agency). Yes No
8. Is any portion of the project or asset, or rights to any portion of the project or asset, expected to be sold to any entity other than the state or one of its agencies or departments? Yes No
9. Will any portion of the Bond/COP proceeds be loaned to nongovernmental entities or loaned to other governmental entities that will use the loan for nongovernmental purposes? Yes No
10. Will any portion of the Bond/COP proceeds be used for staff costs for tasks not directly related to a financed project(s)? Yes No

If all of the answers to the questions above are "No," request tax-exempt funding. If the answer to any of the

questions is “Yes,” contact your OFM capital analyst for further review.

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CENTRAL WASHINGTON UNIVERSITY NORTH CAMPUS MEDIUM VOLTAGE DISTRIBUTION SYSTEM FEASIBILITY STUDY

Prepared for: CENTRAL WASHINGTON UNIVERSITY
ELLENSBURG, WA

Prepared by: MW CONSULTING ENGINEERS
SPOKANE, WASHINGTON

Date Prepared: Aug 26, 2021

MW Consulting Engineers was hired by Central Washington University to study the existing north campus medium voltage distribution system to assess existing conditions as well as the options for modification and expansion for future campus growth. The purpose of this report is to outline MW's findings, proposed options, and associated costs so that a decision can be made as to how to proceed with future projects.

Please refer to the attached concept drawings for supplemental information.

Part 1 - Existing Conditions

- A. **Northwest Campus:** The existing northwest area of campus is generally served by existing 12.47kV underground campus feeders 34 and 36. Campus feeder 17 is also available as a backup to feeder 34 and substation 3. That connection occurs at existing line switch LSE1. The "north" campus buildings currently served by each feeder is as follows:

Feeder 34: Psychology, Randall, Brooks Library, Farrell, Dugmore, North Dining

Feeder 36: Purser, Nicholson, Aquatics, Wahle, Tomlinson, Track, L&L

Feeder 17: No loads

Near the intersection of E. Dean Nicholson Blvd & N. Walnut there are existing medium voltage vaults that contain feeders 17, 34 and 36. Some of these feeders transit the same vault multiple times as they route to/from each building and switching equipment. This same condition exists within an existing vault further south at switch LSB2. Because of the density of cabling passing through the existing vaults and the presence of feeder splices in the existing vaults, the safety of working within the vaults is compromised due to the likelihood of physically contacting live cables or terminations during access. This is a safety issue for anyone needing access to the vault for maintenance or trouble shooting. See report attachments for example photos of the existing vault conditions and cable density.

The labeling of cables in the existing vaults is incomplete there are no accurate record drawings of the cabling within the vaults. This results in longer than normal outages during a feeder cable failure. A cable failure can typically be identified within 6-8 hours for standard working conditions with complete labeling and accurate record drawings. Without labeling and record drawings, this time

increases to an estimated 12-24 hours, resulting in longer outages for large portions of campus during a cable failure incident. The lack of labeling and record drawings also creates a safety issue when trying to identify which cable in the vault is not active and can then be safely worked on since some of the feeders pass through the same vault multiple times.

Existing vaults were observed as having standing water. This is common for the CWU campus due to the high level of ground water. Existing vaults are pumped free of water prior to access for maintenance.

The existing housing facilities (Dugmore & Wahle) currently have no level of redundancy in regards to their electrical service. A power outage on feeder 34 or 36 would result in an extended loss of power for these housing facilities. This would be a major issue during the winter season where buildings rely on electric heating and central air handling equipment.

Existing loading of feeder 36 is noted as being higher than feeder 34. It would improve the balancing of the loads on the campus electrical distribution system across campus if loads could be removed from feeder 36. Balancing of the campus electrical loads is recommended to help minimize the impact of a feeder outage to the campus. For example, feeder 36 currently connects to (11) service transformers that would all be impacted by a cable failure on feeder 36. Moving a portion of the feeder 36 loads to feeder 17 would reduce this risk. See report attachments for feeder coverage map and proposed load changes.

Existing buried ductbanks are present at Dugmore and to the north at the track and field complex. The existing duct banks are intended to be used for development of a campus feeder loop to provide electrical services to the northwest corner of the campus. This future loop feeder system could provide redundancy for residence buildings Dugmore & Whale.

Feeder 34 routing for service to L&L and Brooks Library occurs within the footprint for the planned North Academic Complex project that is expected to begin design in 2021-2022. Relocation of feeder 34 will be required in this area of campus to allow for the proposed construction.

B. North central Campus:

The existing service to Hogue hall contains a medium voltage line switch which feeds a downstream line switch from a switched compartment. This configuration is not desirable and does not meet CWU campus standards. Existing duct bank is present south of Hogue hall to possibly reconfigure this part of the distribution to eliminate this existing condition.

The open green space east of Music is an area of campus where future development may occur. Currently there is no electrical infrastructure present in this green space to support this anticipated growth.

C. Northeast Campus:

There is an existing line switch located at the entrance to brooklane village that is used to switch (2) campus feeders for electrical service to the residential housing buildings. The fused side of the line switch is tapped to also provide service to the existing campus pumphouse building transformer. This tap is not desirable and does not meet CWU campus standards. The pumphouse transformer has reached the end of its useful service life and is due for replacement including a new pad.

The open green space north and south of east 18th avenue and east of Alder St. is an area of campus where future development may occur. Currently there is no electrical infrastructure present on the south side of east 18th avenue to support this anticipated growth.

D. General:

The existing 12.47kV underground campus feeders across campus are at or near the end of their useful service life. There are select portions of cabling that have been partially upgraded for new building construction or repairs. Cabling that is at or near the end of useful service life includes, but is not limited to, all of the existing feeders that are north of the irrigation canal. This excludes feeders at brooklane village and student village housing complexes.

There are existing conditions where a 12.47kV line switch is feeding a downstream line switch from its fused supply compartment. Additionally, there are existing conditions where a 12.47kV line switch is feeding a downstream service transformer which feeds a secondary downstream service transformer in series. These conditions do not align with the CWU construction standards and

Part 3 - Recommendations

- A. **Feeder 17** – It is recommended that existing feeder 17 be expanded as presented in **Option A** for the following reasons:
1. Expansion of feeder 17 will allow for future growth in the northwest area of campus.
 2. Feeder 17 would be designed as a loop system which would provide redundancy for residential buildings Dugmore and Whale.
 3. As part of the feeder 17 expansion, loads would be moved from existing feeder 36 & 34 to feeder 17. This would help balance the loads across the campus electrical distribution system.
- B. **Feeder 34** – It is recommended that existing feeder 34 be modified as presented in **Option B** for the following reasons:
1. Revised routing for feeder 34 will allow for planned North Academic Complex project.
 2. Remediation of excessive splices and cable density in existing vaults at line switch LSE1 & LSB2 to improve maintenance access and safety.
 3. Replacement of existing cable that has exceeded its life expectancy of 20 years.

Proposed Project Schedule:

Design Phase	3 Months
Bid Phase	1 Month
Construction Phase	6 Months

***Estimating Notes:**

Indicated estimates include: 8.9% Sales Tax on Materials only.

Indicated estimates include: 9.0% Design Fees.

Indicated estimates exclude: Construction Contingency.

Indicated estimates assume work will be performed by a contractor, not CWU.

END OF REPORT

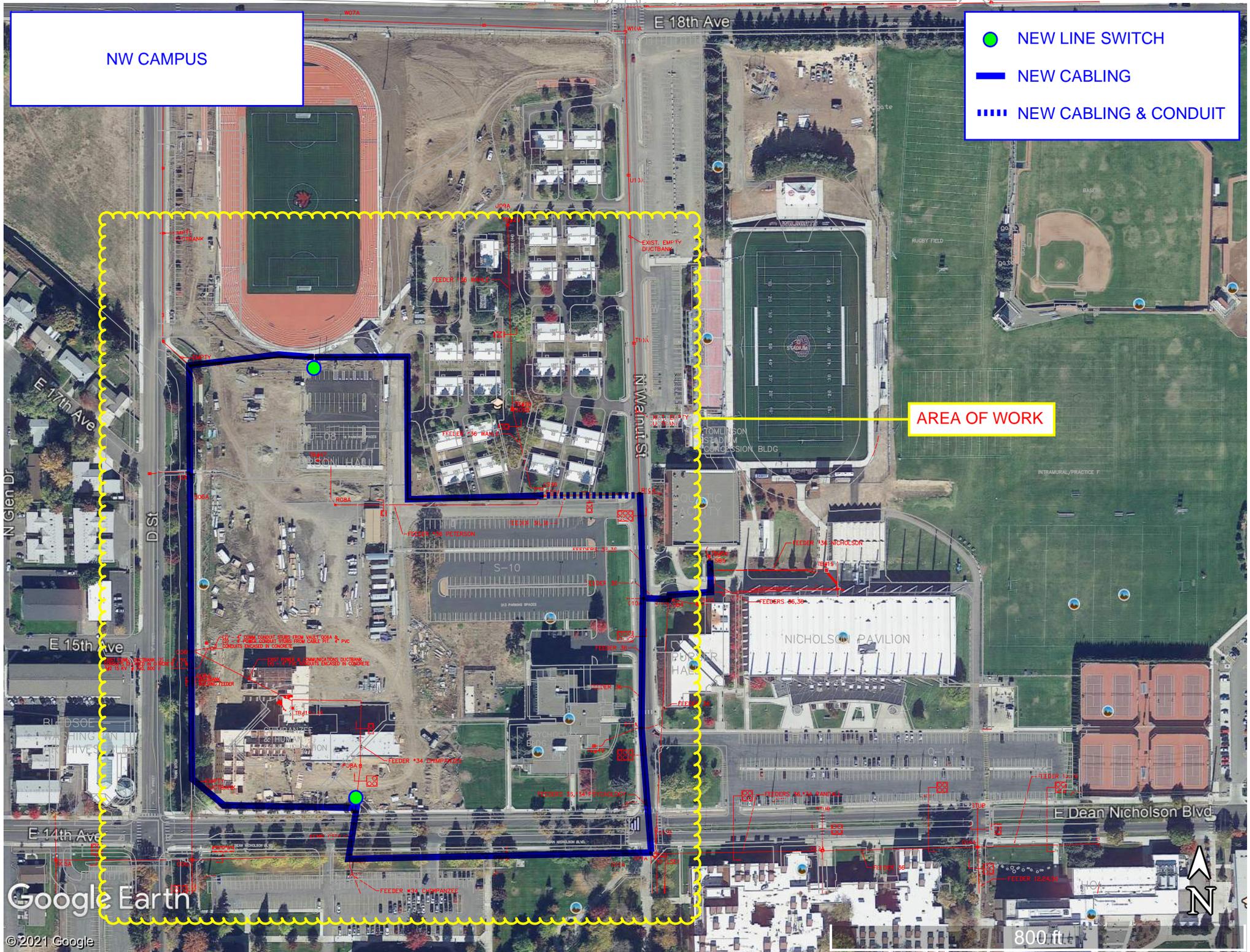
ATTACHMENTS

- Conceptual Drawings
- Photos of Existing Vault Condition
- Campus Feeder Coverage Map - Feeders 34 & 36

NW CAMPUS

- NEW LINE SWITCH
- NEW CABLING
- ▬▬▬ NEW CABLING & CONDUIT

AREA OF WORK



Google Earth

©2021 Google

800 ft



CENTRAL CAMPUS

Legend

AREA OF WORK

- NEW LINE SWITCH
- NEW CABLING
- ▬▬▬ NEW CABLING & CONDUIT

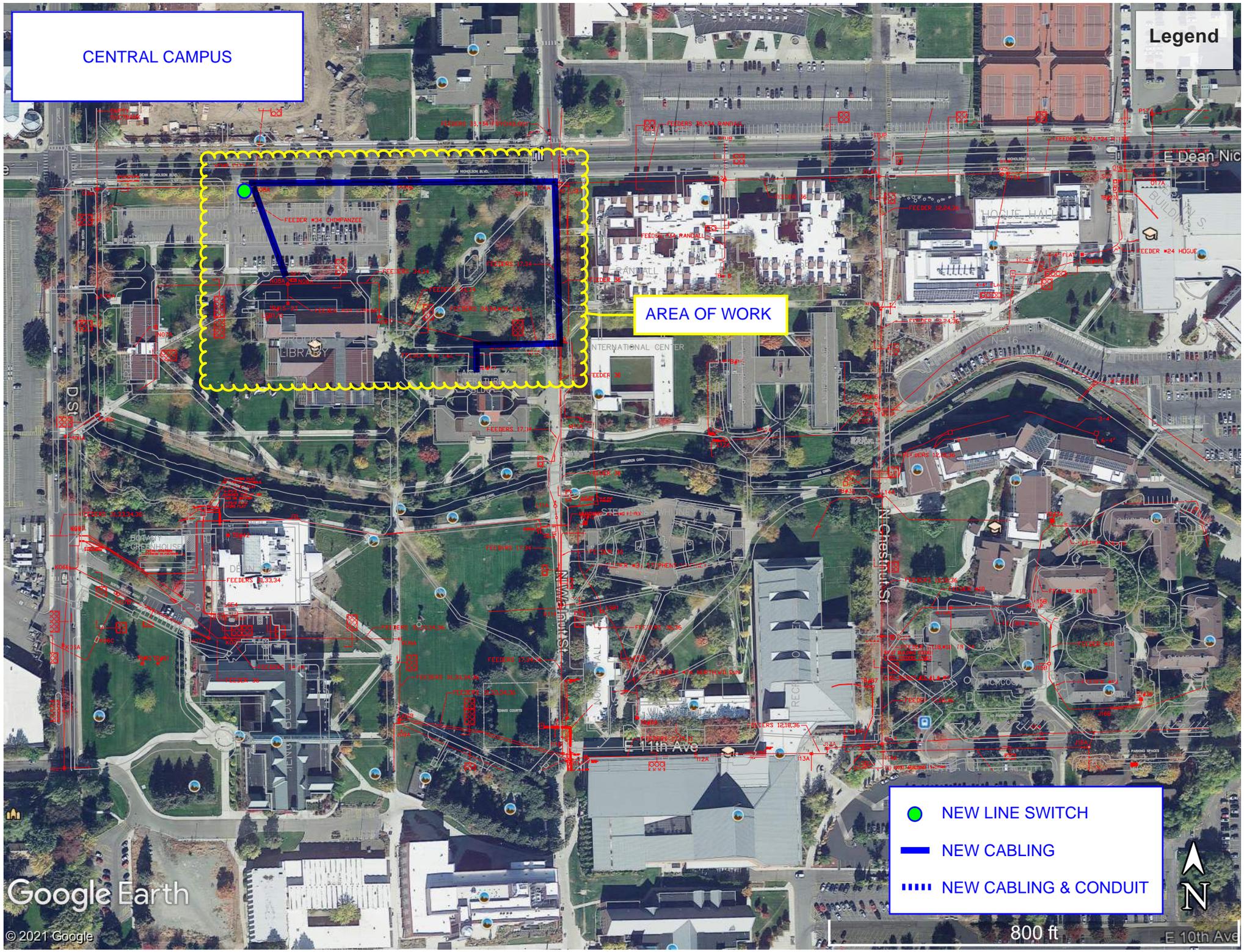
Google Earth

© 2021 Google



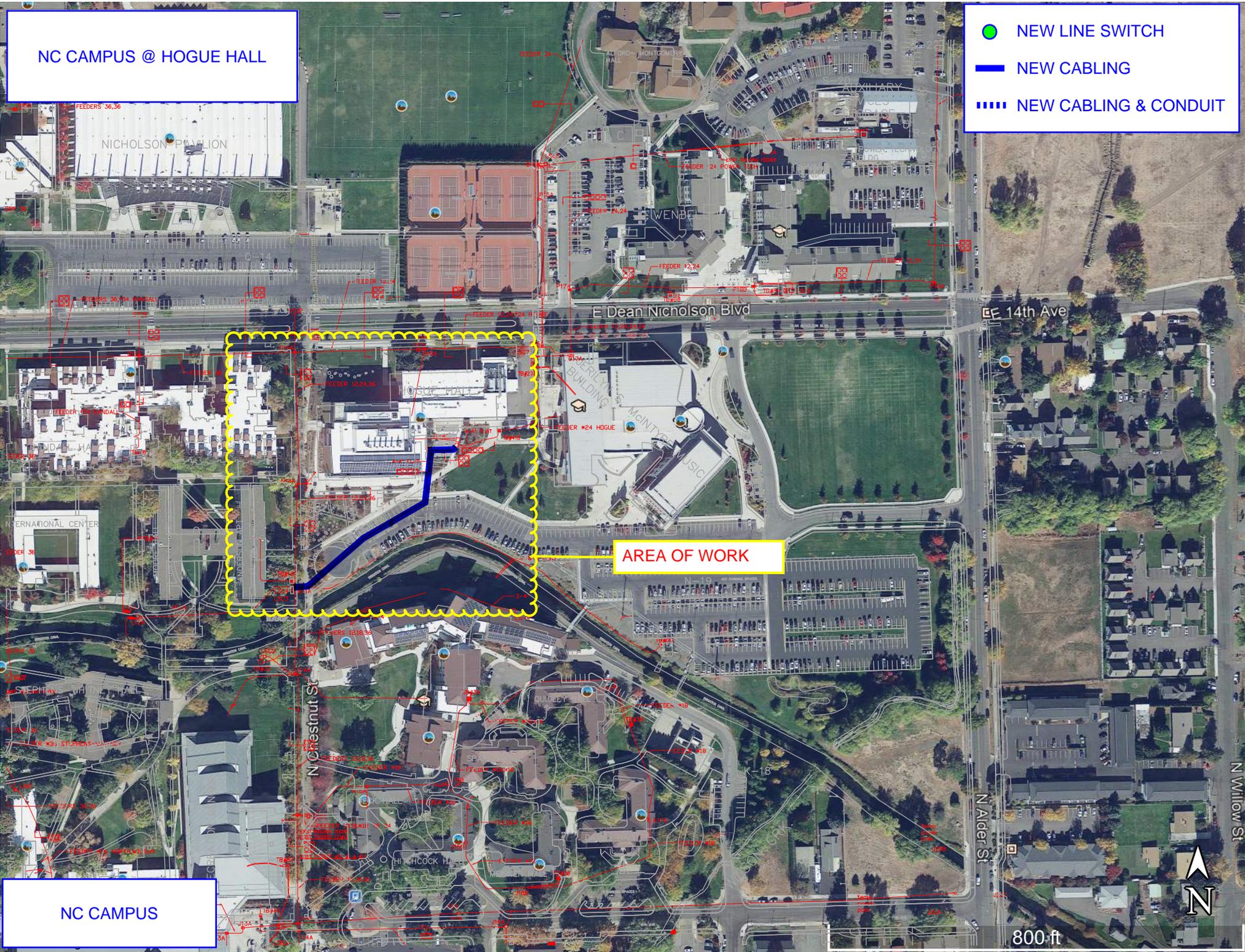
800 ft

E 10th Ave



NC CAMPUS @ HOGUE HALL

- NEW LINE SWITCH
- NEW CABLING
- ▬▬▬ NEW CABLING & CONDUIT



AREA OF WORK

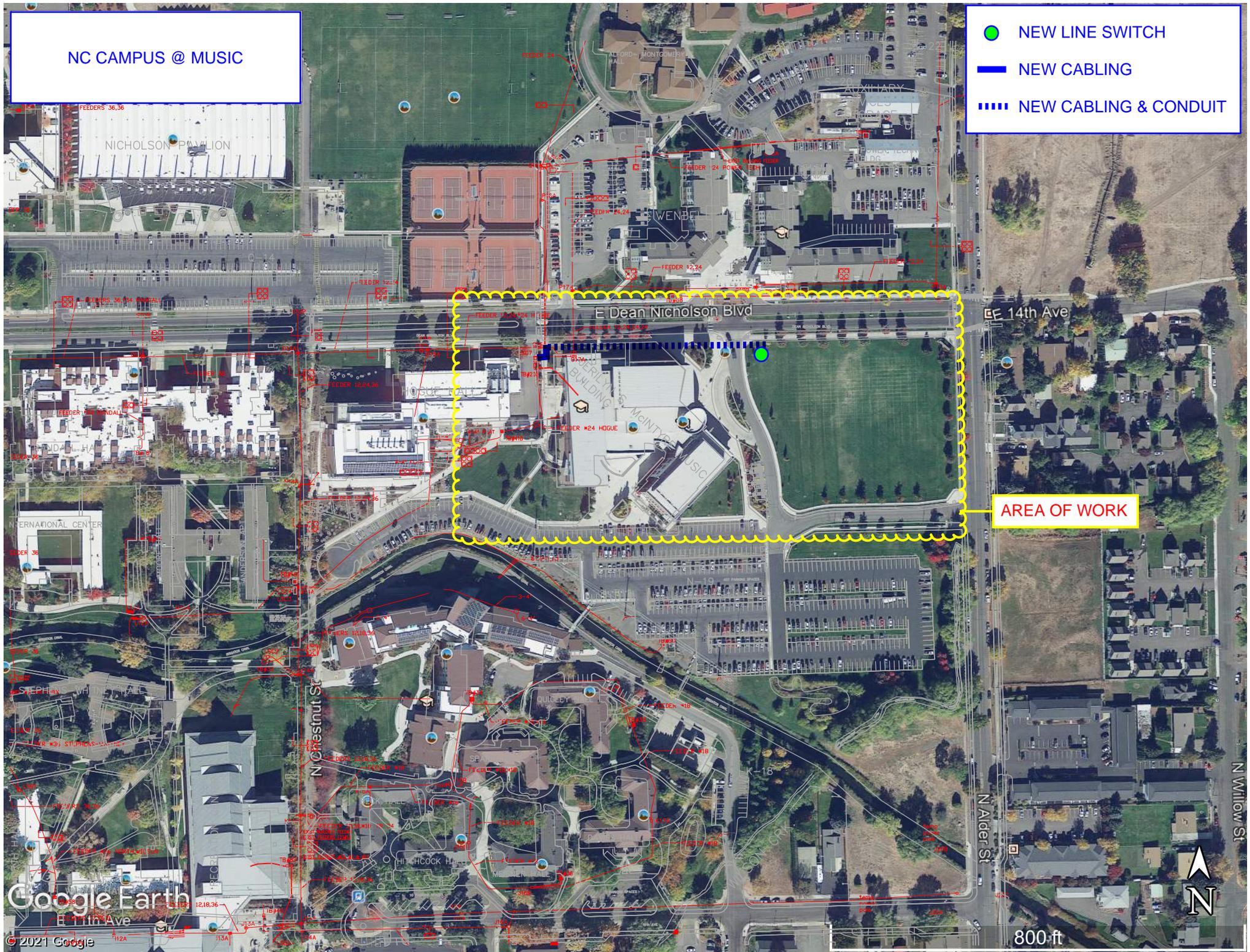
NC CAMPUS

800 ft



NC CAMPUS @ MUSIC

- NEW LINE SWITCH
- NEW CABLING
- ▬▬▬ NEW CABLING & CONDUIT



AREA OF WORK

NE CAMPUS @ 18th

Legend

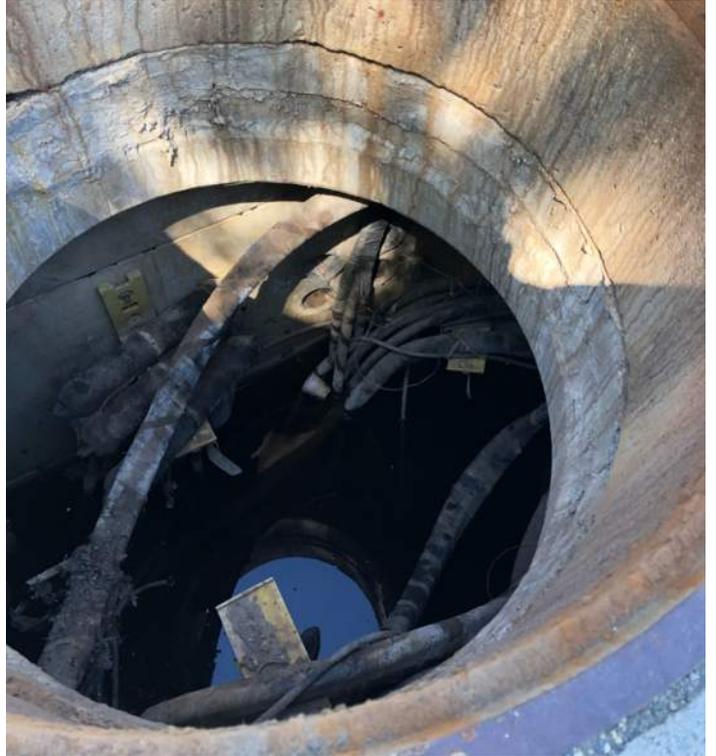


AREA OF WORK

- NEW LINE SWITCH
- NEW CABLING
- ▤ NEW CABLING & CONDUIT



EXISTING VAULT 011A



CAMPUS FEEDER COVERAGE MAP FEEDERS 34 & 36

-  = FEEDER 34 SERVICE
-  = FEEDER 36 SERVICE
-  = PROPOSED LOADS TO MOVE TO FEEDER 17

