Emergent Budget Proposal Narrative
Division: Academic Affairs

Campus Network Refresh

Please check the appropriate category for this proposal and provide a brief (1-2 sentences) explaining the selection:

☐Urgent unforeseeable items that have arisen since the FY17-19 budget build process
☐Items calling for prompt action that are so critical they cannot wait until the FY20-21 biennial budget build process
☒Items that have arisen as a consequence of changed conditions, such as, but not limited to:
    a) additional enrollments,
    b) a change in leadership at planning unit level, and/or
    c) State or federal policy changes
☒Time-sensitive strategic opportunities that advance the university toward strategic plan fulfillment and are of the highest priority

New leadership from the new Vice Provost of IT/CIO has brought renewed attention and a new strategic approach to addressing the need to refresh and expand our campus's wired and wireless networks. New procurement options are now available from our campus networking partner that will allow us to operationalize the costs of refreshing our network equipment – a necessary change in acquisition strategy given that WA State OFM will no longer fund the equipment through capital dollars as they have in past refresh projects.

Statement of Purpose: *(What is the problem or opportunity being addressed? How will you address this problem or opportunity?)*

The vast majority of equipment that provides the data network on campus is either end-of-support or will be in the next three years, leaving critical infrastructure without replacement parts or software security updates. Our campus wireless network does provide sufficient coverage to serve the needs of our students, faculty, and staff. Our wired network does not provide sufficient power-over-Ethernet capacity to meet the campus's growing needs for electronic access control, cameras and security equipment, IP telephones, and newer wireless access points.

The last two refresh projects for the campus network, in 1999-2000 and 2009-10, were funded by the state as capital projects. In 2014, OFM informed us that this equipment no longer qualifies for capital funding due to its 7-10 year replacement lifecycle. We are therefore recommending a shift to an operationalized funding model.

Anticipated Outcome(s):

- Upgrade and expansion of the campus wireless network to meet the growing academic and operational needs of students, faculty, and staff

- Upgrade of the campus wired network to meet bandwidth and power-over-Ethernet requirements for the next generation of networked devices, upgraded telephone systems, and expanded security/access control systems
- Updated network hardware and software that provides more security against evolving cybersecurity threats
- A 7-year annualized payment that can be accounted for in the university's annual operating budget allocations (recommended).
- Minimized disruption to campus through inter-department coordination, dedicated project management resources, and off-hours work.

Metrics: *(How will outcomes be measured?)*

This large enterprise-wide project will need to be coordinated in an effort to minimize campus disruption as a goal. ITS will assign a project manager to properly scope, communicate and keep the project on task to help achieve this goal. Once complete, this project will aid in minimizing future potential network outages due to aged equipment. Instead of measuring network outages, this project will allow ITS to focus on measuring enhanced uses of out networks, not decreased uses.

How does this project support the University Mission and Strategic Objectives?

Strategic Object 1.G of the new WWU Strategic Plan requires the university to:
Provide technological and other academic infrastructure to support curricular innovation, research, scholarship, and creative activity, civic engagement and social justice.

The introduction to the Strategic Plan states that WWU must:
…improve our commitment to provide a safe, just, and equitable University for all students and employees.

Any technology or technology-dependent initiative advanced by this university requires a robust, resilient, secure data network as a foundation for its implementation and sustained success. Some of the university's current highest priority projects, from the upgrade of our Ellucian Banner student and financial information systems (driven by federal mandates) to the expansion of our electronic access control and security systems (driven by our institution's deep concern for the safety and wellbeing of our community), are dependent upon the campus network.

- New academic technologies, from app-based audience response systems in classrooms to microscopes that connect to mobile network devices, are revolutionizing curricular and pedagogical approaches.
- New mobile-friendly work control systems are already being implemented to make the university's custodians and tradespeople more efficient, better prepared, and ultimately more effective at serving the university's operational needs.
- Nationwide surveys by Educause and others show that today's students are bringing an average of three wireless network devices per student to campus, with that number growing every year.

A modern university, best positioned to attract and retain the modern student while implementing the most advanced academic and operational technologies in service of the university's mission, must be able to provide the highest quality wireless network experience across its campus.

An investment in a refreshed campus network is not only a strategic investment on its own merits, it is a foundational investment in strategic initiatives to come.

What are the consequences of not funding this package?

- We buy resilient, enterprise-grade equipment that can be run beyond its end-of-support date without fear of immediate failure. However, as more equipment reaches its end-of-support date, the probability of component failure increases, and replacement parts for failed components will become more expense and more difficult to source. The impact of a failure can be anywhere from the entire floor of a building to the entire campus's connection to the internet, and increased scarcity of replacement parts will increase the projected downtime for impacted users from a couple hours to several days or even weeks.
- Critical network equipment will stop receiving software updates and security patches as soon as they go end-of-support, leaving our campus computers and other networked devices increasingly vulnerable to fast-evolving cybersecurity threats.
- Without more robust and abundant wireless network infrastructure, the campus network will not be able to support increased demand from student devices, from academic technology initiatives like the new microscope-connected tablets, or operational technology initiatives like the new asset management and work control system being deployed by FM.
- Without upgrades to the network equipment in all of our buildings to provide higher capacity of Power-over-Ethernet, the campus network will not be able to support modern wireless access points, the expansion of our IP telephony system to replace the existing, aging analog telephony infrastructure, modern access control and security systems, or other devices that rely on power-over-Ethernet to function.
- The quality of a campus's wireless network, in terms of coverage area and performance, is a highly visible indicator of the university's overall technology stature. A wireless network with poor coverage and/or performance has the potential to place us at a competitive disadvantage when attracting prospective students, and may impact our reputation when hosting conferences and visiting scholars.

What alternatives were explored and why was this alternative chosen?

- Capital project money was sought in 2014 to support the wireless network expansion in this request. WA state OFM declared the project ineligible for capital funding, because networking equipment does not last at least 14 years before needing to be replaced.
- Replacements of aging network equipment were folded into the capital construction projects to renovate Miller Hall, Carver Academic Center, and the Viking Union/Multicultural Center. Wireless coverage has been expanded to classrooms through capital-funded classroom renovation projects. However, state OFM will not allow these equipment purchases to exceed 20% of the total project cost, and the purchased equipment must be rationally related to the larger construction project. This approach

does not allow us to grow the wireless network across campus fast enough to meet student demand, or to refresh the campus network in time to meet the end-of-support deadlines of the existing equipment.

- Auxiliary Services (VU, University Residences) have self-funded the necessary network equipment refreshes and wireless network expansions in their facilities.
- Because the campus network equipment was all put in by a single capital project in 2000, and all refreshed by a single capital project in 2009, it is all coming due for replacement at the same time. But without eligibility to fund the next refresh through a capital project, we must use an alternate strategy to replace aged and supported hardware. By relying on large one-time allocations in the past, the true cost of ownership of our campus network has been hidden from us. We recommend operationalizing that cost through an annualized financing arrangement that will make the true cost of ownership visible and accounted for.

Which units (departments, colleges, etc.) will be involved?

ITS, FM, Space Administration

Equipment: *(For major (>$25k) purchases, please provide the following information.)*

Purpose:

To provide robust, resilient, secure wired and wireless data networking to the entire campus, including security and access control systems, IP telephony, computers, printers, classroom technology, and all other wired/wireless networking devices.

Cost:

There are three potential cost scenarios under consideration: a 1-year purchase and implementation ("CapEx Forklift"), a three-year implementation with three discrete annual purchases ("3-Yr CapEx"), and a one-year implementation purchased with a seven-year annualized payment ("7-Yr OpEx"):
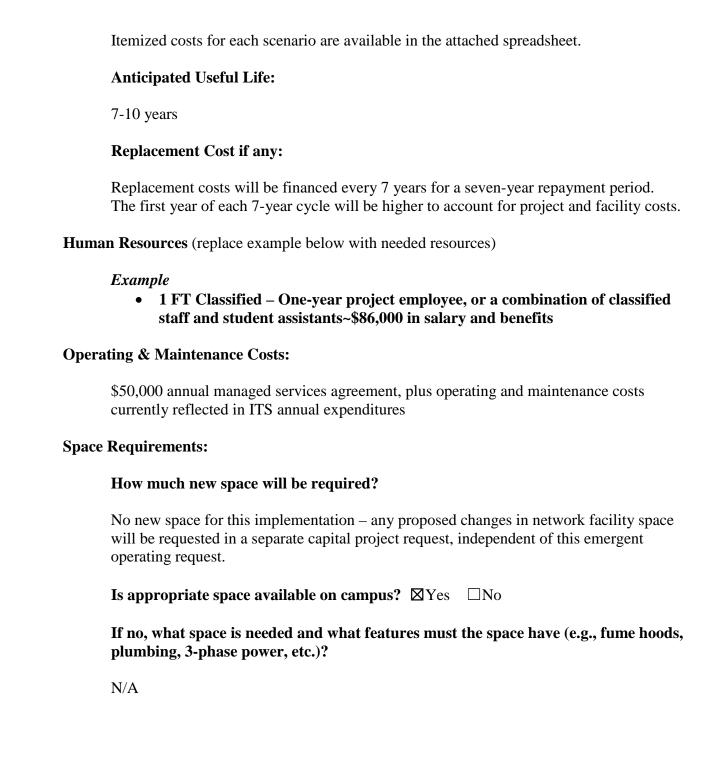
CapEx Forklift
Total Project Cost (FY19): $12,777,455.33

3-Yr CapEx
FY19 Project Cost: $1,019,372.80
FY20 Project Cost: $5,737,265.46
FY21 Project Cost: $5,737,265.46
Total Project Cost: $12,493,903.72

7-Yr OpEx
FY19 Project Cost: $3,502,119.25
FY20-25 Project Cost: $1,230,841.75/yr
Total Project Cost: $10,899,170.25

Itemized costs for each scenario are available in the attached spreadsheet.

Anticipated Useful Life:

7-10 years

Replacement Cost if any:

Replacement costs will be financed every 7 years for a seven-year repayment period. The first year of each 7-year cycle will be higher to account for project and facility costs.

Human Resources (replace example below with needed resources)

> *Example*
> - **1 FT Classified – One-year project employee, or a combination of classified staff and student assistants~$86,000 in salary and benefits**

Operating & Maintenance Costs:

$50,000 annual managed services agreement, plus operating and maintenance costs currently reflected in ITS annual expenditures

Space Requirements:

How much new space will be required?

No new space for this implementation – any proposed changes in network facility space will be requested in a separate capital project request, independent of this emergent operating request.

Is appropriate space available on campus? ☒Yes   ☐No

If no, what space is needed and what features must the space have (e.g., fume hoods, plumbing, 3-phase power, etc.)?

N/A

CapEx - Forklift

Category	FY19	FY20	FY21	FY22	FY23
Core/Distro	$575,977.33	$0.00	$0.00	$0.00	$0.00
FW/Sec	$40,000.00	$0.00	$0.00	$6,000.00	$20,000.00
Access	$5,300,000.00	$0.00	$0.00	$0.00	$0.00
Wireless	$2,400,000.00	$0.00	$0.00	$0.00	$0.00
Datacenter	$151,000.00				
UPS/PDU	$945,000.00	$0.00	$0.00	$0.00	$0.00
FM	$820,000.00	$0.00	$0.00	$0.00	$0.00
Services	$432,500.00				
Proj Emp	$86,065.00	$0.00	$0.00	$0.00	$0.00
Contingency - 20%	$2,026,913.00	$0.00	$0.00	$0.00	$0.00
Total	$12,777,455.33	$0.00	$0.00	$6,000.00	$20,000.00

CapEx - 3 yr

Category	FY19	FY20	FY21	FY22	FY23
Core/Distro	$575,977.33	$0.00	$0.00	$0.00	$0.00
FW/Sec	$40,000.00	$0.00	$0.00	$0.00	$0.00
Access	$0.00	$2,438,489.55	$2,438,489.55	$0.00	$0.00
Wireless	$0.00	$1,200,000.00	$1,200,000.00	$0.00	$0.00
Datacenter	$151,000.00	$0.00	$0.00	$0.00	$0.00
UPS/PDU	$0.00	$472,500.00	$472,500.00	$0.00	$0.00
FM	$0.00	$410,000.00	$410,000.00	$0.00	$0.00
Services	$82,500.00	$174,000.00	$174,000.00	$0.00	$0.00
Proj Emp	$0.00	$86,065.00	$86,065.00	$0.00	$0.00
Contingency (20%)	$169,895.47	$956,210.91	$956,210.91	$0.00	$0.00
Total	$1,019,372.80	$5,737,265.46	$5,737,265.46	$0.00	$0.00

3-Year Total	$12,493,903.72

OpEx - 7 year (Forklift Install)

Category	FY19	FY20
Wired/Wireless Network Equipment and Project Services	$1,180,841.75	$1,180,841.75
Firewall and Security Equipment Upgrades	$40,000.00	$0.00
Power Distribution and Conditioning Equipment	$945,000.00	$0.00
FM Electricians T&M - Cabling and Electrical Installs	$820,000.00	$0.00
Annual Managed Services Agreement	$50,000.00	$50,000.00
1-Year Project Employees	$86,065.00	$0.00
Contingency - 20%	$380,213.00	
Total	$3,502,119.75	$1,230,841.75
7-Year Total	$10,899,170.25	

FY21	FY22	FY23	FY24	FY25
$1,180,841.75	$1,180,841.75	$1,180,841.75	$1,180,841.75	$1,180,841.75
$0.00	$6,000.00	$0.00	$0.00	$6,000.00
$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00
$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00
$0.00	$0.00	$0.00	$0.00	$0.00
$1,230,841.75	$1,236,841.75	$1,230,841.75	$1,230,841.75	$1,236,841.75

WESTERN WASHINGTON UNIVERSITY
Campus Network Refresh

	FY19				Future Years Recurring (if different than FY19)			
	Employee FTE	One Time Costs	Recurring Costs	Total Costs	Employee FTE	One Time Costs	Recurring Costs	Total Costs
Faculty Salaries	0.00		$ -	$ -	0.00		$ -	$ -
Professional Salaries	1.00		$ 63,500	$ 63,500	0.00		$ -	$ -
Classified Salaries	1.00	$ 52,788	$ -	$ 52,788	0.00		$ -	$ -
Student Salaries (Graduate Assistants, Hourly Student, etc)	0.00	$ 10,335	$ -	$ 10,335	0.00		$ -	$ -
Benefits		$ 22,942	$ 22,878	$ 45,820			$ -	$ -
Total Salaries & Benefits		**$ 86,065**	**$ 86,378**	**$ 172,443**		**$ -**	**$ -**	**$ -**
Supplies and Materials				$ -				$ -
Professional Service Contracts (please detail below)			$ 50,000	$ 50,000				$ -
Equipment and Personal Technology - including new faculty set-up costs		$ 2,185,213	$ 1,180,842	$ 3,366,055				$ -
Other Goods and Services (includes memberships, supplies, materials)				$ -				$ -
Total Goods and Services		**$ 2,185,213**	**$ 1,230,842**	**$ 3,416,055**		**$ -**	**$ -**	**$ -**
Lodging				$ -				$ -
Automobile Rental				$ -				$ -
Air Travel				$ -				$ -
Ground Transportation				$ -				$ -
Other travel costs				$ -				$ -
Total Travel		**$ -**	**$ -**	**$ -**		**$ -**	**$ -**	**$ -**
Total Expenditures		**$2,271,278**	**$1,317,220**	**$3,588,498**		**$0**	**$0**	**$0**

POSITION TITLE	FY19						Future Years Recurring (if different than FY19)					
	Proposed Annual Salary	Headcount	FTE	Budgeted Salary	Benefits	TOTAL	Proposed Annual Salary	Headcount	FTE	Budgeted Salary	Benefits	TOTAL
Faculty Salaries												
Total Professors	$ -	0	0.00	$ -	$ -	$ -	$ -	0	0.00	$ -	$ -	$ -
Total Associate Professors	$ -	0	0.00	$ -	$ -	$ -	$ -	0	0.00	$ -	$ -	$ -
Total Assistant Professors	$ -	0	0.00	$ -	$ -	$ -	$ -	0	0.00	$ -	$ -	$ -
Total Non Tenure-Track	$ -	0	0.00	$ -	$ -	$ -	$ -	0	0.00	$ -	$ -	$ -
Faculty Salary and Benefit Total	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**
Professional Salaries												
Exempt Staff Salary and Benefit Total	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**
Classified Salaries												
Classified Staff Salary and Benefit Total	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**
Student Salaries												
Student Salary and Benefit Total	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**
Total Salary and Benefits - All Positions	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0.00**	**$ -**	**$ -**	**$ -**