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<b>SUBJECT</b>	UBC Five-Year Capital Plan 2024-2025 to 2028-2029
<b>SUBMITTED TO</b>	Property Committee
<b>MEETING DATE</b>	June 15, 2023
<b>SESSION CLASSIFICATION</b>	Recommended session criteria from Board Meetings Policy: OPEN
<b>REQUEST</b>	<b>APPROVAL REQUESTED</b> IT IS HEREBY RESOLVED that the Property Committee recommends to the Board of Governors approval of the UBC Five-Year Capital Plan 2024-2025 to 2028-2029 for submission to the Ministry of Post-Secondary Education and Future Skills.
<b>LEAD EXECUTIVE</b>	Frank Laezza, Vice-President Finance & Operations
<b>SUPPORTED BY</b>	Lesley Cormack, Deputy Vice-Chancellor and Principal, UBC Okanagan Gage Averill, Provost and Vice-President Academic, UBC Vancouver Robin Ciceri, Vice-President External Relations Gail Murphy, Vice-President Research & Innovation Rehan Sadiq, Provost and Vice-President Academic, UBC Okanagan Bhushan Gopaluni, Vice-Provost and Associate Vice-President Faculty Planning John Metras, Associate Vice-President Facilities Jennifer Sanguinetti, Managing Director, Infrastructure Development Rob Einarson, Associate Vice-President Finance & Operations, VPFO Michael White, Associate Vice-President Campus & Community Planning

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**PRIOR SUBMISSIONS**

The subject matter of this submission was most recently considered by the Board of Governors on [June 16, 2022](#) (OPEN SESSION) – UBC Five Year Capital Plan – 2023-2024 to 2027-2028.

The following Executive Summary provides a status update from the date of the most recent submission.

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**EXECUTIVE SUMMARY**

To develop capital priorities for future consideration, the Ministry of Post-Secondary Education and Future Skills (PSFS) requests five-year capital plan submissions from all public post-secondary institutions in June of each year. Board of Governors' approval is required for the submission. The Five-Year Capital Plan provides PSFS with a high-level understanding of UBC's capital requirements for new priority expansion projects, replacement/renewal projects and capital innovation projects.

The Five-Year Capital Plan submission also provides an opportunity to highlight UBC's capital priorities to government for potential funding. Board approval of the Plan does not commit the University to undertake any specific project(s) nor does it commit any UBC resources. Any project that the government may choose to support would be subject to the standard UBC capital approval process.

The Board is asked to consider the proposed Five-Year Capital Plan projects within the context of the University's long-range priorities and current goals and to approve the Five-Year Capital Plan for submission to PSFS.

## Five-Year Capital Plan

UBC has developed a jointly funded Capital Plan which addresses core academic and student housing needs, aligns with Provincial priorities, and was developed in accordance with the University's established Capital Planning Principles. The proposed projects were selected by the UBC Executive based on their potential to contribute to the University's strategic priorities, and operational performance and risk mitigation priorities. These projects were prioritized from a longer list of Academic and Student Experience Facilities and IT projects identified through on-going consultation with Faculties and Departments.

The full list of projects was evaluated and prioritized using an assessment model that considers how each project contributes to the University's strategic objectives, and operational performance and risk mitigation objectives. The prioritization criteria are as follows:

### 1) University Strategic Priorities

- Support for President's Academic Excellence Initiative (PAEI) – 10% weighting
- People & Places – 15%
- Research Excellence – 30%
- Transformative Learning – 30%
- Local & Global Engagement – 15%

### 2) Operational Performance and Risk Mitigation

- Health & Safety (e.g., seismic risk) – 25%
- Performance & Reliability (e.g. deferred maintenance) – 25%
- Legal / Regulatory / Reputation – 25%
- Business Case – 25%

Final selection of recommended projects for the Five-Year Capital Plan included consideration of additional factors such as alignment with government priorities, funding potential, inter-generational and inter-campus equity, current state of project development, and other strategic considerations.

Input on the capital planning process and capital facilities priorities was received from the following groups:

- Indigenous Partners – Musqueam (UBCO has engaged in recent and extensive consultation with Okanagan Nation Alliance regarding proposed capital projects)
- UBCV Committee of Deans
- Okanagan Leadership Council (AVPs and Deans)
- UBCV Property & Planning Advisory Committee
- UBCV Senate Academic Building Needs Committee
- UBCO Senate Academic Building & Resources Committee
- Vancouver Subcommittee of the Council of Senates Budget Committee
- Alma Mater Society and UBC Students' Union Okanagan
- Graduate Student Society
- UBCV Facilities, UBC Okanagan Campus Operations
- UBC Properties Trust (for information)

The proposed UBC Five-Year Capital Plan includes priority academic, IT and student housing projects totalling \$1,756 million with a request to the Provincial Government for \$1,408 million in funding. Demolitions or renovations associated with the new construction would reduce UBC’s deferred maintenance by \$172 million and improve seismic ratings on specific buildings. In addition, the progressive construction standards that UBC uses will support the Climate Action Plan 2030 by reducing the greenhouse gas emissions as well as energy and water use on the campuses. The approved Five-Year Capital Plan will be submitted to the Ministry of Post-Secondary Education and Future Skills in July 2023.

**UBC Five-Year Capital Plan: Priority Projects**

The UBC Five-Year Capital Plan is a short-list of strategic academic projects (both facilities and IT) and proposed student housing projects that support UBC’s priorities and focus on transformative learning and research excellence on both campuses. The list of projects is intended to align with Provincial government priorities such as undergraduate teaching, facility asset renewal, technology, health, economic development, and student housing. These projects are shown in the context of UBC’s current list of Facilities Priorities (Academic, Student Experience, Campus Operations, Sustainability & Resilience) which is presented at the April and September Board meetings in the Capital Projects Update report.

As careful prioritization of proposed capital projects is critical to ensure that limited capital is directed to help UBC achieve its academic goals, these projects have been ranked to align with UBC’s strategic and operational objectives. The top two UBCV projects – Chemistry Laboratory Complex and Mathematics Building – highlight the critical need for improved and expanded space to support foundational undergraduate teaching and to address deteriorating and vulnerable facilities. The top UBCO project – the Resilient Infrastructure Testing Facility – will provide critical high head research and testing space for engineering disciplines. The Chemistry Laboratory Complex project is central to many undergraduate programs at UBC, including those in fundamental sciences, health sciences, and engineering. As such, it is key to advancing UBC’s and the province’s ambitious goals in the areas of climate action, sustainability and health. It is also an important project for mitigating the campus seismic risk.

The proposed UBC Five-Year Capital Plan includes student housing projects for the first time. PSFS has advised that proposed new student housing projects now need to be included on the Five-Year Capital Plan prioritized project list, although they will be evaluated separately from academic building projects. The two proposed UBC student housing projects – one on each of the UBC Vancouver and Okanagan campuses – total \$328 million. Accessing lower-cost government financing or capital funding (announced as part of the Provincial budget in February 2023) is critical to support these student housing projects.

Also for the first time, IT capital projects are included. For this year, the UBC Campus Network Refresh/Modernization, a \$3 million project benefitting both UBCV and UBCO, has been identified as the top priority project. As with the housing projects, IT projects will be evaluated separately.

The list of proposed projects are shown in Table 1: UBC Five Year Capital Plan: Academic and Student Housing Priorities and are described in more detail in Supplemental Materials 3: UBC Five Year Capital Plan Academic Facilities and Student Housing Priorities Project Descriptions.

**Table 1: UBC Five-Year Capital Plan: Academic Facilities and Student Housing Priorities**

UBC Campus	Project	Delivery <sup>1</sup>	Cost in \$ millions	Proposed Funding in \$ millions	Request to PSFS in \$ millions	Reduced Deferred Maintenance in \$ millions
Vancouver	Chemistry Laboratory Complex <sup>2</sup>	Sep-27 May-29	<b>\$315</b>	Government \$236 UBC \$ 79	\$236	\$94.6
Okanagan	Resilient Infrastructure Testing Facility - UBCO	Jan-25	<b>\$15</b>	Government \$15	\$15	NA
Vancouver	Mathematics Building <sup>2</sup>	Jan-27	<b>\$135</b>	Government \$101 UBC \$ 34	\$101	\$51.9
Vancouver	Applied One <sup>2</sup>	Sep-27	<b>\$314</b>	Government \$235 UBC \$ 79	\$235	\$25.3
Vancouver	MED-1	Sep-28	<b>\$624</b>	Government \$468 UBC \$156	\$468	NA
N/A <sup>3</sup>	Master of Physical Therapy – Master of Occupational Therapy Expansion – Kelowna	Aug-26	<b>\$30</b>	Government \$30	\$30	NA
Vancouver	Place Vanier / St. John’s College Student Residence Redevelopment & Expansion – Phase 1 & 2	Sep-27 Sep-29	<b>\$265</b>	Government \$265 (combination of loan and grant)	\$265	TBD
Okanagan	UBCO Student Housing Expansion – Phase 1	Sep-27	<b>\$55</b>	Government \$55 (combination of loan and grant)	\$55	NA
Okanagan & Vancouver	UBC Campus Network Refresh/Modernization	Apr 2026	<b>\$3</b>	Government \$3	\$3	NA
<b>Total</b>			<b>\$1,756</b>		<b>\$1,408</b>	<b>\$172</b>

1 - These target completion dates assume project funding approval by March 31, 2024.

2 - The construction of each of these buildings allows UBC to address one or more of its higher risk seismic buildings on the Vancouver campus.

3 – The proposed project is a Faculty of Medicine project in the Interior Health region. The project location may be near Kelowna General Hospital or on the UBCO campus.

**PRESENTATIONS**

1. UBC Five Year Capital Plan 2024-25 to 2028-29

**SUPPLEMENTAL MATERIALS (optional reading for Governors)**

1. Academic Priorities – Facilities and IT Projects
2. Student Experience and Campus Operations, Sustainability & Resilience Project Priorities
3. UBC Five-Year Capital Plan Academic and Student Housing Priorities Project Descriptions

# **UBC Five-Year Capital Plan 2024-2025 to 2028-2029**

June 15, 2023

**John Metras, Associate Vice-President Facilities**



# Introduction and summary



Comprehensive annual capital planning process:

- In accordance with Capital Planning Principles
- In alignment with Provincial priorities
- Opportunity to highlight UBC's capital priorities to government for potential funding
- Capital plan will be submitted to PSFS in July

# Campus Planning and Capital Planning



- **Campus Vision 2050** is a comprehensive, 2.5-year public planning process that Campus & Community Planning is undertaking to update two key land use policy documents for the Vancouver campus which will guide campus planning.
- The **Facilities Capital Planning & Prioritization** process is an annual process that prioritizes proposed major capital academic building projects and student housing projects.

# Capital Project Prioritization Process



## Evaluation criteria & weighting:

### 1. University Strategic Priorities (100%)

- Support for Academic Renewal – 10% weighting
- People & Places – 15% weighting
- Research Excellence – 30%
- Transformative Learning – 30%
- Local & Global Engagement – 15%

### 2. Operational Performance & Risk Mitigation (100%)

- Health & Safety (e.g. seismic risk) – 25%
- Performance & Reliability (e.g. deferred maintenance) – 25%
- Legal / Regulatory / Reputation – 25%
- Business Case – 25%



# Project prioritization criteria

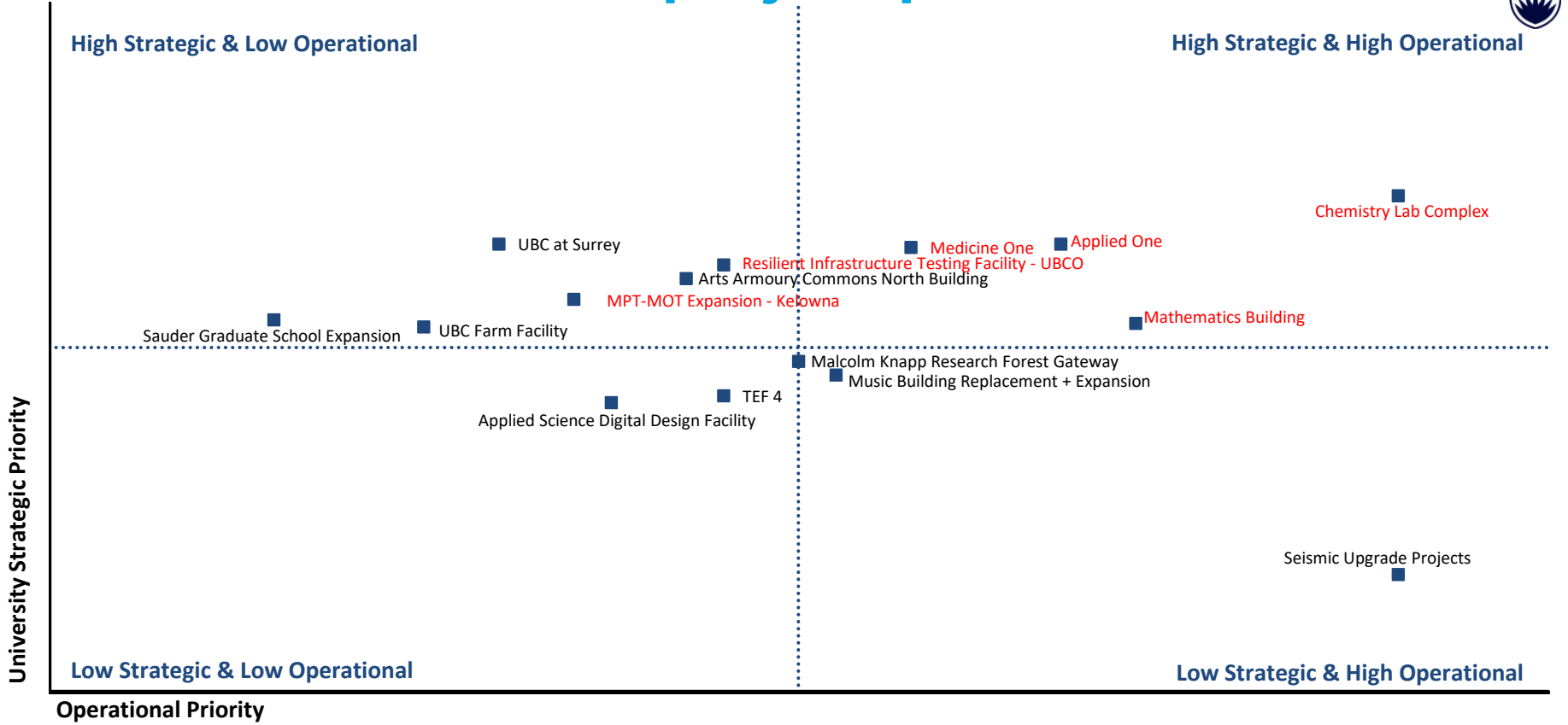


Embedded in the evaluation criteria are the key themes and strategies from UBC's strategic plan *Shaping the Next Century 2018-2028*, which are supported by UBC's policies and plans, for example:

- Climate Action Plan 2030
- Indigenous Strategic Plan
- Strategic Equity and Anti-Racism Framework and Roadmap (incorporating accessibility, equity, inclusion, and anti-racism priorities)

Planning for individual projects includes consideration of intensification of existing space and potential for remote work.

# Active academic project prioritization matrix



Projects highlighted in red included in proposed UBC Five-Year Capital Plan.

# Capital Plan Consultation



## Input on capital priorities & planning process from:

- Indigenous Partners – Musqueam (Okanagan Nation Alliance)
- Committee of Deans/Deans' Council (Vancouver and Okanagan)
- Property & Planning Advisory Committee
- UBCV Senate Academic Building Needs Committee
- UBCO Senate Academic Building & Resources Committee
- Vancouver Subcommittee of the Council of Senates Budget Committee
- Alma Mater Society / UBC Student's Union Okanagan
- Graduate Student Society
- UBCV Facilities / UBCO Campus Operations
- UBC Properties Trust (for information)

# Executive review for Five-Year Capital Plan

- Project scoring is undertaken by the **Capital Planning Working Group** which is composed of academic and operational leaders.
- The prioritization scoring model is “needs-based”. Funding potential is therefore not a criterion.
- The prioritization model is used as a tool by the **UBC Executive**, who make the final selection of projects for the Five-Year Capital Plan.
- **Other Factors Considered in Addition to Prioritization Scoring:**
  - Alignment with government priorities (health, indigenous relations)
  - Other funding potential (donors, research grants)
  - Impact on University rankings (what will move the bar farthest)
  - Impact per dollar invested (biggest bang for the buck)

# Proposed Five-Year Capital Plan Projects



UBC Campus	Project	Delivery <sup>1</sup>	Cost in \$Ms <sup>2</sup>	Request to PSFS in \$Ms <sup>3</sup>
Vancouver	Chemistry Laboratory Complex <sup>2</sup>	Jan-27 May-29	\$315	\$236
Okanagan	Resilient Infrastructure Testing Facility - UBCO	Jan-25	\$15	\$15
Vancouver	Mathematics Building <sup>2</sup>	Jan-27	\$135	\$101
Vancouver	Applied One <sup>2</sup>	Sep-27	\$314	\$235
Vancouver	MED-1	Sep-28	\$624	\$468
N/A	MPT-MOT Expansion - Kelowna <sup>3</sup>	Aug-26	\$30	\$30
Vancouver	Place Vanier / St. John's College Student Residence Redevelopment & Expansion Phases 1 & 2 <sup>2</sup>	Sep-27 to Sep-29	\$265	\$265 (loan/grant)
Okanagan	UBCO Student Housing Expansion Phase 1	Sep-27	\$55	\$55 (loan/grant)
Okanagan & Vancouver	UBC Campus Network Refresh/Modernization	Apr-2026	\$3	\$3
	<b>Total</b>		<b>\$1,756</b>	<b>\$1,408</b>

1 - These target completion dates assume project funding approval by March 31, 2024.

2 – The construction of each of these buildings allows UBC to address one or more of its higher risk seismic buildings on the Vancouver campus.

3 – The proposed project is a Faculty of Medicine project in the Interior Health region. The project location may be near Kelowna General Hospital or on the UBCO campus.

# Discussion and decision points



Approval for the UBC Five-Year Capital Plan (2024/25 to 2028/29) for submission to the Ministry of Post-Secondary Education & Future Skills.

**Supplemental Materials 1: Academic Priorities – Facilities and IT Projects**

Academic Facilities Projects	Faculty / Department	Cost (\$000s)
<b>Active Academic Priorities</b>		
Chemistry Lab Complex	Science	\$315,000
Resilient Infrastructure Testing Facility - UBCO	School of Engineering	\$15,000
Mathematics Building	Science / UBCIT	\$135,000
Applied One	Applied Science	\$314,000
MED-1	Medicine	\$624,000
MPT-MOT Expansion - Kelowna	Medicine	\$30,000
Applied Science Digital Design Facility	Applied Science	\$12,900
Arts Armoury Commons North Building	Arts	\$93,300
Malcolm Knapp Research Forest Gateway	Forestry	\$16,500
Music Building Replacement & Expansion	Arts	\$205,900
Sauder Power House Expansion	Sauder	\$120,000
Seismic Upgrade Projects <sup>1</sup>	Campus-wide	\$562,000
Technology Enterprise Facility 4 (TEF 4) - UBCPT	Multiple	\$25,500
UBC Farm Facility	Land and Food Systems	\$5,600
UBC at Surrey	Multiple	TBD
<b>Future Priorities</b>		
Geography Building	Arts	\$81,600
Hotel & Academic Conference Centre	SHCS	TBD
Innovation UBC Hub	VP Research	\$52,500
Innovation Precinct 2 - UBCO	Multi-Faculty	TBD
Library Parc Module 2	UBC Library/Multi-Faculty	TBD
School of Public Policy & Global Affairs	Arts	\$45,400
<b>Total Academic Facilities</b>		<b>\$2,654,200</b>

<sup>1</sup> High seismic risk buildings not included for upgrade or demolition through other planned capital projects or for future renewal through the Routine Capital program. The Province was briefed directly on UBC’s seismic plan and the need for seismic plan funding in July 2019.

Academic IT Projects	Faculty / Department	Cost (\$000s)
UBC Campus Network Refresh / Modernization	UBCIT	\$3,000
<b>Total Academic IT Projects</b>		<b>\$3,000</b>

Academic projects are potentially funded through government contributions, donors, Faculty operating budgets and/or Academic Capital Fund (Central operating budget). **Projects highlighted in red are proposed for the UBC Five-Year Capital Plan** submitted annually to the Ministry of Post-Secondary Education and Future Skills (PSFS) for potential government funding.

**Supplemental Materials 2: Student Experience and Campus Operations, Sustainability & Resilience Project Priorities**

Student Experience Projects	Faculty / Department	Cost (\$000s)
Place Vanier / St. John’s College Student Residence Redevelopment & Expansion – Phase 1 & 2 (1,200 Beds)	Student Housing & Community Services (SHCS)	\$265,000
Okanagan Student Housing Expansion (250 beds)	SHCS	\$55,000
Armouries Commons (1,000 beds)	SHCS	\$200,000
Integrated Performance Centre (Strength & Conditioning)	Athletics & Recreation	\$18,000
Thunderbird Stadium Redevelopment	Athletics & Recreation	\$58,300
UBCO New Field House	UBCO Athletics	\$18,700
UBCO Students’ Union	UBCO Students’ Union	TBD
War Memorial Gymnasium Renew or Replacement	Athletics & Recreation	TBD
<b>Total Student Experience Projects</b>		<b>\$615,000</b>

Student Experience facilities projects are funded through a variety of sources including internal revenue generation (e.g., student housing rents), government funding and financing, donors, and student fees. **Projects highlighted in red are proposed for the UBC Five-Year Capital Plan** submitted annually to the Ministry of Post-Secondary Education and Future Skills for potential government funding or financing.

Campus Operations, Sustainability & Resilience Projects	Faculty / Department	Cost (\$000s)
Decarbonizing the UBCV District Energy System	Energy & Water Services	\$65,300
South Campus Works Yard Phases 1 – 3	Municipal Services	\$32,000
UBCO GEO Air Source Heat Pump Plant	Campus Operations	\$4,800
<b>Total Campus Operations, Sustainability &amp; Resilience Projects</b>		<b>\$102,100</b>

Campus Operations, Sustainability & Resilience projects are funded through a variety of sources including government contributions, Central operating budget, operational savings and Infrastructure Impact Charges (IICs).



### Supplemental Materials 3: UBC Five-Year Capital Plan Academic and Student Housing Priorities Project Descriptions

Note that some minor edits may be made to these project descriptions prior to final submission to PSFS.

#### **CHEMISTRY LAB COMPLEX**

**Area: 25,537 GSM (274,870 GSF)**

**Estimate: \$315 million**

**Faculty/Department:** Science - Chemistry

This is a single teaching and research project which will be implemented in two phases to facilitate siting and funding. Costing for each phase includes demolition of existing buildings.

#### **Phase One – Chemical Sciences Undergraduate Teaching Building**

**Area: 14,177 GSM (152,590 GSF)**

**Phase One Estimate: \$185.5 million**

#### **Phase Two - Interdisciplinary Building for Research in Sustainable Chemistry**

**Area: 11,360 GSM (122,280 GSF)**

**Phase Two Estimate: \$129.5 million**

**Description/Rationale:** UBC proposes to build a 25,537 GSM expanded replacement facility for three failing Chemistry buildings that house undergraduate teaching and research. Despite best efforts to maintain functionality, the Chemistry buildings are deteriorating, energy-intensive, and highly vulnerable in a seismic event. Phase One will build a new Chemical Sciences Undergraduate Teaching Building on the Wesbrook site, which will allow subsequent demolition of Chemistry B and C Buildings. Phase Two will build a new Interdisciplinary Building for Research in Sustainable Chemistry building on the Chemistry B site, allowing for the subsequent demolition of the Chemistry A (Chemistry Physics) Building.

**Replacement of these deteriorated and seismically vulnerable buildings is critical. Not proceeding with this project poses a risk to UBC's ability to deliver undergraduate Chemistry teaching.**

#### Phase One – Chemical Sciences Undergraduate Teaching Building:

As STEM education becomes more interdisciplinary, undergraduate programs within the Faculty of Science and beyond have increased requirements for foundational chemistry skills. Core chemistry courses are mandatory for most UBC Science, Applied Science (including Biomedical Engineering), Forestry, Land and Food Systems, Medicine, Dentistry, and Pharmacy student's education. In addition to core courses, advanced courses are essential to prepare students for Medicine and other health-related professional programs, and for interdisciplinary work with Biomedical Engineering and Pharmaceutical Sciences.

At its core, chemistry is an experimental science. Only through lab experiences can students connect the importance of experimentation to scientific discovery and learn valuable practical training. Employers need graduates who have the opportunity to conduct practical research and develop skills to solve problems, and who have been trained in sophisticated, state-of-the-art techniques that relate to analytical chemistry, nanomaterials, new drug discovery, and industrial catalysis. The demand for chemistry courses has risen dramatically over the last ten years. The Department of Chemistry currently teaches over 4000 students per year, approximately 40% of whom are in other faculties, but program growth and innovative curriculum development have been severely limited by the size, layout, age, condition, and inadequate infrastructure of the existing 1960s era Chemistry B and C teaching laboratory facilities. Faculty have been exemplary in adapting lab experiences to suit existing conditions, but many lab experiments have been removed from the curriculum, and others have been designed to minimize use of chemicals due to the poor ventilation and inability to use many of the existing fume hoods. The facilities will no longer fully support the program growth and innovation required to support BC's growth industries. The current deteriorating buildings have reached the end of their service life, and restrict innovative pedagogical development, growth in student numbers and programs such as Biomedical Engineering, and UBC priorities such as inclusion and collaboration.

The proposed new building will provide safe, modern labs to support modern pedagogy, and will enhance opportunities for teaching and research collaboration, and for enriched, team-based learning experiences through chemistry computational and robotics space, an undergraduate Capstone research maker space for interdisciplinary projects with a chemistry component, chemistry maker space, and a state-of-the-art shared instrument facility. Spaces that integrate teaching and research and provide enhanced training opportunities will ensure that the trainees produced by UBC Chemistry will be able to support and enhance BC's economy. The building will include replacement of the existing, large, general use lecture theatres in Chemistry B, C and Wesbrook which currently place large student populations at risk in a seismic event, and Faculty of Science Co-op and Advising offices.

#### Phase Two - Interdisciplinary Building for Research in Sustainable Chemistry:

Research focused on global challenges such as climate change mitigation, alternative energy and sustainability are core to the UBC Chemistry's mission. The existing Chemistry research space is insufficient to grow this research, and the Chemistry A Building's failing infrastructure and poor configuration cannot support basic research needs, let alone the collaborative, inter-disciplinary and inter-generational imperatives for advancing innovation. Innovative, updated and expanded research space is critical to supporting Chemistry's growth and vision, and to attracting and retaining the creative minds that will uphold UBC's leadership in this critically important area of research.

The research activities planned for the Chemistry A replacement building focus on key problems affecting BC and the globe. The new research space will be dedicated to four core research themes: Climate/environmental science; Sustainable and green chemistry; Materials for clean energy; and Chemistry for health and biotechnology. UBC Chemistry already has significant expertise in these areas, including world-class researchers. The replacement of existing facilities with state-of-the-art laboratories will facilitate more integration between the teaching and training programs, support greater interdisciplinary research collaboration and help create more partnerships with industry. Collectively, these will be a catalyst for developing innovative solutions to global issues and to preparing graduates to provide meaningful contributions to BC's economic growth.

#### **Type/Location:** UBC Vancouver.

The proposed location for the Phase One Teaching Building is the site of the current Wesbrook Building, which is end of life, seismically vulnerable, and slated for demolition. The Wesbrook site is at the corner of University Blvd and East Mall, in close proximity to the existing Chemistry complex. The proposed site received approval from the New Building Site Selection Committee Nov. 16, 2020. Demolition of Chemistry B and C Buildings will follow relocation of teaching functions to the new building.

Phase Two will build a new research building on the Chemistry B site at University Blvd and Main Mall, which will consolidate Chemistry research along Main Mall and allow for the demolition of Chemistry A Building. This very prominent site at the corner of University Blvd and East Mall will then be available for redevelopment.

Boundaries and setbacks for both proposed Chemistry sites will be developed in consultation with Campus and Community Planning.

#### **Facility Condition Index/Risks:**

Chemistry A, B and C also use significantly more energy than new baseline buildings, and replacing these buildings will have a measurable impact on achieving UBC's Climate Action Plan goals. Replacement of the buildings is also critical for mitigation of serious seismic risk and deferred maintenance:

Phase One - Chemistry B/South and Chemistry C/East are rated seismic risk Tier V and Tier III respectively. Wesbrook Building, which will be demolished to accommodate the new Teaching Building, is rated Tier IV. Replacement of these three buildings will result in the mitigation of \$61.81 million in deferred maintenance and will greatly improve life safety on campus.

Phase Two – Chemistry A (built in 1989, FCI 0.68) is rated seismic risk Tier V. Replacement will result in the mitigation of \$29.48 million in deferred maintenance and will greatly improve life safety.

Associated Deferred Maintenance (DM)	DM in \$Ms	FCI	Built	Seismic Tier
<b>Phase 1</b>				
Chemistry B Chemistry South( Bldg 148)	19.60	0.63	1959	IV
Chemistry C Chemistry East (Bldg 144)	12.57	0.68	1963	III
Chemistry Storage	0.22	0.59	1956	IV
Wesbrook (Bldg 864)	29.64	0.64	1949	V
Wesbrook Annex (Bldg 867)	3.07	0.58	1983	II
<b>Subtotal</b>	<b>\$ 65.10</b>			
<b>Phase 2</b>				
Chemistry A Chemistry Physics (Bldg 447)	29.48	0.68	1989	IV
<b>Subtotal</b>	<b>\$ 29.48</b>			
<b>Total</b>	<b>\$ 94.58</b>			

**Program:** Resource Planning Group (RPG) has developed Master Programs for the project, which will be updated in 2023.

Phase One – Program includes large lecture theatres, undergraduate teaching laboratories, lab support and instructors’ offices, undergraduate resource centre, interdisciplinary undergraduate capstone research space, Faculty of Science Co-op and Science Advising.

Phase Two – Program includes research laboratories and lab support, faculty offices, collaboration spaces, and core facilities including the Biological Services Lab, NMR facility, and Chemistry Stores. This program may be expanded to include space for interdisciplinary collaboration with industry to more quickly advance solutions to global issues.

**Funding:** The 2022 UBC 5-Year Capital Plan included the full Chemistry Laboratory Complex as the number one priority project and requested \$214m (75% of projected costs) from the BC Ministry of Post-Secondary Education and Future Skills (PSFS). The Faculty of Science will work with the central administration to identify funding sources for the balance of the budget, which may include donors, Faculty resources, and central support of debt servicing.

**Current Approval Level:** Executive 1 approval for the full concept was received on November 27, 2018, and Executive 2 approval for Phase One was received December 1, 2020. The project was no. 1 on the UBC Five-Year Capital Plan submitted to PSFS in July 2022 and is the top priority for the Faculty of Science.

**RESILIENT INFRASTRUCTURE TESTING FACILITY - UBCO****Area: 1,206 GSM (12,980 GSF)****Estimate: \$15 million****Faculty/Department:** School of Engineering

**Description/Rationale:** The proposed facility will include state-of-the-art experimental tools that will enable School of Engineering researchers to investigate and develop resilient infrastructure that mitigates the effects of fire, wind, temperature, seismic, tsunami, and floods. These tools will also allow inter-disciplinary research related to wind/solar energy production, hydrogen energy, healthy and efficient buildings, and low-carbon transportation. It is anticipated that the facility would eventually be equipped with a temperature-controlled boundary layer wind tunnel for scale-model testing, debris impact testing, and cold climate/fire structural testing equipment. The facility will also include space for student-teams and teaching.

**Type/Location:** Kelowna, in an existing building that UBC Properties Trust has acquired close to the UBC Okanagan campus Innovation Precinct.

**Facility Condition Index/Risks:** N/A

**Program:** The facility will include a high-bay research space, equipped with an overhead crane, a strong floor and a strong wall. The main floor space will also include expansion space for future research equipment such as a shake table. Multi-use space on the first level will be used for technicians' offices, meeting room, control room, tool room, washroom, curing room, and an instrumentation room.

**Funding:** TBD

**Current Approval Level:** No approvals to date.

**MATHEMATICS BUILDING**

**Area: 15,655 GSM (168,500 GSF)**

**Estimate \$134.8million**

**Faculty/Department:** Science - Mathematics, Provost’s Office – IT Services

**Description/Rationale:** The proposed Mathematics Building will be a 15,655-gross square metre (168,500 gross square foot) facility that replaces the end-of-life Mathematics, Mathematics Annex and L.S. Klinck Buildings, and consolidates the Mathematics Department in a single new building. The Department of Mathematics at UBC is one of the strongest mathematics departments in Canada. The Department has strong connections with other departments and institutes at UBC, and has a major role in the cross-disciplinary Institute of Applied Mathematics (IAM), with members from across Science, Applied Science and other UBC faculties.

The layout, age, condition, and inadequate infrastructure of the existing buildings restrict pedagogical development and growth in student numbers, and will not support program growth and cohesion. The Mathematics Building and the Mathematics Annex are 2-storey wood frame structures with exterior stucco and interior plaster finishes which were constructed in 1924-5 and are now at the end of their service life. The LS Klinck Building and Addition have limited universal accessibility, lack a sprinkler system, and have been identified as Tier IV seismic risk. Although building systems and finishes have been partially upgraded over time as needs have arisen or as renovations have occurred, these buildings have large amounts of deferred maintenance. A new building will eliminate the remaining deferred maintenance and support the University’s seismic resilience and climate action planning.

The proposed plan is to build an expansion and replacement facility to address teaching and research needs, fulfill capacity requirements and provide up to date, flexible space with full infrastructure capability and the potential for greater collaboration. The project will include replacement of lecture theatres and classrooms that serve the wider precinct, and will house a portion of the UBCIT staff currently working in LS Klinck. A complicated scenario of swing space and consequential moves must accompany this project.

**Type/Location:** UBC Vancouver. The new building will be on or near the site of the existing Mathematics and LS Klinck Buildings on West Mall, with exact location to be determined through ongoing consultation with relevant UBC stakeholders. The instruction of mathematics crosses many disciplines and this central location will continue to provide easy access for the majority of UBC students.

**Facility Condition Index/Risks:** Demolition of these 3 buildings will eliminate \$51.97 million in deferred maintenance.

Associated Deferred Maintenance	Deferred Maintenance in \$Ms	FCI	Built
Mathematics (Bldg 518)	10.52	0.79	1924
Mathematics Annex (Bldg 519)	4.45	0.85	1925
LS Klinck & Addition (Bldg 308, 308-1)	37.00	0.80	1947
<b>Total</b>	<b>\$51.97</b>		

**Program:** A 2012 Mathematics Master Program was updated in 2017.

**Funding:** Proposed funding Government, donors, UBC

**Current Approval Level:** Executive approval 1 for the Mathematics Building was received in May 2017. The project was on the UBC Five-Year Capital Plan submitted to PSFS in July 2022.

**APPLIED ONE****Area: 31,000 GSM (333,680 GSF)****Estimate: \$313.5 million****Faculty/Department:** Applied Science

**Description:** The proposed Applied One building will be an innovative environment for leading-edge approaches to learning, research, knowledge transfer and community engagement that is critical to supporting the Faculty of Applied Science strategic plan. Applied One will realize the Faculty's aspirations to transform the way academic units work together to address global grand challenges that require complex solutions, such as climate change, urbanization, and reconciliation with historic systems of injustice. The new facility is also required to support the planned growth in the undergraduate and graduate student populations required to address the significant demands for engineering and design education and increased opportunities in the labour market. The Faculty's multiple aging and deteriorating buildings cannot support this growth or the innovative pedagogy envisioned.

Foundational to the concept of the Applied One building is the Faculty of Applied Science's commitment to creating a positive impact through research and teaching that ripples out across multiple scales – from academic units, to UBC, and out to the world. Applied One will deliver on the need for spaces that support diffusive interdisciplinary research, experiential learning, and creative partnerships, and will be designed in a way that compels new learning in spaces that foster creative exploration, intercultural competence and technical innovation. Anticipated project outcomes also include the following:

- Applied One will consolidate shared resources and expertise from the entire Faculty, as well as provide new homes for the School of Architecture and Landscape Architecture (SALA), School of Community and Regional Planning (SCARP), the Norman B. Keevil Institute of Mining Engineering, and Department of Materials Engineering.
- Through providing new space to work in new ways, Applied One is intended as a catalyst for the growth of the Faculty of Applied Science.
- Beyond UBC, Applied One aims to provide dedicated spaces to connect with public and private industry programs in order to forge links between the Faculty and the world.

**Type/Location:** UBC Vancouver. The proposed site is on Main Mall directly across from the Fred Kaiser Building, and encompasses the current footprint of the Barn and Frank Forward, as well as some extension southward towards the MacMillan Building. Site parameters will be further explored with Campus and Community Planning in preparation for presentation at the New Building Site Selection Committee.

**Facility Condition Index/Risks:** Applied Science occupies space in over 25 buildings, many of which are in aging and deteriorating condition. Units of Applied One will vacate existing facilities in the Frank Forward Building, Lasserre Building, West Mall Annex, LARC Annex, MacMillan Building, and Ponderosa Annex B. This presents a significant opportunity to free up facilities for renewal or potentially the land for redevelopment. The Frank Forward Building (Mining & Materials Engineering) has an FCI of 0.75 (critical) and is rated as a Tier V seismic risk (very high risk). The Frederic Lasserre Building (existing home of majority of SALA and SCARP programs) has an FCI of 0.52 (poor), and the Landscape Architecture Annex has an FCI of 0.47 (poor).

**Program:** The Faculty is developing a Functional Program based on providing space for Mining Engineering, Materials Engineering, SALA, SCARP, Manufacturing Engineering, Integrated Engineering, teaching facilities, integrated maker space and shop space, shared learning, public engagement, and student services. Applied One will also integrate the daycare currently located in the Barn.

**Funding:** Faculty and Central (through increased tuition revenues), donor, Government

**Current Approval Level:** Executive 2 approval was received in December 2022. The project was on the UBC Five-Year Capital Plan submitted to the Ministry of Post-Secondary Education and Future Skills (PSFS) in July 2022.

**MED-1****Area: 39,170 GSM (421,610 GSF)****Estimate: \$623.7 million****Faculty/Department:** Medicine

**Description:** The Faculty of Medicine (FOM) proposes a new flagship Medicine 1 Building (MED-1) at the UBC Vancouver campus to provide much-needed flexible, state-of-the-art, high infrastructure, innovative research and teaching space and to expand its translational research capacity. The facility will provide centralized facilities and resources such as select core platforms; clinical, lab and incubator spaces for existing researchers and approximately 20 new hires; engagement space for faculty and staff coming from other FoM/VCH facilities; interactive common areas and specialized communication and collision areas for interdisciplinary exchange of ideas and collaboration; high head and high infrastructure labs for strategic hires; teaching laboratories; and a permanent home for the FoM Dean's Office (administrative staff). The new building is targeted to provide innovative, sustainable, flexible and interactive space for new types of research, teaching and synergy with partners in industry. It will consolidate existing infrastructure and equipment and will provide opportunities for collaboration amongst key stakeholders who are currently spatially segregated.

**Type/Location:** UBC Vancouver. FOM proposes to locate MED-1 on the open site adjacent to the Life Sciences Center (LSC) at the northwest corner of Wesbrook Mall and Agronomy Road. This location is central to the health precinct and is in close proximity to Life Sciences Centre (LSC), Djavad Mowafaghian Centre for Brain Health (DMCBH), UBC Hospital, Pharmaceutical Sciences/Centre for Drug Research & Development (CDRD), and the School of Biomedical Engineering (SBME). It will be important from a land use efficiency perspective to fully utilize the site. This may mean incorporating space needs for other related programs and Faculties into the new building and special site density considerations. This site was approved by the New Building Site Selection Committee in May 2021, with the understanding that height and density parameters would be explored through an indicative design process, for further review with Campus & Community Planning.

**Facility Condition Index/Risks:** The Faculty of Medicine is experiencing space and facilities challenges at the Point Grey campus, which must be addressed to effectively support the Faculty's strategic pillars of education, research, organization and partnership. Research, teaching and administrative units occupy approximately 65,000 net square metres of laboratory and office space over thirteen UBC academic and four Vancouver Coastal Health buildings at the Point Grey campus, mostly within the Health Precinct. Approximately 40% of this space is in aging, deteriorating buildings with outdated space configurations and inadequate infrastructure to support leading edge, innovative research and academic programs.

**Program:** A master program was developed in 2021 that includes teaching labs, research labs, super core platforms, engagement and collaboration zones, offices, and a biotechnology incubator.

**Funding:** TBD, notionally a combination of Government, Faculty, Central and donor funding.

**Current Approval Level:** Executive 1 approval was received December 10, 2019. The project was on the UBC Five-Year Capital Plan submitted to PSFS in July 2022.

**MASTER OF PHYSICAL THERAPY & OCCUPATIONAL THERAPY – EXPANSION - KELOWNA**

**Area: 2,409 GSM (25,930 GSF)**

**Estimate: \$30 million**

**Faculty/Department:** Medicine – Physical Therapy and Occupational Therapy

**Description/Rationale:** The rapidly growing Interior Health region population is severely underserved by Physical Therapists and Occupational Therapists. New graduates are in high demand, and research has shown that health providers are more likely to work where they are trained. The Ministry of Post-Secondary Education and Future Skills (PSFS) has indicated support for the expansion and distribution of the Masters of Physical Therapy (MPT) and the Masters of Occupational Therapy programs in the Interior Health region. Consultation between PSFS and the UBC Faculty of Medicine Southern Medical Program is ongoing for planning to accommodate the first of two proposed 20-student cohorts in 2026.

PSFS has informally indicated that there may be some capital funding to support renovations to house these programs. Given UBCO’s significant space constraints, UBCO is working with local realtors to determine if there are options to purchase space in an existing commercial building, as PSFS does not have capacity to support an operating lease. The FoM’s experience with distributed medical and PT/OT education has led to development of specific infrastructure and architectural, mechanical, electrical and acoustic requirements to enable full audio visual and information technology functionality between sites. This infrastructure is uncommon in commercial buildings, so it is anticipated that renovations required will be significant. This approach is similar to that developed for the MOT and MPT Fraser Health Surrey expansion, currently in construction.

**Type/Location:** Kelowna. UBC is currently working with UBC Properties Trust and local realtors to develop options.

**Facility Condition Index/Risks:** N/A

**Program:** The program for the Interior Health region MOT and POT programs is similar to that developed for the Fraser region MOT and POT expansion in Surrey. Space needs include teaching laboratories and multi-purpose space, seminar rooms and break-out rooms, student learning commons, a teaching and research clinic, research labs and offices for new faculty, and administration workspace.

**Funding:** Capital funding is anticipated from the Ministry of Post-Secondary Education and Future Skills.

**Current Approval Level:** In planning, as discussions with PSFS evolve.



**PLACE VANIER / ST. JOHN'S COLLEGE STUDENT RESIDENCE REDEVELOPMENT & EXPANSION – PHASE 1 & 2****Area:** TBD**Estimate:** \$265 million**Faculty/Department:** Student Housing and Community Services (SHCS)

**Description/Rationale:** This priority project honours UBC's ongoing commitment to support the student housing need in the context of significant demand (a waitlist of 6,000+) and the growing unaffordability of the region. One of the best near-term opportunities to address this need will be the redevelopment of the existing Place Vanier / St. John's College student housing sites. Redevelopment of these student housing sites is also an opportunity to mitigate the high seismic risk inherent in the existing Place Vanier buildings, improve energy performance and carbon footprint to align with UBC's Climate Action Plan (CAP) 2030, and to modernize and align with current goals around accessibility, inclusion and equity.

Student Housing and Community Services (SHCS) and Campus + Community Planning (C+CP) have commenced a process of testing, assessing feasibility and conducting early community engagement for the sites. Phases 1 and 2 of the Place Vanier / St. John's College Student Residence Redevelopment project are included in the Five-Year Capital Plan and include the following:

- Phase 1: 500 net new beds proposed at the St. John's College site (\$125 million)
- Phase 2: 700 new first-year beds proposed at the Place Vanier site, including 300 replacement beds and 400 net new beds (\$140 million)

Subsequent project phases will explore additional first-year, upper year, and graduate student beds through further development of the St John's College and Place Vanier site with a goal to eventually land approximately 3,800 beds on these sites (net increase of approximately 2,500 beds). Details will be determined through early community engagement and development of a detailed master plan for the project, including a phasing plan, which will aim to keep the majority of the units in service while adding capacity.

**Type/Location:** Place Vanier and St. John's College.

**Facility Condition Index/Risks:** Student housing is in a critical shortage at the Point Grey campus. Funding and financing of student housing growth will be challenging and UBC will need to consider alternative borrowing models, mortgage terms and/or an extended time frame to accomplish this goal. Probable Provincial funding/financing as per the 23/24 Provincial budget announcement is needed to accomplish this goal.

**Program:** The Place Vanier / St. John's College Redevelopment & Expansion detailed master planning for the overall site is in its initial stages and will inform the planning for Phase 1.

**Funding:** TBD – A combination of grant funding and loan financing is anticipated from the Province. The remaining funding will be a combination of SHCS and Central funding and financing.

**Current Approval Level:** Executive 1 approval was received for the overall concept in March 2023.

**UBCO STUDENT HOUSING EXPANSION – PHASE 1**

**Area:** TBD

**Estimate:** \$55 million

**Faculty/Department:** Student Housing and Community Services (SHCS)

**Description/Rationale:** UBC Okanagan is facing increasing student housing demand and affordability challenges. UBC has made a commitment to add more student housing at UBC Okanagan to address these challenges. There is a desire to add approximately 500 new upper year / graduate student housing beds across 2 projects at the UBC Okanagan campus.

Student Housing and Community Services (SHCS) and Campus + Community Planning (C+CP) have developed a high-level, two-phase concept to reach the campus housing goals. Phase 1 of the UBCO Student Housing Expansion project is included in the Five-Year Capital Plan and includes 250 net new beds for upper year students on a year-round contract. The capital cost for delivery is estimated to be \$55 million. Phase 2 will be an additional 250 net new beds for upper year students.

**Type/Location:** UBC Okanagan. Specific site is in planning.

**Facility Condition Index/Risks:** Student housing is in a critical crisis at the Kelowna campus. Funding and financing of student housing growth will be challenging and UBC will need to consider alternative borrowing models or mortgage terms to accomplish this goal. Accessing Government lower-cost financing or capital funding is critical for this project to proceed. The impact on UBC Okanagan student housing investment is not yet clear, however, there is optimism UBC will receive a fair share of this financing and/or funding.

**Program:** In planning.

**Funding:** TBD - A combination of grant funding and loan financing is anticipated from the Province. The remaining funding will be a combination of SHCS and Central funding and financing.

**Current Approval Level:** In planning, as discussions with PSFS evolve.

**UBC CAMPUS NETWORK REFRESH / MODERNIZATION****Estimate: \$3 million****Faculty/Department:** UBC IT

**Description/Rationale:** The University Data Network is used by every member of the UBC Community from all campuses and remote sites and is critical to UBC's operations. The University Data Network has an estimated 110,000 current users made up of students, faculty, staff, alumni, researchers, contractors, affiliated groups, teaching hospitals, etc. At present, UBCIT's network refresh and modernization programs target a 6 to 9-year replacement cycle but current funding and resources are insufficient to support the required level of refresh activity.

To address this shortfall and address the significant network risks, an enhanced network refresh/modernization project is proposed. The project scope includes:

- \$2.25 million for additional network hardware and associated maintenance agreements
  - Core/Edge Network Equipment
  - Network Software Maintenance Agreement
- \$750,000 for 3 additional resources (for 2 years) to help the network modernization/refresh team achieve the project objectives
  - Wireless Network Analyst
  - Network Systems Administrator
  - Senior Network Automation Programmer

This project will reduce the number of unplanned Data Network service outages at the University, and decrease resolution time. It will also support a more stable and secure University Data Network with standard operating procedures to maintain Network Cybersecurity, patching, and critical updates.

**Type/Location:** UBC Vancouver, Kelowna and remote sites.

**Facility Condition Index/Risks:** N/A

**Program:** N/A

**Funding:** TBD - Capital funding is requested from the Ministry of Post-Secondary Education and Future Skills.

**Current Approval Level:** No approvals to date.