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## FIVE-YEAR PLAN: 2017 - 2022

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INTRODUCTION

This document presents Simon Fraser University’s Five-Year Capital Plan for the construction of new facilities and the renewal of existing facilities and aging infrastructure.

The Ministry of Advanced Education (AVED/the Ministry) requests annual capital plan submissions from all public post-secondary institutions to provide a high-level understanding of public post-secondary institutional capital requirements and to develop priorities for future consideration. This Five-Year Capital Plan therefore outlines SFU’s capital requirements for new priority expansion projects, replacement/renewal projects and capital innovation projects.

The plan includes new projects totalling $357M aimed mainly at expanding the SFU Surrey Campus and enhancing accessibility to Aboriginal and First Nations communities. It also details investments in a portfolio of renewal projects that will significantly address SFU’s deferred maintenance liability as well as improve the functionality, reliability, efficiency and environmental performance of institutional facilities and infrastructure.

The selection of capital projects reflect the Provincial focus on jobs and economic development, international education, families and fiscal accountability. These investments are also in support of SFU’s vision as a leading engaged university and targeted to achieve institutional goals as they relate to improving learning conditions for students, improving research delivery areas, enhancing community social spaces and ensuring that SFU facilities are fiscally and environmentally sustainable.

The format for this Capital Plan is based on Ministry’s standardized template. As requested, SFU’s capital projects have been categorized and grouped into two lists.

The first list (Attachment 3) is the prioritized list of projects that AVED is expected to contribute funds to and which fall into any one of the following three categories:

1. New Priority Projects;
2. Whole Asset Replacement and Renewal Projects; or
3. Student Housing Projects.
A second list (Attachment 4) outlines Major On-going and Planned Self-Funded Projects.

Overviews of each new, replacement/renewal capital project are listed in order of their priority. Additional financial and cash flow information, as well as a list of ongoing/self-funded projects are provided in appendices.

SFU looks forward to working with the Ministry to achieve our shared mandate of providing the highest quality teaching, research and community service to the citizens and communities of British Columbia.
SFU has a vision to be the leading engaged university, as defined by its dynamic integration of innovative education, cutting-edge research, and far-reaching community engagement.

This vision has three components:

- **Engaging Students**: To equip SFU students with the knowledge, skills, and experiences that prepares them for life in an ever-changing and challenging world.

- **Engaging Research**: To be a world leader in knowledge mobilization building on a strong foundation of fundamental research.

- **Engaging Communities**: To be Canada’s most community-engaged research university.

As part of this vision, SFU has committed to the following set of principles. These guide the work and planning of the institution and have therefore also guided the selection of projects for the Capital Plan.

- **Academic and Intellectual Freedom**: SFU will be an open and inclusive university whose foundation is intellectual and academic freedom.

- **Diversity**: SFU will foster a culture of inclusion and mutual respect, celebrating the diversity and multi-ethnic character reflected amongst its students, staff, faculty, and our society.

- **Internationalization**: SFU will value international knowledge, understanding and engagement, and will seek to engender an active global citizenship among its students, faculty and staff, and to ensure that SFU is an engaged partner and contributor on the international stage.

- **Respect for Aboriginal Peoples and Cultures**: SFU will honour the history, culture and presence of Aboriginal peoples. The university will welcome and nurture Aboriginal students and seek opportunities for greater representation of Aboriginal peoples amongst its faculty and staff.
- **Supportive and Healthy Work Environment**: SFU will recognize, respect and value the essential contribution made by staff and faculty, and will seek to build and sustain a work environment that is equitable, supportive, rewarding and enjoyable.

- **Sustainability**: SFU will pursue ecological, social and economic sustainability through its programs and operations. Through teaching and learning, research and community engagement, SFU will seek and share solutions. In its own operations, it will develop and model best practices, from minimizing its ecological footprint, to maximizing its social health and economic strength.

SFU has developed an Integrated Planning Framework to help ensure that planning and resource utilization for the institution, including capital projects, remain focused and aligned with SFU’s vision, priorities and the strategic direction for the university as provided by the Academic Plan and Strategic Research Plan.
SFU has experienced exceptional growth over the past decade in support of the accessibility agenda of the Province of British Columbia. Total enrollment of Full Time Equivalent (FTE) students grew by 51% between 2005/06 and 2015/16 and enrollments at SFU’s Surrey Campus are now more than three times what they were ten years ago. The university’s inventory of spaces and facilities has meanwhile not kept pace. Original buildings have also aged significantly and many are in need of replacement or renewal.

To address the current situation, respond to the growing demand and achieve SFU’s vision as the leading engaged university, the selection and prioritization of projects in this Capital Plan support four strategic initiatives:

1) Surrey Campus Expansion
2) Burnaby Campus Renewal
3) Community Engagement
4) Sustainability and Climate Action

Each of these initiatives, and the capital projects being pursued in relation to the initiatives are described below.

1) Surrey Campus Expansion

An expansion of the SFU Surrey Campus is necessary to meet the increasing enrollment demand from the fast growing university student aged population in the south Fraser Valley.

Since opening its doors in 2002, student numbers at SFU’s Surrey Campus have far exceeded the 2,500 FTE population that this campus was designed to accommodate. While total enrollments for the university grew by 3% between 2010/11 and 2015/16, those at SFU Surrey increased by 36%. Course offerings in the sciences and in areas of technology such as mechatronics have proven to be very attractive at this location; however, without expansion of the Surrey campus, qualified students from the immediate area who intend on enrolling at SFU Surrey cannot be accommodated.

The goal for this location is to carry out the mandate to become a fully comprehensive campus, with capacity for an additional 2,500 FTEs. Within the BC economy there are many sectors, which need educated, job-ready,
entrepreneurial graduates; SFU is prioritizing clean energy engineering, health and creative technologies. Consequently, the expansion plan for SFU Surrey includes four new projects, all prioritized within this Capital Plan. They are:

- **Sustainable Energy and Environmental Engineering Building** - a new 15,239 m² facility which will house 320 new undergraduate, 120 new graduate students as well as 75 existing graduate students in a living showcase of sustainable building standards. The SE²P Building will host a new program and associated research in sustainable energy and engineering as well as research labs for mechatronic systems engineering.

- **Health Systems Innovation and Sustainability Building** - a new 13,600 m² building at SFU Surrey which will become home to five different programs associated with the Faculty of Health Science and the Faculty of Applied Science, providing opportunities for up to 660 undergraduate and 185 graduate students in programs including Mechatronics, Health Systems Innovation, Population Health Promotion, Indigenous Health Development, eHealth Innovation and Informatics, Health Technology Development and Assessment.

- **Business and Creative Technologies Building** - a new 13,000 m² facility which will provide space and innovative and specialized facilities to support the needs of up to 420 undergraduate FTEs and 202 graduate FTEs in business innovation, entrepreneurship and creative technologies.

- **Innovative Teaching and Other Facilities** - a new 5,500 m² building which will provide space and facilities for students in the faculties of environment, education and science. The programs will be intertwined and SFU will seek to develop community partnerships and integrated educational pathways that improve employment prospect for graduates.

2) **Burnaby Campus Renewal**

The SFU Burnaby campus suffers from an on-going and increasingly serious deferred maintenance problem. According to the Facilities Condition Index (FCI), 57% of buildings on the Burnaby campus – and 55% of the campus space inventory - are in ‘poor’ condition.

The rehabilitation and renewal of compromised and aging facilities and infrastructure at the Burnaby campus is required to extend the useful life as well as improve the functionality, safety and sustainability of these facilities.
Addressing these critical deferred maintenance and capital renewal requirements is key to supporting students to achieve their education, employment and training goals. Campus renewal also directly supports SFU’s vision, mission and values related to improving learning conditions for students, improving research delivery areas, improving community social spaces, mitigating the cost of deferred maintenance and ensuring that SFU facilities are fiscally and environmentally sustainable.

In line with this strategic priority, this Capital Plan includes seven asset replacement and renewal projects. They are:

- **Life Sciences Research and Innovation Building Replacement** - a project to create a new Life Sciences Research and Innovation Building for the Burnaby campus. This 9,300 m² facility will be a centre for discovery and innovation in life sciences research. The new building will facilitate increasing research needs and will create space to allow the Shrum Biology Building to then be used as swing space for several major building renewal projects.

- **Library and Student Learning Commons Renewal** - a project which will see the reorganization and renewal of the entire library building, a key community hub on campus and a centrepiece of scholarly activity which is now 50 years old. The current 23,000 m² Library building has a Facility Condition Index (FCI) rating of 0.80, which is among the highest of all SFU facilities. The project is therefore key to reducing the institution’s deferred maintenance liability. Renovations made will also reflect changes and growth in demand including an expanded student learning centre and improved study spaces with power and wireless Internet services.

- **Convocation Mall Renewal Project** - an initiative to completely rebuild this pivotal space on campus, which is part of the iconic architecture of the SFU Burnaby campus and the primary celebration space for major University events and official gatherings such as convocation. The project will include the repair of the parkade roof membrane, a reinforcement and upgrade of the supporting roof structure.

- **Phase 3 of the Multi-Purpose Complex Renewal Project** - a project which will address subsurface moisture penetration, above-grade envelope replacement, and replacement of hot water heating system in this complex. The 12,000 m² building, which was built in 1978 with an addition in the 1983, is in poor condition with a Facilities Condition Index (FCI) assessment of 0.77 and a VFA estimate of $34M in deferred maintenance needs. It is comprised primarily of classrooms, laboratories, a gymnasium and offices.

- **Shrum Science - Biology Renewal Project** - a project which will involve the redesign and renewal of the Biology Wing of the Shrum Science Complex, originally constructed in 1965 with additions in the 1970’s and 1980’s. The 10,305 m² main building is in very poor condition with a FCI assessment of 0.85 and a VFA estimate of $54M in deferred maintenance needs. The renewal project will entail a redesign of
laboratory areas and complete renewal of all major building systems and infrastructure elements to support contemporary academic research, graduate students and faculty offices. This project is part of the phased renewal of the Shrum Science Complex, which began with the Chemistry renewal project completed in 2011.

- **Shrum Science - Physics Renewal Project** - a project which will focus on the Physics Wing of the Shrum Science Centre, constructed in 1970. The project will involve a complete renewal of 10,305 m² space, which is in poor condition with a FCI assessment of 0.96 and a VFA estimate of $47M in deferred maintenance and capital renewal needs.

- **Academic Quadrangle, Renewal Phase 1** - a project to undertake the initial phase of upgrades to restore the oldest, largest, most iconic and most heavily utilized building on the SFU Burnaby Campus. This first phase will address envelop, HVAC, lighting, finishes and functional upgrades and improvements in select areas of this 27,420 m² building.

### 3) Community Engagement

The strategic initiative of community engagement is a key element of SFU’s vision as a leading engaged university. Being an engaged university means having facilities that attract students, enhance the student experience as well as support, contribute to and enhance the local community. In line with this initiative, work is underway on several self funded projects including a new art gallery and improvements to the student residences, campus recreation and athletics facilities. In addition, this Capital Plan includes a new First Peoples’ House on the SFU Burnaby Campus.

- **First Peoples’ House** - This unique project will see the development of a new facility dedicated to providing space for programs and services for First Nations students on campus. The First Peoples’ House will provide an opportunity to bring together leading mentors and entrepreneurs-in-residence with key programming and resources to train and mentor First People entrepreneurs. It will be an on-campus home where Aboriginal Elders can work with students and others. It will also be a space to host cultural events, celebrations, and workshops for the Aboriginal and campus-wide community.
4) Sustainability and Climate Action

Sustainability and Climate Action is a crosscutting strategic initiative that impacts the planning and implementation of all of the projects in the Capital Plan: both the new projects and the renewal and replacement projects. This initiative aligns with Provincial government mandates and objectives around carbon neutrality, greenhouse gas emissions reductions, and infrastructure renewal. It supports the SFU Sustainability Policy (GP 38) and the SFU Energy Utilization Policy (GP 43). This policy sets specific targets for reducing GHG emissions as follows:

- 33% by 2020 (using a 2007 baseline);
- 80% by 2050 (using a 2007 baseline).

- and is also a key component of achieving SFU’s vision as a leading engaged university.

Directly in line with this initiative, is the new biomass heating plant which is among the self-funded project listed in this Capital Plan. This heating plant will burn organic material to service SFU’s Burnaby Campus and the UniverCity community on Burnaby Mountain. At build-out, the plant is expected to reduce campus greenhouse gas (GHG) emissions from all sources by 69 percent.

Both new and renewal projects in this Capital Plan have also been designed with a view to reducing the university’s environmental footprint. Projects seek to enhance the operational efficiency of existing buildings and avoid unnecessary waste. Similarly, infrastructure improvements aim to achieve reductions in energy use and greenhouse gas emissions, while conserving water.

Where possible, the re-use of existing structures is the decision of choice. In addition to physical upgrades, emphasis is also placed on "soft tissue" changes such as behavioral change programs and improved communications to engage the community.
PLANNING ASSUMPTIONS

It is assumed that the facilities and infrastructure necessary to accommodate normal and/or targeted enrolment growth will be funded by AVED in accordance with the BC Space Standards - and using an appropriate Unit Rate Budgeting methodology that recognizes elemental unit costs and reasonable projections of cost escalation.

Estimated construction costs are indicative cost estimates produced with the most current information available and with the assistance and validation of credible and qualified quantity surveyors. At the time of project approval, funding an appropriate adjustment for change of scope and escalation may be required.

All future projects will be executed in accordance with campus planning principles, design standards and functional requirements, and the government mandate to achieve LEED Gold, or equivalent, for new construction and LEED Silver for major renovation and renewal projects. As well, the University will honour the Wood First Initiative and will comply with The Capital Asset Management Framework, the Greenhouse Gas Reductions Target Act, and the Capital Asset Reference Guide.

The projects described in the balance of this plan use reasonable parametric assumptions. The plan attempts to address those areas that are currently in a deficit position or where the condition of a building or infrastructure asset is compromised to the point of requiring renewal, rehabilitation or replacement.
5 PROJECT OVERVIEWS

NEW PRIORITY PROJECTS & WHOLE ASSET AND RENEWAL PROJECTS (CATEGORY 1 & 2)
1.0 Current Situation

- Regional access to higher education in the South Fraser Region must be expanded to respond to changing demographics, population growth projections, as well as labour market demand by knowledge-based and cleantech economy industries.

- The South Fraser is BC’s largest and fastest growing region. Currently, there are only 12.6 FTE student spaces for every 1,000 residents compared to the provincial average of 45.7.

- Since opening its doors in 2002, SFU’s Surrey campus has grown to more than the 2,500 FTEs in 32,257 m² (347,211 sf) with no room for expansion.

- The next phases of development at Surrey Campus are being planned to accommodate the next forecasted enrollment growth of 2,500 FTEs and allow SFU Surrey to keep pace with growing demand. The SE³P Project in Applied Sciences is a key component of this expansion.

- Applied Sciences students feed into the high-demand technology sector in B.C. and expansion at Surrey campus will provide manpower required for some of the estimated 100,000 new jobs expected from growth of BC’s liquefied natural gas (LNG) industry, as well as future jobs required in the sustainable energy sector.

- Competition to enter Applied Sciences programs has grown substantially: for every full-time student seat, five applications are received.

- Applied Sciences is consistently oversubscribed with program FTE growth of 39% since 2010/11. This has led to rising Grade Point Average (GPA) requirements for incoming students, most recently 92% for international students and 86% for domestic students entering Surrey campus programs, with the expectation of further increasing GPA cut-off rates for 2017.

- Applied Sciences graduate research space for engineering programs requires wet laboratories with direct ventilation and specialized piped utilities, high headroom clearances, structural support for heavy equipment, flexible testing and assembly areas, installation of occupational health and safety equipment and distribution of services that are necessary for safety.
Due to space constraints and lack of building infrastructure for hosting safe research labs, Applied Sciences has been leasing space at industry sites for students to carry out their research programs and to build large workshop projects.

In Summer 2015, Applied Sciences was forced to close student enrollments due to capacity constraints.

2.0 Project Description

The SE3P Building at SFU Surrey will house mechatronics labs and a new Sustainable Energy and Environmental Engineering Program.

More than 800 faculty, staff and students will utilize the research, innovation and commercial space in this 15,239 m² facility. This includes 320 new undergraduate students, 120 new graduate students as well as 75 existing graduate students from the mechatronics program.

The facility will house purpose-built space for engineering teaching labs, equipment rooms and research labs, as well as academic and staff support spaces.

The building will also include a 400-seat lecture theatre required to accommodate current academic programs and community events in Surrey.

The proposed SE3P Project addresses the critical need for skilled engineers in the growing energy and clean tech sectors (in BC/Canada). These engineers are expected to lead the sustainable exploitation of traditional and new energy resources and imminent transition to low-carbon energy systems through innovation, entrepreneurship, and sustainable thinking.

3.0 Project Objectives

The main project objectives of SE3P are to provide adequate capacity to respond to student enrollment pressures from the rapidly expanding university student-aged population in the Lower Mainland; to link program delivery with labour market and employers’ needs for critical technology skills; and fulfill SFU’s vision and mandate to provide the highest quality teaching, research and community service and maximize strategic partnership opportunities with industry.

Sustainable Energy and Environmental Engineering is a multidisciplinary specialization that will support the mandate of the provincial
government’s “Top 60 Jobs by 2022”, and train energy engineering specialists and managers required by the burgeoning liquefied natural gas industry.

- BC’s 2022 Labour Market Outlook report forecast 8,300 engineering job openings requiring post-secondary training by the year 2022. The Globe Foundation and Skills for Growth Report of BC Government both reported a shortage of over 50,000 skilled technical workers in clean energy over the next 10-15 years. In addition, the Electricity Sector Council of Canada estimates that nearly 60% of the current workforce in the electricity industry will retire by 2020 and predicts the industry needing to recruit 45,000 new workers in the next five years to deal with refurbishing existing systems, and building new and renewable energy infrastructure.

- SE3P will be the first dedicated undergraduate sustainable energy engineering program in Western Canada and the first Canadian Engineering Accreditation Board accredited undergraduate energy engineering program. It will use an integrated approach to sustainable energy engineering education, blending essential elements of environmental impact, economics, management and entrepreneurship with a strong core of traditional energy-related engineering sciences and design. This will result in a program training well-rounded energy engineers for the oil and gas sector, innovative fuel cell technology and beyond.

4.0 Options Considered

- Extensive investigation of partnerships with private developers and the Surrey Development Corporation have not resulted in any viable facilities alternative.

- The nature of engineering science teaching and research requires hands-on experience in a laboratory setting. Alternative means of teaching and research without lab experience is not practical. Specialized lab facilities, especially wet labs, are not generally available in the marketplace, and those that may be are typically not designed to meet the building code requirements for assembly use as required for university teaching functions.

- In order to ensure the SE3P Building is truly a world-class state of the art facility, three comparable institutions were contacted regarding similar and recent capital building projects at the University of British Columbia, University of Calgary and University of Waterloo. The development of the SE3P Building has therefore been informed by the scope, costs, risks and lessons learned from these other institutions.
5.0 Project Outcomes

- **Infrastructure Improvements:**
  - The project will allow for expansion of 320 undergraduate spaces and 120 graduate spaces in engineering and computer science programs in Surrey. It will also provide support space for existing programs.
  - The project expands purpose-built space for advanced research, lab work and student projects so undergraduate and graduate students gain practical, hands-on skills that can be readily applied in industry.
  - A new SFU building in Surrey Centre will support expansion of the campus within the City of Surrey’s revitalized downtown and expand opportunities for community partnerships through use of the 400-seat lecture theatre.

- **Cost Effectiveness:**
  - Lessons gained from comparable building projects at other universities have been applied to ensure cost effectiveness.

- **Innovation:**
  - SE3P Building will house an entirely new entirely undergraduate and graduate program in sustainable energy and environmental engineering.
  - It will also be designed as a living showcase for sustainable building standards.

- **Strategic Alignment:**
  - The SE3P Building Project is directly aligns with and supports a number of the skills and training goals of the Ministry, the Province of British Columbia, industry, education partners and employers.
  - With a new facility, SFU will be extremely well positioned to support the students of the South Fraser Region and the wider community including international students in receiving a world-class education that will help them successfully transition into the workplace. This will narrow the gap between research and industry, and assist in meeting the demands and challenges of the new cleantech, knowledge-driven economy, providing an excellent return on investment for all British Columbians.
  - This project will accommodate growth and labour market demand driven capacity created by a growing LNG industry, and by the need
for sustainable energy solutions in other industries, such as construction/building, natural resources, remediation, utilities and transportation.

- The project provides the opportunity for industry-based collaborations for which SFU Surrey has a strong reputation. The programs offered in this building will provide the training and education required to meet BC’s labour market needs and maintain a competitive economy. SFU is the only BC research university with plans to significantly grow its undergraduate student population.

- The expansion of Surrey’s campus buildings and academic programs will support the institution’s vision for the integration of innovative education, cutting edge research and far-reaching community engagement. SFU Surrey has been a living example of what it means to be an “engaged university”.

**Quality Education:**

- The new SE³P Building will provide students with an optimized education and research environment along with diverse and transformative learning opportunities.

- It will also enable the leveraging of fundamental research strengths and promote a full continuum of research, including opportunities to apply and transfer the results of research activities to the benefit of industry and society.

**Energy and Emission Reduction:**

- The SE³P Building is intended to be a living showcase of sustainable building standards.

- It will be designed as an energy efficient building targeting LEED Gold standards. The building will also be connected to the Surrey District Energy System, which will initially rely on natural gas, but in the future will integrate renewal energy sources, i.e. biomass, sewer heat recovery and bio gas.

### 6.0 Project Cost/Funding

- Total project costs are $126,000,000. This total includes the $10 Million cost of the land.

- The total AVED Capital contribution for this project is $71,000,000.

- It is assumed that operating funding would be provided by AVED based on $14,000 per full-time undergraduate and $20,000 per graduate student.
based on Ministry funding per FTE for Research Universities under the program cost bands provided through the Skills for Jobs Blueprint.

7.0 Key Risks

- The development of the SE3P Building has been informed by the scope, costs, risks and lessons learned from comparable capital building projects at the University of British Columbia, University of Calgary and University of Waterloo.
- This project is contingent upon the successful completion of a development agreement with City of Surrey. To address this risk, Surrey has assigned a special team to expedite all approvals required to meet the scheduled time frame.
- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.
- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 Project Schedule

- Construction of the SE3P Building is underway. Construction will be phased to allow for occupancy of Phase 1 in Q1, 2018/19 and Phase 2 in January 2020.

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*Quarters relate to a fiscal year end of March 31st*
1.0 Current Situation

- The existing Shrum Biology Building does not adequately provide for today’s biology teaching and research programs.
- The proposal is to relocate the research component into a new building and renovate the existing vacated space into new flexible biology instructional space.

2.0 Project Description

- The Life Sciences Research and Innovation Building will be a centre for discovery and innovation.
- Interdisciplinary teams of scientists will solve problems ranging from agricultural challenges to human disease to species preservation.
- Housing 1000 faculty, staff and students, the 9,300 m² replacement facility will strengthen partnerships between researchers and organizations to support resource and industry sectors as well as BC and SFU’s goals for sustainability.

3.0 Project Objectives

- The new building will facilitate increasing research needs and vacating existing outdated teaching and research facilities to allow renovations to accommodate biology teaching needs in space designed for traditional and new project based teaching models.
- The project has been conceived in response to changing needs in biology teaching and research.
- The new building will provide state-of-the-art biology research facilities.
4.0 Options Considered

- After reviewing multiple options, the Life Sciences Research and Innovation Building has been conceived as the most efficient approach: providing a necessary swing space during the renewal of the Shrum Biology Wing in the short term; and extra space for the rapidly expanding life sciences research and innovative faculties in the longer term.

5.0 Project Outcomes

- **Infrastructure Improvements:**
  - This project will improve space efficiency through the use of larger, open research labs that allow for greater sharing of centralized support spaces and flexibility to accommodate the expansion and contraction of research projects.

- **Cost Effectiveness:**
  - A new energy efficient design will significantly reduce current energy use resulting in major cost savings.
  - Efficient design will provide higher space utilization, hence more value for money spent.
  - A flexible “plug and play” infrastructure will reduce the cost of changes and time for implementation.

- **Innovation:**
  - The Life Sciences Research & Innovation Building will be an integrative research centre enabling research team members with diverse experience to work together on cross-disciplinary problems ranging from climate change to disease proliferation.
  - Such interdisciplinary collaborations are critical to innovation and have resulted in knowledge transfer with significant industrial, commercial and social impacts.
  - While the building will house 1,000 faculty, staff and students, many more will utilize and benefit from the building’s innovation space.
  - The new laboratories will improve recruitment and retention of top faculty and students. They will also help to improve translational research and commercialization success.
A large number of small, undersized, inefficient lab rooms will be opened up and replaced with larger, flexible labs to make much better use of space.

**Strategic Alignment:**
- The Life Sciences Research and Innovation Building is directly aligned with the Ministry Service Plan objective of building on current strengths to enhance the quality of our post-secondary education.
- The project aligns with the institutional priorities of providing a dynamic integration of innovative education, cutting-edge research and equipping SFU students with the knowledge, skills, and inter-professional learning experiences necessary to succeed in an ever-changing and challenging world.

**Quality Education:**
- A new leading edge research facility will provide opportunities for all students to engage in research programs that will provide project-based hands on learning opportunities.
- The new building will allow for larger labs (improving course capacity and student access) and incorporate flexible space that is designed for innovative experiential learning and is brighter, better organized, and more desirable for students to use.
- The consolidation of faculty programming will free up space in other buildings and facilitate collaborative learning.
- In incorporating more ancillary equipment space, the new design will also expand the scope of course activities that can be pursued.

**Energy and Emission Reduction:**
- The new building will be designed to LEED Gold standards. Through high efficiency energy performance and space design, the net improvement in energy performance is estimated to be a minimum of 15% in comparison to the 1965/70 building.
- The vacated building will also be repurposed in the future to support other university functions.

### 6.0 Project Cost/Funding
- Total estimated capital costs of the Life Sciences Research & Innovation Building are $70 Million.
7.0 Key Risks

- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.

- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

- Unforeseen infrastructure connection issues will be mitigated by a detailed analysis of existing infrastructure during design.

- Delays and issues associated with required Municipal approvals will be mitigated by liaising with the City early on in the design phase of the project and adjusting the project schedule as necessary.

8.0 Project Schedule

- Design of the Life Sciences Research & Innovation Replacement Project is scheduled to commence in Q1 2017/18. Construction completion and occupancy are expected in April 2020.

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*Quarters relate to a fiscal year end of March 31*
1.0 Current Situation

- There were 676 self-identified Aboriginal students attending SFU in 2014-15, including 511 undergraduate students and 165 graduate students.
- Programs and services to support Aboriginal students are presently diffused throughout various locations around the Burnaby campus.

2.0 Project Description

- This Project will result in the development of a dedicated facility for programs and services for First Nations students on campus.
- The new building will include an office, common areas and meeting space for incubator and accelerator programs such as the First Peoples’ Enterprise Accelerator Program. It will also include a large ceremonial hall, student lounge, computer lab and study space. The SFU Office of First Nations Student Services will be housed here. There will also be separate office space for Elders.
- The size of the building program is 2,000 m².

3.0 Project Objectives

- This project is needed to facilitate the participation of First Nations peoples in post-secondary education on the SFU campus. The project will create a place for Aboriginal students, staff, and faculty who come from across British Columbia, Canada, and the world, to feel at home and make friends. It will be a place where their cultures and backgrounds are respected and supported. Such a place of pride and culture becomes a tangible recruitment tool and a place to enhance the retention of Aboriginal students, staff, and faculty.
- The First Peoples’ House will provide an opportunity to establish the proposed First Peoples’ Enterprise Accelerator Program (“FPEAP”) which will bring together leading mentors and entrepreneurs-in-residence with key programming and resources to train and mentor First People entrepreneurs, identify and incubate promising new ventures and
accelerate emerging and growth stage enterprises of importance to First Peoples, British Columbia and Canada.

- The First Peoples’ House will be a place where Aboriginal Elders can have an on-campus home to work with students and others. It will be a place where cultural events, celebrations, and workshops can be held for the Aboriginal and campus-wide community. It will be a place to share Aboriginal culture as members of the University and off-campus community would come to the First Peoples’ House to inquire and learn. It will also be an honoured place from which to make connections to local Aboriginal communities and a recognized symbol of the SFU commitment to these communities.

- A centerpiece of the First Peoples’ House will be a traditional-style Ceremonial Hall. This hall will be a place to hold conferences, social and cultural events, and celebrations — for example, the special Honoring Feast for SFU Aboriginal graduates. Traditional winter ceremonies and pow-wows can also be held there. It will be a place to welcome special dignitaries to the Burnaby campus. Such a Ceremonial Hall in a beautiful First Peoples’ House will be a signature room and building on the campus, recognized across the University, city, province, and country.

4.0 Options Considered

- All three of SFU’s campuses are on unceded First Nations territory. In 2015, a First Peoples’ Gathering Space was opened at the Vancouver campus. It is now necessary to provide a facility to engage Aboriginal students and community in Burnaby.

- In order to fulfil its intent as a space appropriate and desirable for cultural gatherings and celebrations, the new space needs to be designed to reflect Aboriginal culture.

- Renovation of existing facilities on campus was considered, but rejected, as there was no suitable location with enough vacant space.

5.0 Project Outcomes

- The project will help to improve the engagement of Aboriginal students and the Aboriginal community, and improve participation and outcomes in post-secondary education for First Nations peoples.
The project will showcase the First Peoples’ Enterprise Accelerator Program and will be closely linked with SFU’s overall support for entrepreneurship and early stage company development, leveraging available facilities, networks and benefits for participating First Peoples entrepreneurs and their communities.

**Infrastructure Improvements:**
- The First Peoples’ House will provide a unique space for the engagement of Aboriginal students and the Aboriginal community as well as the programming of Aboriginal education.
- The new building will also contribute to the cultural diversity on campus and provide an added space for community and student gatherings and celebrations.

**Strategic Alignment:**
- The project aligns with the AVED Aboriginal Service plan to “Increase access, retention, completion and transition opportunities for Aboriginal learners, strengthen partnerships and collaboration in Aboriginal post-secondary education and increase the receptivity and relevance of post-secondary institutions and programs for Aboriginal learners.”
- It also aligns with SFU’s commitment to becoming the leading “engaged” university in Canada, defined by its dynamic integration of innovative education, cutting edge research, and far reaching community engagement. This project will assist the University in realizing this vision with respect to the Aboriginal community by:
  - Engaging Aboriginal students and equipping them with the knowledge, research skills, and experiences to prepare them for life in an ever-changing and challenging world;
  - Stimulating research in the service of Aboriginal peoples; and
  - Engaging Aboriginal communities in every way possible to contribute to their social, economic, environmental, and cultural well-being.

**Quality Education:**
- The FPEAP, to be delivered through the First Peoples’ House will provide a unique learning and mentoring experience for First Nations entrepreneurs.
- The program will identify and incubate promising new ventures and accelerate emerging and growth stage enterprises.
6.0 Project Cost/Funding
- The estimated capital cost of the First Peoples’ House is $15 Million.
- This project is expected to be funded partially from AVED and donations.

7.0 Key Risks
- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.
- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 Project Schedule
- Planning of the First Peoples’ House Project is scheduled to begin in April 2017. The project is slotted for completion and occupancy in April 2020.

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*Quarters relate to a fiscal year end of March 31st.
1.0 Current Situation

- Since opening its doors in 2002, SFU’s Surrey Campus has grown to more than the 2,500 FTE in 32,257 m² (347,211 sf) with no room for expansion.

- Surrey Campus was planned on 135 sf per FTE, which is significantly lower than the Ministry Space Standard that yields approximately 175 sf per FTE.

- SFU is seeing increasing enrollment demand from the fast growing university student-aged population in the south Fraser Valley.

- The next phases of development at Surrey Campus are being planned to accommodate the next forecasted enrollment growth of 2,500 FTEs and allow SFU Surrey to keep pace with growing demand. The Health System Innovation and Sustainability Project is a key component of that expansion.

2.0 Project Description

- This project will provide space for science, health and technology programs and will be comprised of classrooms, research and teaching laboratories, academic and support spaces, and a data centre to serve the SFU Surrey campus.

- The collection of five programs associated with the Faculty of Health Science and the Faculty of Applied Science will provide opportunities for up to 660 undergraduate FTEs and 185 graduates FTEs in programs including Mechatronics (which will share part of Phase 1 lab space), Health Systems Innovation, Population Health Promotion, Indigenous Health Development, eHealth Innovation and Informatics, Health Technology Development and Assessment. Students in all concentrations will be offered the opportunity to complete a Minor in “Innovation and Entrepreneurship” from the Beedie School of Business.

- The estimated size of this project is 13,600 m².
3.0 Project Objectives

- The project will add programs to train students for careers in health, mechatronics, and applied sciences where job growth in BC is expected to grow by 2.4%/1.6% by 2020 and where an estimated 90,000/60,000 new or replacement workers will be needed according to the BC Labour Market Outlook 2010-2020.

- Science, Health and Technology programs will be offered to support other academic initiatives to provide disciplinary breadth and academic choice for students completing programs and degrees in Surrey.

- The purpose of this program is to train the leaders of the future who will develop and translate innovative ideas into evidence-informed practices that improve the planning, delivery, and outcomes of health care. The programs will prepare students to be problem-solvers, innovators, advocates, administrators, and leaders to meet health system-related needs in Surrey, British Columbia, and beyond. The program will generate evidence and translate evidence-informed ideas into improved systems of health promotion, disease prevention, and health care delivery. No other university or college in BC has developed a multi-disciplinary program focused on innovation for the future of this breadth or depth.

4.0 Options Considered

- The nature of science teaching and research requires hands-on experience in a laboratory setting. Alternative means of teaching and research without lab experience is not practical. Specialized lab facilities are not generally available in the marketplace and those that might be typically are not designed to meet the building code requirements for assembly use as required for university teaching functions. Locations distant from the Burnaby campus are also not practical.

- Extensive investigation of partnerships with private developers and the Surrey Development Corporation have not resulted in any viable facilities alternative.

- The project supports the development a university campus as part of the new Surrey downtown civic centre precinct.
5.0 Project Outcomes

- **Infrastructure Improvements:**
  - The project will allow for expansion of new graduate and undergraduate programs in science, health and technology at the Surrey campus, and provide support space for existing programs.

- **Strategic Alignment:**
  - This project will accommodate growth and labour market demand driven capacity. The project provides the opportunity for industry-based collaborations for which SFU Surrey has a strong reputation. The programs offered in this building will provide the training and education required to meet BC’s labour market needs and maintain a competitive economy. SFU is the only BC research university with plans to significantly grow its undergraduate student population.
  - The expansion of Surrey’s campus buildings and academic programs will support the institution’s vision for the integration of innovative education, cutting edge research and far-reaching community engagements. SFU Surrey has been a living example of what it means to be an “engaged university”.
  - This project is needed to meet the increasing enrollment demand from the fast growing university student aged population in the south Fraser Valley.

- **Energy and Emission Reduction:**
  - The project will be designed to LEED Gold Standard. The building will also be connected to the City of Surrey district energy system, which will utilize various low GHG emission sources.

6.0 Project Cost/Funding

- The estimated project costs are $90 Million.
- This project is expected to be funded by AVED. There are on-going discussions with other institutional and municipal bodies regarding the possibility of making this part of a larger development on the site.
- It is assumed that operating funding would be provided by AVED based on standard funding per FTE formula.
7.0 Key Risks

- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.

- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 Project Schedule

- The Planning Phase of the Health Systems Innovation and Sustainability Project is scheduled to commence in April, 2018. The project will be completed in March 2021.

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*Quarters relate to a fiscal year end of March 31st.*
1.0 Current Situation

- The W.A.C. Bennett Library facility is a key public building on the Burnaby campus that is now over 48 years old. The building is 23,000 m² and is comprised primarily of study areas, book storage and some administrative offices on the top floor.
- This building is in poor condition with a current FCI assessment of 0.80.
- The building requires a major infrastructure upgrade to extend the life of the building and to address life safety, seismic, and accessibility issues.

2.0 Project Description

- Reorganization and renewal of the entire building is required to accommodate changes and growth in demand including expanded student learning centre and improved study spaces with power and wireless Internet services.
- Material storage areas will be consolidated into more efficient storage and retrieval systems to free up space.
- Spaces to support student study and learning will be created including tutorial rooms, private and group work areas.
- Basic infrastructure and code improvements are also needed including seismic upgrades, washroom improvements, additional electrical and data services and accessibility improvements.

3.0 Project Objectives

- This project aims to address deferred maintenance backlog, code and life safety systems deficiencies and improve accessibility.
- It will also modernize the functionality of library facilities to suit current practices and to support the student academic experience. Demand for library services has changed with less space needed for storage of hard copy materials. This project will involve a redesign to provide a diversity of spaces to support learning and collaboration.
4.0 Options Considered

- The most cost effective and practical option is to re-use the existing building.
- There are no other buildings on campus that have space and would be suitable to host the library function. Locating off campus would be impractical given the need for students and faculty to access other resources available only on campus. The cost of acquiring and renovating an off-site building would far exceed the cost of renewing the existing Library Building.

5.0 Project Outcomes

- **Infrastructure Improvements:**
  - The project will provide an improved environment to support teaching for undergraduate and graduate academic programs. The renewed facilities will also support enhanced research activities.
  - The project is expected to reduce the FCI to below 0.1 and will resolve all life-safety and building code deficiencies.
  - Renovating the space in line with how libraries have come to be used will also enhance space utilization.

- **Cost Effectiveness:**
  - The project will resolve significant deferred maintenance requirements.
  - Cost savings will be accrued through more modern and efficient building systems.
  - Re-use of the existing structure will also be more cost effective than demolition and rebuilding.

- **Innovation:**

  - The renewal project contemplates several innovative program changes to enhance the library's role and significance as a center of learning and collaboration of the university. These include a new Digitization Lab, up to 50 team rooms, a new Data Visualization Studio, and an expansion of the Research Commons.

- **Strategic Alignment:**
The improved Library Building supports the Ministry Service Plan objective of building on current strengths to enhance the quality of our post-secondary education.

The project aligns with the institutional priorities of providing a dynamic integration of innovative education, cutting-edge research and equipping SFU students with the knowledge, skills, and inter-professional learning experiences necessary to succeed in an ever-changing and challenging world.

- **Quality Education:**
  - The Library provides essential services to support learning activities including access to literature, study space and learning support.

- **Energy and Emission Reduction:**
  - The project will include the renewal of several building enclosure components that affect the performance of the building, including resistance to water ingress and associated deterioration of components, as well as occupant comfort and heat transfer.
  - Resealing activities and the renewal of roof membranes, as well as the additional of increased insulation at the roof and decks, the use of better performing glazing systems (for example, the use of thermally improved frames, and double or triple glazing), the over-cladding exposed concrete with exterior insulated assemblies and improvements to the air barrier system to reduce air leakage will have a significant affect in improving the energy efficiency of the facility and reducing greenhouse gas emissions.

### 6.0 Project Cost/Funding

- The total estimated capital cost is $80 Million.
- This project is funded by AVED.
- There is little expected cost impact on operating or program costs as there is no expansion of program delivery anticipated.

### 7.0 Key Risks

- There is a risk that instructional activity will be disrupted if the Library and Student Commons renewal project is not completed on time. Such disruptions will be mitigated through comprehensive, realistic and well-communicated scheduling of activities. Clear requirements, roles and
Responsibilities and work completion milestones will be established with the City and project team. “Safe to occupy” and phased occupancy back-up plans. A comprehensive communication strategy will also be put in place to ensure campus community informed of work in progress.

- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.

- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 Project Schedule

- Planning of the Library and Student Commons Renewal Project is scheduled to commence in April, 2018. The project is slotted for completion in December, 2022.

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*Quarters relate to a fiscal year end of March 31.
1.0 Current Situation

- Since opening its doors in 2002, SFU's Surrey Campus has grown to more than the 2,500 FTEs in 32,257m² (347,211 sf) with no room for expansion. Surrey Campus was planned on 135 sf per FTE, which is significantly lower than the Ministry Space Standard that yields approximately 175 sf per FTE.
- SFU Surrey is seeing increasing enrollment demand from the fast growing university student-aged population in the south Fraser Valley.
- The next phases of development at Surrey Campus are being planned to accommodate the next forecasted enrollment growth of 2,500 FTEs and allow SFU Surrey to keep pace with growing demand. The Business and Creative Technologies Project is a key component of that expansion.

2.0 Project Description

- This new building will be the third of a four phase expansion of Surrey Campus that will provide space required to serve the needs of 2,500 additional FTEs within a comprehensive and full service campus of 5,000 FTEs.
- This phase will provide for creative technologies studies and will have specialized facilities such as a games studies laboratory with for students, large screen and mobile screen interfaces, a 3-D printing laboratory with industrial strength flooring, an innovation laboratory for student teams, an innovative consultation space with video conference capability to link student teams to industry mentors.
- The project will provide classrooms, research and teaching laboratories, and academic and staff support spaces.
- This project will provide space required to serve the needs of up to 420 undergraduate FTEs and 202 graduate FTEs in Business Innovation and Entrepreneurship and Creative Technologies.
- The estimated size of this project is 13,000 m².
3.0 Project Objectives

- Entrepreneurship and innovation are fundamental to economic growth and prosperity in Canada. Students at SFU with undergraduate degrees outside of Business would benefit from an accessible Minor in Business offered at the Surrey campus focused on venture development (entrepreneurship) and innovation within organizations (intrapreneurship).

- Business majors in this concentration will select into one of two broad themes of Science and Technology Entrepreneurship or Social Entrepreneurship. Students in the Business major concentrating in entrepreneurship and Innovation could work to earn space in Surrey Incubator through competition. Limited spaces would be provided for both Technology as well as Social Entrepreneurship.

- Creative technologies will reshape the way we experience the world in the 21st Century. The convergence of media, entertainment and communication will bring together historically separate industries, disrupting usual business methods. Development in social media, big data, gamification (i.e. the application of typical elements of game playing to other areas of activity) and the creative economy will transform the way businesses reach, engage, and manage their employees and customers.

- The projected annual growth in employment in the tech sector is 3,000 to 4,000 new jobs, many with requirements for new skill sets. Unfortunately, according to a 2012 analysis from BCTIA, BC is well behind the Canadian average in producing graduates in this area. SFU programs will answer the need for creative technologies workers across the economy.

- 182,000 job openings in BC are expected by 2020 in the Business, Finance and Administration occupations according to the BC Labour Market Outlook 2010-2020.

4.0 Options Considered

- Extensive investigation of partnerships with private developers and the Surrey Development Corporation have not resulted in any viable facilities alternative.

- The project supports development a university campus as part of the new Surrey downtown civic centre precinct.
5.0 Project Outcomes

- **Infrastructure Improvements:**
  - The project will allow for expansion of new graduate and undergraduate business and other programs at the Surrey campus, and provide support space for existing programs. The project will help to enhance the development of the Surrey Central City community.

- **Strategic Alignment:**
  - This project will accommodate growth and labour market demand driven capacity. The project provides the opportunity for industry-based collaborations for which SFU Surrey has a strong reputation. The programs offered in this building will provide the training and education required to meet BC’s labour market needs and maintain a competitive economy. SFU is the only BC research university with plans to significantly grow its undergraduate student population.
  - The expansion of Surrey’s campus buildings and academic programs will support the institutions vision for the integration of innovative education, cutting edge research and far-reaching community engagements. SFU Surrey has been a living example of what it means to be an “engaged university”.
  - This project is needed to meet the increasing enrollment demand from the fast growing university student aged population in the south Fraser Valley.

- **Energy and Emission Reduction:**
  - The project will be designed to LEED Gold Standard. The building will also be connected to the City of Surrey district energy system, which will utilize various low GHG emission sources.

6.0 Project Cost/Funding

- The estimated project costs are $90 Million.
- This project is expected to be funded by AVED. There are on-going discussions with other institutional and municipal bodies regarding the possibility of making this part of a larger development on the site.
- It is assumed that operating funding would be provided by AVED based on standard funding per FTE formula.
7.0 Key Risks

- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.

- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. User groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 Project Schedule

- Planning of the Business and Creative Technologies Building is scheduled to commence in Q1 of 2019 for completion in December, 2022.

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*Quarters relate to a fiscal year end of March 31st.*
1.0 Current Situation

- Convocation Mall was built in 1965 as part of the initial phase of building the SFU Burnaby campus. It is the primary celebration space for major University events and official gatherings such as convocation.
- Convocation Mall is a large outdoor mall built as the ‘roof’ of a large multi-storey parkade. It is covered by a large glass panel roof that sits atop concrete columns and a wood and steel frame. Concrete walkways run along both sides of the mall.
- The Mall is aging and in need of significant upgrading with an FCI assessment of 0.61 and a VFA estimate of $5.4M in deferred maintenance and capital renewal needs.
- The roof structure does not have adequate load capacity for the snow load experienced on Burnaby Mountain. The glass panels are old and are coming loose from their frames more frequently. The columns and steel frame do not meet current seismic code requirements.
- In addition, the envelope above the parkade is failing and the tile finish needs to be replaced. The concrete walkways are spalling and exposing the rebar reinforcement.
- This asset is not included in the VFA database; therefore is no FCI measurement.

2.0 Project Description

- The project includes a complete re-build of the mall. The parkade roof membrane will be repaired and a new tile surface installed. The supporting roof structure will be reinforced. The glass roof will be completely replaced. The adjoining structures and concrete walkways will be repaired.

3.0 Project Objectives

- The project will reduce the deferred maintenance backlog. It will eliminate the risk of falling glass panels or failure of the roof structure in a snow or seismic event.
- It will improve the student experience by restoring the quality of the primary gathering place on the SFU Burnaby campus.
- It will help SFU to engage the community by providing an improved gathering space for various community events.
4.0 Options Considered

- Convocation Mall is part of the iconic architecture of the SFU Burnaby campus and serves a vital functional purpose for the life of the campus. Restoration or rebuilding are the only options. Evaluation of the best option will be completed during the planning stage of the project.

5.0 Project Outcomes

- Infrastructure Improvements:
  - The project will eliminate the deferred maintenance issues with the Mall. This asset is not included in the VFA database; therefore, no FCI measurement.

- Strategic Alignment:
  - The Mall is a vital component in supporting the activities of campus life at SFU Burnaby. It provides a place where numerous student functions are held each year. All convocations in the entire history of SFU have taken place in Convocation Mall. It provides a place where SFU is able to engage with the community for various public events that take place in the Mall and the facilities that align along the mall such as the University Theatre and Library.
  - Renewal of the Convocation Mall is therefore well aligned with SFU’s priorities around community engagement.
  - It also supports the Ministry objective of building on current strengths to enhance the quality of our post-secondary education.

- Energy and Emission Reduction:
  - Convocation Mall is a large, covered open space that uses no heat or air conditioning. New lighting installed as part of the renewal will use LED fixtures to increase energy efficiency.

6.0 Project Cost/Funding

- The estimated project costs are $20 Million.
- This project is expected to be funded by AVED and private donations.

7.0 Key Risks

- There is a technical and logistical challenge with this project posed by removing and replacing the roof over an active campus space. This challenge will be mitigated through careful scheduling and a phased work plan.
• Disruptions to SFU students and staff will be mitigated through clear and realistic scheduling of activities. There will be a transfer of responsibility to the General Contractor to develop plan for safety, tie-ins, shutdowns, etc. as part of fixed price lump sum contract. There will also be a comprehensive communications strategy developed and implemented to ensure campus community informed of work in progress.

• Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.

• Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 Project Schedule

• The Convocation Mall Renewal Project is scheduled to commence in Q1 of 2020. Construction will be completed in December 2022.

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*Quarters relate to a fiscal year end of March 31*. 
1.0 Current Situation

- The Multi-Purpose Complex was constructed in 1978 with an addition in the 1983. The building is 12,000 m² in size and comprised primarily of classrooms, laboratories, a gymnasium and offices.

- This building is in poor condition with a FCI assessment of 0.77 and a VFA estimate of $34M in deferred maintenance and capital renewal needs.

- It has significant deficiencies with respect to the condition of mechanical systems. Seismic assessments show the north and south blocks constituting the Multi-Purpose Complex to be at 25% and 19% respectively of current code.

- The intent of the project is to retain and renew the existing building.

- Approximately 1,700 FTE undergraduate and 1,000 FTE graduate students study in the Faculty of Education.

- The current upgrade project will address subsurface moisture penetration, above-grade envelope replacement, and replacement of hot water lines that are prone to failure. The project scope does not include upgrades to seismic, fire alarm, sprinkler, plumbing, HVAC or electrical systems.

2.0 Project Description

- The project includes renewal of major building systems and infrastructure elements that are not included in the current envelope rehabilitation project.

- Training areas will be redesigned to align to modern teaching approaches using flexible active learning classroom concepts. Improvements will be made to general circulation and emergency exit routes.

- All areas will be upgraded to current code guidelines and will provide appropriate life safety systems including the addition of fire sprinklers.
The main electrical and mechanical systems will also be upgraded to improve indoor air quality and energy efficiency. All interior finishes, hardware and lighting will be replaced.

The seismic performance will be upgraded to a minimum of 75% of current code, addressing major life safety issues.

3.0 Project Objectives

- The project will support SFU’s strategic vision of innovative education and cutting edge research by improving learning conditions for students and improving research delivery areas.
- Renewal will address the deferred maintenance backlog and mitigate the ongoing cost of short-term maintenance repairs and continued risk of systems failures and their impact on the education and research activities in the Multi-Purpose Complex.
- Design changes will improve the functionality of teaching facilities to promote contemporary learning practices and to support the student academic experience.
- Systems improvements will also improve the energy efficiency of the building.

4.0 Options Considered

- The most cost effective and practical option is to re-use the existing building.
- Locating off campus would be impractical given the need for students and faculty to access other resources available only on campus.
- The cost of acquiring and renovating an off-site building would far exceed the cost of renewing the existing Multi-Purpose Complex. Full replacement of the Multi-Purpose Complex is estimated to cost $70M.

5.0 Project Outcomes

- Infrastructure Improvements:
  - The project will resolve significant deferred maintenance requirements and provide an improved environment to support teaching for undergraduate and graduate academic programs.
The project is expected to reduce the FCI to below 0.1 and will resolve all life-safety and building code deficiencies.

**Cost Effectiveness:**

- The project will result in a building that will meet LEED Gold standard. Energy consumption will be reduced through modern and more efficient building systems. Re-use of the existing structure will be more cost effective than demolition and rebuilding.

**Innovation:**

- The project will result in the creation of flexible and responsive teaching and working environments including:
  - Spaces that are able to support new technologies;
  - Flexible and open space for teaching, learning and working; and
  - Increased access to natural light.

**Strategic Alignment:**

- The improved Multi-Purpose Complex supports the Ministry Service Plan objective of building on current strengths to enhance the quality of our post-secondary education.

- The project also aligns with the institutional priorities of providing a dynamic integration of innovative education, cutting-edge research and equipping SFU students with the knowledge, skills, and experiences that prepares them for life in an ever-changing and challenging world.

**Quality Education:**

- The renewed facilities will provide support for enhanced research activities.

- Redesigned training areas will enable the use of modern teaching approaches and flexible active learning classroom concepts.

**Energy and Emission Reduction:**

- The building will contribute to sustainability by re-using an existing building, improving energy efficiency and reducing greenhouse gases.

### 6.0 Project Cost/Funding

- The estimated project budget is $40 Million.

- This project is to be funded by AVED.
There is little expected cost impact on operating or program costs as there is no expansion of program delivery anticipated.

7.0 **Key Risks**

- There is a risk that instructional activity will be disrupted should the work on this project not be completed on time. Such disruptions will be mitigated through comprehensive, realistic and well-communicated scheduling of activities. Clear requirements, roles and responsibilities and work completion milestones will be established with the City and project team. “Safe to occupy” and phased occupancy back-up plans will be developed and a comprehensive communication strategy will be put in place to ensure campus community informed of work in progress.

- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.

- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 **Project Schedule**

The design phase of the Multi-Purpose Complex Renewal Project is scheduled to commence in April, 2020. The project is expected to be completed in March, 2024.

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*Quarters relate to a fiscal year end of March 31.*
1.0 Current Situation

- Since opening its doors in 2002, SFU’s Surrey Campus has grown to more than the 2,500 FTE in 32,257 m² (347,211 sf) with no room for expansion.
- Surrey Campus was planned on 135 sf per FTE, which is significantly lower than the Ministry Space Standard that yields approximately 175 sf per FTE.
- SFU is seeing increasing enrollment demand from the fast growing university student-aged population in the south Fraser Valley.
- The next phases of development at Surrey Campus are being planned to accommodate the next forecasted enrollment growth of 2,500 FTEs and allow SFU Surrey to keep pace with growing demand. The Innovative Teaching and Other Facilities Project is a key component of that expansion.

2.0 Project Description

- This building will be the last of a four phase expansion that will provide space required to serve the needs a total of 2,500 additional FTE within a comprehensive and full service campus of 5,000 FTE.
- This phase will provide for innovative teaching programs and graduate and research facilities and will include classrooms, research and teaching laboratories, and academic offices.
- This project will provide space required to serve the needs of 490 undergraduate students and facilities for other graduate students in bridge programs.
- The estimated size of this project is 5,500 m².

3.0 Project Objectives

- The building will provide space for students in Faculty of Environment, Education and Science. The programs will be intertwined and SFU will seek to develop community partnerships and integrated educational
4.0 Options Considered

- The nature of integrated teaching and research requires hands-on experience in a laboratory setting. Alternative means of teaching and research without lab experience is not practical. Specialized lab facilities are not generally available in the marketplace and those that might be typically are not designed to meet the building code requirements for assembly use as required for university teaching functions. Locations distant from the Burnaby campus are also not practical.
- Extensive investigation of partnerships with private developers and the Surrey Development Corporation have not resulted in any viable facilities alternative.
- The project supports development of a university campus as part of the new Surrey downtown civic centre precinct.

5.0 Project Outcomes

- **Infrastructure Improvements:**
  - The project will allow for expansion of facilities to support students at the Surrey campus and provide support space for existing programs.
  - The project will help to enhance the development of the Surrey Central City community.

- **Strategic Alignment:**
  - This project will accommodate growth and labour market demand driven capacity. The project provides the opportunity for industry-based collaborations for which SFU Surrey has a strong reputation. The programs offered in this building will provide the training and education required to meet BC’s labour market needs and maintain a competitive economy.
  - The expansion of Surrey’s campus buildings and academic programs will support the institutions vision for the integration of innovative education, cutting edge research and far-reaching community engagements. SFU Surrey has been a living example of what it means to be an “engaged university”.
  - This project is needed to meet the increasing enrollment demand from the fast growing university student aged population in the south Fraser Valley.

- **Energy and Emission Reduction:**
  - The project will be designed to LEED Gold Standard. The building will also be connected to the City of Surrey district energy system, which will utilize various low GHG emission sources.
6.0 Project Cost/Funding

- Estimated project costs are $36 Million.
- This project is expected to be funded by AVED. There are on-going discussions with other institutional and municipal bodies regarding the possibility of making this part of a larger development on the site.
- It is assumed that operating funding would be provided by AVED based on standard funding per FTE formula.

7.0 Key Risks

- Risks of cost escalation will be mitigated by confirming budget estimates and ensuring appropriate contingencies. Major equipment will also be pre-ordered in the event of market-driven escalations.
- Schedule overruns will be mitigated through the use of rigorous review and approval processes for timely approvals. Users groups will be engaged early in the design process. Equipment lists will also be established early in the process.

8.0 Project Schedule

- The Planning Phase of the Innovative Teaching & Other Facilities Building is scheduled to commence in April 2021 with a project completion date in Q2 of 2024/2025.

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*Quarters relate to a fiscal year end of March 31st.*
1.0 Current Situation

- The Biology Wing of the Shrum Science Centre was constructed in 1965 with additions in the 1970’s and 1980’s. The size of this wing is 10,305 m² (110,922 sf).
- The main building is in very poor condition with an FCI assessment of 0.85 and a VFA estimate of $54M in deferred maintenance and capital renewal needs.
- The building is comprised primarily of undergraduate laboratories, and research labs and classrooms that no longer comply with modern academic facility design standards. It also has significant deficiencies with respect to current seismic and building code requirements.
- Biological Sciences is the largest Department in the Faculty of Science. The undergraduate program comprises 709 undergraduate FTEs, and 110 graduate, 10 teaching faculty and 36 research faculty.
- The Department has a shortfall in space, based on the Council of Ontario Universities (COU) formula. Accordingly to COU, the total actual space inventory is 76% of that entitled to it. The shortfall is greatest in office space, but there are also shortages in research and teaching space, which includes common space and large holding facilities (e.g. greenhouses, insectary facilities). Were these spaces to be included in the COU formula, the percentage of entitlement would be lower.
- As the space needs of the department exceed that available in the Biology Wing of the Shrum Science Centre, the department has spread into other buildings: Technology & Science Complex 2 and the South Science Building. This diffuse location of departmental members and operations - as well the quality of the space are a barrier to the continued growth in collaborative and interdisciplinary excellence in both teaching and research.
- The cost to renew to the existing building to current science standards would far exceed cost of constructing a new purpose-built facility. As well, the logistical challenges and costs of disruption and relocation of occupants would be significant.
- A retrofit of the existing space would not allow researchers with similar interests to be co-located; there simply is not enough space to do so. A new building could be purpose-built to improve the level of engagement within and across research groups in Biological Sciences.
2.0 Project Description

- This project involves the renewal of all major building systems and infrastructure elements of the Shrum Biology Wing.
- This building is not well suited for the systems infrastructure needed for complex science labs. The intent is therefore to use the building primarily for dry labs, classrooms and offices – and the this project will involve the renewal of these, as well as the construction of new offices.
- Undergraduate teaching labs will be consolidated to provide flexibility in class size and to allow sharing of support spaces.
- The renovation standard will be contemporary, modular and flexible to allow for easy adaptation to changing research and academic needs. Improvements will be made to general circulation and emergency exit routes. All areas will be upgraded to current code guidelines and will provide appropriate life safety systems.
- The renewal work will take place in the majority of the building. The lecture theatres at the north end of the building that comprise approximately 30% of the space will have minimal improvements to finishes only.

3.0 Project Objectives

- A primary project objective is to continue with the phased renewal of the Shrum Science Complex begun with the Chemistry renewal project completed in 2011.
- The project will support SFU’s strategic vision of innovative education and cutting edge research by improving learning conditions for students and improving research delivery areas.
- Renewal will address the deferred maintenance backlog and mitigate the ongoing cost of short-term maintenance repairs and continued risk of systems failures and their impact on the education and research activities in the Biology building.
- The science programs train students for careers in the natural and applied sciences where job growth in BC is expected be 1.6% by 2020, and where an estimated 60,000 new or replacement workers will be needed according to the BC Labour Market Outlook 2010-2020.

4.0 Options Considered

- A renewal only option was considered, but the cost of temporary accommodation during the project construction timeframe would exceed $30M.
• Locations distant from the Burnaby campus are not practical. The nature of science teaching and research requires hands-on experience in a laboratory setting. Also, an alternative means of teaching and research without lab experience is not practical. Specialized lab facilities are not generally available in the marketplace and those that might be typically are not designed to meet the building code requirements for assembly use as required for university teaching functions.

5.0 Project Outcomes

• Infrastructure Improvements:
  o Space utilization will be improved by developing larger open teaching labs and research labs that will allow greater sharing of centralized support spaces and greater flexibility in accommodating various class sizes and expansion/contraction of research projects.

• Cost Effectiveness:
  o The project will resolve significant deferred maintenance requirements and realize cost savings through energy efficiencies gained through a more modern and more efficient building systems.

• Innovation:
  o The project design will provide for open labs which will enhance space utilization, safety and equipment sharing.
  o Creative use of “plug and play” infrastructure concepts will provide flexibility for change and facilitate varied teaching models to enhance student learning.
  o Movable casework and the placement of plumbing at perimeter walls will provide maximum flexibility for space configurations and changing instructional needs.

• Strategic Alignment:
  o The improved Biology building supports the Ministry Service Plan objective of building on current strengths to enhance the quality of our post-secondary education.
  o The project aligns with the institutional priorities of providing a dynamic integration of innovative education, cutting-edge research and equipping SFU students with the knowledge, skills, and experiences that prepares them for life in an ever-changing and challenging world.
- **Quality Education:**
  - The renewal will provide an improved environment to support teaching for undergraduate and graduate academic programs. The renewed facilities will further provide support for enhanced research activities.

- **Energy and Emission Reduction:**
  - The project will result in a building that will meet LEED Gold standard. Energy consumption will be reduced through modern and more efficient building systems.

### 6.0 Project Cost/Funding

- Estimated project costs are $55 Million.
- This project is to be funded by AVED.
- There is little expected cost impact on operating or program costs as there is no expansion of program delivery anticipated.

### 7.0 Key Risks

- There are risks associated with the construction logistics of renewing a wing of a larger occupied facility mega structure. Proposed mitigation strategies focus on thorough pre-design work to identify issues, assess options and analyze existing infrastructure.
- The relocation of occupants for duration of project poses a risk, which will be mitigated through the preparation of a detailed move strategy with phasing if required.
- Unknown existing conditions will be mitigated by detailed investigation including strategic destructive exploration during design to minimize unknowns.
- Budget overruns will be managed by way of a thorough investigation of options for renovations with cost estimates including adequate contingencies for the type of work.
- Schedule delays will be mitigated through the preparation of a detailed schedule with milestones including relocation of existing occupants.
- Risks associated with equipment coordination will be mitigated through the development of an early equipment list to establish technical requirements, inform design and construction documents and avoid coordination conflicts and unexpected costs/schedule impact.
8.0 Project Schedule

- Only the planning phase of the Shrum Biology Renewal Project will occur during the timeline of this Five-Year Capital Plan. Planning of the project is expected to commence in Q2 of 2021/2022. The project will be completed in September 2025.

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*Quarters relate to a fiscal year end of March 31st.*
1.0 Current Situation

- The Physics Wing of the Shrum Science Centre was constructed in 1970. It is 10,305 m² in size.
- This building is in poor condition with a FCI assessment of 0.96 and a VFA estimate of $47.3M in deferred maintenance and capital renewal needs.
- The building is comprised primarily of undergraduate laboratories, and research labs and classrooms that no longer comply with modern academic facility design standards. It also has significant deficiencies with respect to current seismic and building code requirements.
- The intent of the project is to retain and renew the existing building.
- Approximately 450 FTE undergraduate and 50 FTE graduate students study in the Physics department.

2.0 Project Description

- The project entails the renewal of all major building systems and infrastructure elements. Laboratory areas will be redesigned following the model of the Chemistry renewal project that was completed in 2011.
- Undergraduate teaching labs will be consolidated to provide flexibility in class size and to allow sharing of support spaces.
- Research labs will also be consolidated into larger labs allowing flexibility for expansion and contraction of space assignments as research project needs change over time.
- Improvements will be made to general circulation and emergency exit routes. All areas will be upgraded to current code guidelines and will provide appropriate life safety systems.
- The renovation standard will be modern, modular and flexible to allow for easy adaptation to changing research and academic needs.
- The renewal work will take place in the majority of the building. The lecture theatres at the north end of the building that comprise approximately 30% of the space will have minimal improvements to finishes only.
3.0 Project Objectives

- A primary project objective is to continue with the phased renewal of the Shrum Science Complex begun with the Chemistry renewal project completed in 2011.
- The project will support SFU’s strategic vision of innovative education and cutting edge research by improving learning conditions for students and improving research delivery areas.
- Renewal will address the deferred maintenance backlog and mitigate the ongoing cost of short-term maintenance repairs and continued risk of systems failures and their impact on the education and research activities in the Biology building.
- The science programs train students for careers in the natural and applied sciences where job growth in BC is expected to grow by 1.6% by 2020 and where an estimated 60,000 new or replacement workers will be needed according to the BC Labour Market Outlook 2010-2020.

4.0 Options Considered

- The nature of science teaching and research requires hands on experience in a laboratory setting. Alternative means of teaching and research without lab experience is not practical. Specialized lab facilities are not generally available in the marketplace and those that might be typically are not designed to meet the building code requirements for assembly use as required for university teaching functions. Locations distant from the Burnaby campus are also not practical.

5.0 Project Outcomes

- Infrastructure Improvements:
  - The project is expected to reduce the FCI to below 0.2 and will resolve all life-safety and building code deficiencies. Space utilization will be improved by developing larger open teaching labs and research labs that will allow greater sharing of centralized support spaces and greater flexibility in accommodating various class sizes and expansion/contraction of research projects.
- **Cost Effectiveness:**
  - The project will resolve significant deferred maintenance requirements and achieve cost savings accrued through more modern and efficient building systems.

- **Innovation:**
  - The building will use accessible flexible infrastructure incorporating overhead access to provide maximum flexibility for space uses and change over time.
  - Technology-enabled teaching spaces will provide open problem based learning spaces.

- **Strategic Alignment:**
  - The improved Physics building supports the Ministry Service Plan objective of building on current strengths to enhance the quality of our post-secondary education.
  - The project aligns with the institutional priorities of providing a dynamic integration of innovative education, cutting-edge research and equipping SFU students with the knowledge, skills, and experiences that prepares them for life in an ever-changing and challenging world.

- **Quality Education:**
  - The building will be designed to provide state-of-the-art experiential learning opportunities for problem-based learning. These will enhance learning outcomes as well as improve the student experience.

- **Energy and Emission Reduction:**
  - The project will result in a building that will meet LEED Gold standard. Energy consumption will be reduced through modern and more efficient building systems.

### 6.0 Project Cost/Funding

- The estimated project costs are $45 Million.
- This project is to be funded by AVED.
- There is little expected cost impact on operating or program costs as there is no expansion of program delivery anticipated.
7.0 Key Risks

- There are risks associated with the construction logistics of renewing a wing of a larger occupied facility mega structure. Proposed mitigation strategies focus on thorough pre-design work to identify issues, assess options, analyze existing infrastructure and develop implementation strategy.

- The relocation of occupants for duration of project poses a risk, which will be mitigated through the preparation of a detailed move strategy with phasing if required.

- Unknown existing conditions will be mitigated by detailed investigation including strategic destructive exploration during design to minimize unknowns.

- Budget overruns will be managed by way of a thorough investigation of options for renovations with cost estimates including adequate contingencies for the type of work.

- Schedule delays will be mitigated through the preparation of a detailed schedule with milestones including relocation of existing occupants.

- Risks associated with equipment coordination will be mitigated through the development of an early equipment list to establish technical requirements, inform design and construction documents and avoid coordination conflicts and unexpected costs/schedule impact.

8.0 Project Schedule

- Only the planning phase of the Shrum Physics Renewal Project will occur during the timeline of this Five-Year Capital Plan. Planning of the project is expected to commence in Q2 of 2021/2022 with completion in September 2025.

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*Quarters relate to a fiscal year end of March 31st.*
1.0 Current Situation

- The Academic Quadrangle is the largest and among the oldest and most iconic buildings on SFU Burnaby Campus. Located in the center of the SFU Burnaby Campus, this six-floor, 27,420 m² building is also the most heavily utilized building on campus.

- The building currently houses Arts & Social Sciences, Canadian Studies, Chinese Studies, CUPE, Education, English, Faculty Association, Food Services, Gender Sexuality and Women's Studies, Geography, Hellenic Studies, History, the Human Rights Office, Humanities, International Services, Mathematics, Office for Aboriginal Peoples, Political Science, Psychology, the Science Technical Centre, Sociology & Anthropology and the Terry Fox Foundation among others.

- Built in 1965/67, the building is overdue for renovation with a FCI assessment of 0.83 and a VFA estimate of $93.5M in deferred maintenance and capital renewal needs.

2.0 Project Description

- The initial phase of upgrades will address building envelop, HVAC, lighting, seismic, finishes and functional upgrades such as fire protection and hazardous material removal and improvements in select areas of the building.

3.0 Project Objectives

- The purpose of the renewal project is to address deferred maintenance issues pertaining to this central facility of SFU Burnaby and ensure the long-term integrity of one of the campus' architectural centerpieces and main hubs of student activity.
4.0 Options Considered

- Given the architectural significance of the Academic Quadrangle and its central location on campus, renovation of the building is the best option for renewal.

5.0 Project Outcomes

- Infrastructure Improvements:
  - The phase 1 renewal work proposed will see the upgrading and renewal of the building envelop, HVAC, lighting and finishes in select areas of the building.

- Cost Effectiveness:
  - The project will result in a building that will meet LEED Gold standard. Energy consumption will be reduced through modern and more efficient building systems.

- Innovation:
  - The project will result in the creation of flexible and responsive teaching and working environments including:
    - Spaces that are able to support new technologies;
    - Flexible and open space for teaching, learning and working; and
    - Increased access to natural light.

- Strategic Alignment:
  - Renewal of the Academic Quadrangle will serve to enhance the learning, research and meeting space for a large and diverse number of faculties, organizations and services at SFU Burnaby – and in this way clearly supports the Ministry Service Plan objective of building on current strengths to enhance the quality of our post-secondary education.
  - The project also aligns with the institutional priorities of providing a dynamic integration of innovative education, cutting-edge research and equipping SFU students with the knowledge, skills, and experiences that prepares them for life in an ever-changing and challenging world.
The renewed facilities will provide support for enhanced research activities.

Redesigned training areas will enable the use of modern teaching approaches and flexible active learning classroom concepts.

**Energy and Emission Reduction:**

- The building will contribute to sustainability by re-using an existing building, improving energy efficiency and reducing greenhouse gases.

### 6.0 Project Cost/Funding

- Estimated project costs are $50 Million.
- This project is to be funded by AVED.
- There is little expected cost impact on operating or program costs as there is no expansion of program delivery anticipated.

### 7.0 Key Risks

- The relocation of occupants for duration of project poses a risk, which will be mitigated through the preparation of a detailed move strategy with phasing if required.
- Unknown existing conditions will be mitigated by detailed investigation including strategic destructive exploration during design to minimize unknowns.
- Budget overruns will be managed by way of a thorough investigation of options for renovations with cost estimates including adequate contingencies for the type of work.
- Schedule delays will be mitigated through the preparation of a detailed schedule with milestones including relocation of existing occupants.
- Risks associated with equipment coordination will be mitigated through the development of an early equipment list to establish technical requirements, inform design and construction documents and avoid coordination conflicts and unexpected costs/schedule impact.
8.0 Project Schedule

- Only the planning phase of the Academic Quadrangle Renewal Project will fall within the scope of this Five-Year Capital Plan. This planning is scheduled to commence in Q3 of 2021/2022 with full project completion in April 2026.

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*Quarters relate to a fiscal year end of March 31st.*
6 ATTACHMENTS
# Five-Year Capital Plan Instructions (2017/18-2021/22)

## Attachment 3 — Prioritized list for Proposed Category 1: New Priority Projects, Category 2: Whole Asset Replacement & Renewal Projects, and Category 3: Student Housing Projects

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<th>Total Cashflow Forecast 2017/18</th>
<th>Total Cashflow Forecast 2018/19</th>
<th>Total Cashflow Forecast 2019/20</th>
<th>Total Cashflow Forecast 2020/21</th>
<th>Total Cashflow Forecast 2021/22</th>
<th>Total Cashflow Forecast Outgoing Years</th>
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<td>Dec-22</td>
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*This update to the Five-Year Capital Plan reflects Simon Fraser University's current priorities and is based on the best information and data available at this time.*
### Five-Year Capital Plan Instructions (2017/18-2021/22)
**Attachment 4 - Summary of Major Ongoing and Planned Self-Funded Projects (> $5 million)**

<table>
<thead>
<tr>
<th>#</th>
<th>Institution</th>
<th>Campus</th>
<th>Project Description</th>
<th>Anticipated Construction Start Date</th>
<th>Anticipated Occupancy Date</th>
<th>Total Project Budget</th>
<th>Total Cashflow Forecast 2017/18</th>
<th>Total Cashflow Forecast 2018/19</th>
<th>Total Cashflow Forecast 2019/20</th>
<th>Total Cashflow Forecast 2020/21</th>
<th>Total Cashflow Forecast 2021/22</th>
<th>Total Cashflow Forecast Outgoing Years</th>
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