



FIVE YEAR CAPITAL PLAN
2015/16 to 2019/20

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FIVE-YEAR CAPITAL PLAN

2015 - 2020

EXECUTIVE SUMMARY

The focus of this capital plan involves a combination of new buildings and re-purposed space to meet the anticipated needs and goals of the University and the Province (including economic development, jobs, families, and health) in the next five years. The new buildings include facilities for expanded Health Sciences, and a new Facilities Management building. The new infrastructure includes expanding our Bioenergy program to include additional buildings outside the ring road. This will maximize the use and efficiency of our current systems in preparation for further development of the Sustainably Communities initiative, and reduce future capital equipment replacement needs. The third initiative is the re-purposing of current space to accommodate Engineering needs.

Our Goals

The University is eager to build on the foundation already established to make UNBC the best among like universities. To achieve this, we have identified the following goals:

- As Canada's Green University™, to be a leader in renewable energy.
- To engage all of our undergraduate students in research or experiential learning.
- To enrich the learning experience through new pedagogical models.
- To increase the impact of our research through enhancing capacity and building external linkages.
- To encourage a respectful, supportive, exciting, and friendly environment throughout the University.
- To transform our communities through the contributions of our alumni.

Our Priorities

The University Plan 2010 also includes the following as areas of priority:

- Health and Quality of Life
- Northern Community Sustainability and Development
- Innovative distributed delivery of programs
- Environment & Natural Resources
- First Nations and Indigenous Issues

PLANNING ASSUMPTIONS

Since its inception, UNBC has been characterized by periods of intense development and construction, growth in student population, and expansion in areas of direct relevance to British Columbia and northern communities. The immediate future is expected to be characterized by gradual growth in overall student enrolments, and integration of renewable energy consistent with the branding of UNBC as Canada's Green University. New programs in Engineering and Physiotherapy have also been documented as tremendous needs in the region.

An update to the University Master Plan for the Prince George campus has recently been completed consistent with this future vision of UNBC. This plan outlines development opportunities for expansion around the Bioenergy Plant at the western edge of the campus, and strengthens language related to sustainability. As always, the Master Plan will shape our approach to campus development.

All projects are also developed in accordance with Ministry guidelines including LEED requirements and the Wood First Initiative.

PLANNED OUTCOMES

Within this five-year planning horizon, UNBC will celebrate its 25th anniversary (in 2015). This marks an exciting opportunity to chart a course for the future. While it would be accurate to characterize the last decade for expansion in the health sciences (Northern Medical Program and 700% increase in Nursing enrolments, for example), this decade for UNBC may come to be defined by sustainability, particularly for the communities dependent on the resource wealth of the North. This would involve building on the recent bioenergy and "infrastructure loop" projects and adding other renewable energy sources, programs and research to foster wood and forest product innovation, and engineering.

As UNBC approaches its 25th anniversary in 2015, there is a special opportunity to enhance UNBC's role as an institution that has transformative power for its region and the province as a whole. Much can be achieved through targeted capital investment directed by Government's priorities and aligned with the University's mission and strategic direction.

- UNBC is uniquely positioned to deliver on Government's priorities and the needs of the region: engineers – a new program in re-purposed space
- Allied health service professionals – new programming in new space
- Sustainable communities rooted in local energy production that provides social, environmental, and economic benefits – building on the University's existing infrastructure and bioenergy platform

The intent is to be able to meet the identified programming needs with a phased-in capital program over the next five years.

Category 1: New Priority Projects and Category 2: Whole Asset Replacement and Renewal Projects

Institution	Campus/City	Project Title	Project Category (1 or 2)	Project Priority
University of Northern British Columbia	Prince George	Allied Health Sciences Building	1	1 of 4

1.0 Current Situation

This project would entail an expansion to the current Dr. Donald Rix Northern Health Sciences building (NHSB). A number of synergies can be gained by combining the added Health Sciences programs with the medical program space and staff. The NHSB was also originally designed for expansion and therefore has mechanical and electrical system capacity to facilitate an expansion.

2.0 Project Description

Planning, in conjunction with UBC, has continued and further refined the space requirements for Allied Health Sciences programming resulting in 1,986 nasm being required. “While the current assessment examined the possibility of leveraging existing UNBC and Northern Medical Program facilities to support the distribution of OT and PT, it revealed that existing infrastructure does not have sufficient capacity to host approximately 100 students, faculty and staff on a permanent basis” (UBC Faculty of Medicine Initial Assessment report). Therefore, it is proposed that a new building be constructed to accommodate the programming identified.

3.0 Project Objectives

The North is a strategically vital region and one of the economic engines of BC. Developing a building to enable health professions education at UNBC will complement and reinforce the presence of the MD program, and create a true regional hub of health education. Moreover, a health professions building at UNBC will honour space adjacencies required for effective program delivery, can serve as an education and research center, and will play a key role in the recruitment and retention of health professionals in the North. Recent data shows that there will be a shortage of PTs and OTs in the north with retirements exceeding new appointments. While it is primarily planned to host the OT and PT programs, it will also provide a modest footprint in the North for the Midwifery and SLP programs in the form of office space. The new space will also enable inter-professional collaboration and achieve significant economies of scale through space sharing.

4.0 Options Considered

Sharing current medical education space was evaluated and deemed not viable due to the types of space required, the scheduling complexities of the medical program, and the lack of office space available.

Re-purposing other space on campus was also considered however not viable with the re-purposing of space for Engineering that is proposed.

5.0 Project Outcomes

Capital expansion is necessary to accommodate programming in the Allied Health Sciences. These professions are in short supply in the North. UNBC's track record is such that an increase in programming is a critical investment in order to produce graduates who have both the skills and inclination necessary to work in northern and rural communities.

6.0 Project Cost/Funding

Capital:

The investment required to develop a new facility at UNBC to host distributed PT and OT cohorts is estimated at approximately \$22 million. A lesser amount has been identified in the UBC Faculty of Medicine Initial Assessment report, however, as identified in the report "this estimate is preliminary and has not been thoroughly vetted by all OT, PT, UBC, and UNBC representatives". Applying the functional program to the Ministry budget model with Prince George as the location has resulted in a Project Budget of just under \$22 million.

Operating:

Incremental operating funding will be required to cover the increased FTE. These discussions are ongoing and a submission will follow under separate cover.

7.0 Key Risks

There are always certain risks associated with building a new facility such as escalation in costs, and schedule delays. There are also inherent risks in program expansion and clinical placement capacity for health programs. Each of these will need to be carefully considered during the detailed planning stages.

8.0 Project Schedule

Detailed Planning	2014
Design	2015
Construction	July 2015- August 2016
Occupancy	September 2016

Institution	Campus/City	Project Title	Project Category (1 or 2)	Project Priority
University of Northern British Columbia	Prince George	Facilities Management Building c/w multi-purpose lab/shop.	2	2 of 4

1.0 Current Situation

The current Maintenance Shop was built in 2003 to meet the needs of the Facilities Department at the time. Since then the University's maintenance needs have changed and expanded and the required facilities have not kept pace with growth. Category 9 (Maintenance) of the Space Inventory is currently at 68% of the BC space standard and has been steadily declining as the campus grows.

In addition, recent safety reviews have identified a number of code and regulatory issues that require infrastructure changes and upgrades. These include ventilation for welding, dust collection and management, and electronic access to WHMIS information. This replacement will also eliminate the VFA deferred maintenance requirements listed for this building (approx. \$100k) during the timeframe of this plan.

The current shop is also located on land that is adjacent to the campus ring road and is thus ideally situated for facilities that require student and public access. The site has also been identified as a good candidate for future expansion to accommodate Engineering programming.

2.0 Project Description

The plan is to redesign, expand (from the current 352 SM) and relocate the shop(s) to accommodate the current Facilities Management needs; take advantage of the Bioenergy plant surplus heat, replacing the current propane fuel; and consolidate distributed staff. The project will also build replacement shop and storage space that is slated for repurposing for Engineering lab space. A detailed analysis is currently underway to determine the best location based on traffic requirements and infrastructure available. This will provide space for 35 FM staff.

3.0 Project Objectives

- a) To meet the desired and required safety requirements of the staff.
- b) To provide the additional trades space required to meet the needs of the expanded campus and additional maintenance needs of the campus.
- c) To consolidate the shops and maintenance areas to gain operational efficiencies.
- d) To consolidate Facilities Management staff who are currently spread out across the campus in five different locations.

- e) To minimize space required and maximize its use by combining Facilities Shop needs with the need for Engineering lab/shop space.

4.0 Options Considered

Due to the “tin shed” type of building currently in place and the prime location for academic buildings, expanding or upgrading the current facility was not an option.

Maintaining the status quo is also not an option due to the expanded operating requirements and safety concerns.

5.0 Project Outcomes

It is anticipated that this will provide increased effectiveness and efficiencies amongst the Facilities Management (FM) department and better serve the long term needs of the University.

This project will also address the identified life-safety and occupational health risks.

To facilitate the re-purposing of some space for the Engineering program and combine shop and lab space to meet the needs of both FM and the initial Engineering programming.

6.0 Project Cost/Funding

Capital:

Due to the inability to find willing partners for a project of this type, the University is requesting 100% of the funding from the Ministry.

A preliminary cost estimate of the required functional plan is currently being sought. We expect to have this information before the end of June 2014.

7.0 Key Risks

There are always certain risks associated with building a new facility such as escalation in costs, schedule delays and the coordination of swing space during construction. These risks will be factored into the detailed planning.

8.0 Project Schedule

Planning	2014/15
Design	2015
Construction	2016-2017
Occupancy	2017

Institution	Campus/City	Project Title	Project Category	Project Priority
University of Northern British Columbia	Prince George	ENGINEERING PROGRAM SPACE – A Repurposing Project	2	3 of 4

1.0 Current Situation

We do not have appropriate space to offer the planned undergraduate Engineering expansion in current space and are therefore proposing to repurpose space in the Teaching & Learning building and the Teaching Lab.

2.0 Project Description

To provide the space required for the planned Engineering school a two-phased approach is proposed. Phase 1 includes re-purposing current space for expanded Environmental Engineering and offering Civil Engineering. Phase 2 (proposed for 2020) includes a new building for the “School of Engineering” which will include Mechanical and Electrical Engineering as well.

It is anticipated that this re-purposing of space will house 100 FTE (40 undergraduates in each of the two disciplines and 20 graduate students).

3.0 Project Objectives

- Recent labour market surveys (2008 ATEEC Report) indicates shortfalls of approximately 200 engineers, particularly in the North (Civil, Electrical and Mechanical). They also note that should the resource extraction activity accelerate (as it has and will continue to do so under the BC Jobs Plan), this will be an under estimate of the engineers required.
- This project aligns directly with UNBC and Governmental priorities and strategies, by training youth for high quality and exciting employment opportunities in the industries that have been identified as a driving force for BC’s economic development.

4.0 Options Considered

Offering expanded engineering offerings in the current space is not viable due to the lab and project room requirements.

Building a new building immediately to house the program(s) is not currently viable.

5.0 Project Outcomes

- Infrastructure Improvements
- Cost Effectiveness
- Innovation, Strategic Alignment & Quality Education

UNBC's track record has demonstrated that students educated in the North tend to stay in the North, while those educated elsewhere tend to use the North as a training ground, and leave the North when they have experience. This is a huge strain on our Northern industries, which can be alleviated by programs in the North. Anecdotally, some local firms have relied on "southern" University graduates in the past, and have moved exclusively to UNBC graduates, as they tend to remain in the North as they gain experience. UNBC annually provides more university graduates for the North than all other BC universities combined.

6.0 Project Cost/Funding

Major Capital Funding:

The repurposing of this space is dependent upon the new FM building going ahead. Therefore, once that has been notionally approved, project costing will be undertaken on the Engineering space.

Operating Funding:

Additional FTE funding will be required. A separate report on the details of the operating funding required will be forthcoming.

7.0 Key Risks

There is always a risk on the enrolment side when undertaking a new program however the market research information from the Engineering community supports the program.

8.0 Project Schedule

Planning	2014/15
Design	2015/16
Construction	2016 - 2017
Occupancy	2017

Institution	Campus/City	Project Title	Project Category (1 or 2)	Project Priority
University of Northern British Columbia	Prince George	Bioenergy Expansion and Modelling of a Sustainable Community	1	4 of 4

1.0 Current Situation

When UNBC installed the wood pellet system at the I.K. Barber Enhanced Forestry Laboratory (EFL), it was the first university in Canada to have an operating bioenergy system on campus. In 2011, the Bioenergy Plant opened, and the first year of operation saw UNBC exceed its expectations related to energy production and emissions. The opportunity exists to continue building on this platform to make the Prince George campus a model for renewable energy and its integration with teaching, research, the built environment, housing, food production, public education, and forest sustainability.

Phase 1, a partnership between the Ministry of Advanced Education, Industry and the University to connect the Residences and the Daycare to a new district energy system is currently underway.

2.0 Project Description

Phase 2 involves the expansion of the Bioenergy Plant and the addition of facilities for on-campus food production. The scale and scope of these facilities will be dependent on the new energy system and the potential to also capture waste heat from the existing Bioenergy Plant. It's likely that facilities will be built for crops, medicinal plants, and on-land fish farming, utilizing a broad range of UNBC academic programs, the existing EFL, and demonstration needs for rural communities and industry.

3.0 Project Objectives

Objective 1: To continue developing UNBC as a model for renewable energy implementation, especially in rural, resource-based communities and industry.

Objective 2: To strengthen UNBC's brand as Canada's Green University to attract students, employees, research funding, and public support.

Objective 3: To utilize UNBC's undeveloped lands in ways that will bring value and increase the University's national reputation.

4.0 Options Considered

A detailed analysis of the options regarding the crop and other community sustainability options and how they integrate with UNBC academic programming will continue to evolve during the planning process.

5.0 Project Outcomes

More than 600 communities across Canada are reliant on forests and nearly 200 burn diesel to generate energy. UNBC is ideally situated to be a model for them. The campus systems would be designed for deployment potential and students/alumni trained in them would be well-positioned to implement similar systems in communities and industrial sites.

6.0 Project Cost/Funding

Capital:

Detailed costing on the capital requirements will be carried out as specific components are further developed.

This project will have significant operating costs as well.

Fundraising feasibility is currently underway with an eye to identifying potential donors for this project.

7.0 Key Risks

The continued low cost of on-grid energy from natural gas and electricity affects the business case to develop bioenergy on campus. Nevertheless, the primary purpose of the demonstration is rural, forest-based, off-grid communities where the cost of energy is often higher and insecure, the carbon footprint of generating energy is higher, and where job creation opportunities are paramount.

UNBC's unique experience with bioenergy and fuel sourcing/delivery makes the continued development of this opportunity of lesser risk at UNBC than elsewhere. Other risks will be identified and mitigated as planning progresses.

8.0 Project Schedule

Phase 2:

Planning	2014-2016
Design	2016/17
Construction	Dependent on funding
Occupancy	TBD

MAJOR SELF-FUNDED (>\$5 MILLION) PROJECTS

1. Residence Renewal

As part of an overall review of Ancillary Services the University has undertaken a new student service that includes a revised Meal Plan program, a redesign of the current Food Services area and an upgrade to the Residence Buildings. This major overhaul will take place over the next 2 to 3 years and will involve a complete renovation to the majority of the residence suites. This will increase revenue and address a number of VFA requirements (current FCI is 0.19 = poor condition) and substantial ongoing maintenance.

2. International Education and Continuing Studies Building

Since the last Five Year Capital Plan, UNBC did conduct initial consultations regarding an English Language Studies and Continuing Studies Building (Fall 2012). At the time, it was determined that we could not self-finance this building. We have continued to review current and prospective space needs for International Education (a new unit that combines both our English Language Studies and International Student Programs and Exchanges operations), Continuing Studies, and Conference Services. The previous limitation all three units had in their ability to expand their operations continues to persist and has increased. The consequence of this pressure related to an inability to utilize dedicated space directly impacts their ability to grow revenues. This is further compounded because positions critical to grow the business cannot be added. Therefore the ability to properly manage growth is not a reality. Their presence on the UNBC campus also adds additional strains for much needed space by their academic colleagues.

Results of this work clearly illustrate that increasing specific capacities, through the creation of additional space and increasing human capital, of the three units, will allow for the self-financing of a new building.

With the approval of the Board of Governors, it is anticipated that this planning and design work could commence and be completed over the next two years and construction take place in 2018.

3. Dr. Charles Jago Northern Sport Centre (NSC) Expansion

The NSC continues to build on its partnership with the City and the facilities offerings. This business development has resulted in the building reaching its capacity. The University is currently exploring options for NSC expansion and will provide a feasibility study that aligns with the City and UNBC Master Planning efforts, to the NSC Board in late 2014.