



A4LE Conference 2021

Ministry of Education – May 6, 2021

Presented by:

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Damien Crowell – Regional Director, Capital Management Branch

Alexander Angus – Planning Officer, Capital Management Branch



Agenda

1. Overview:
 - Ministry Staffing Updates
 - Budget
2. Greenhouse Gas Reduction Policy
3. Mass Timber Initiative
4. NLC Policy Update
5. Questions



Overview – Staffing Updates

Contact List:

https://www2.gov.bc.ca/assets/gov/education/administration/resource-management/capital-planning/capital_contact_list.pdf



Capital Management Branch

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MAJOR CAPITAL PROJECTS UNIT SEISMIC MITIGATION PROGRAM (SMP), EXPANSION PROGRAM (EXP), REPLACEMENT PROGRAM (REP), RURAL DISTRICTS PROGRAM (RDP)

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SCHOOL DISTRICTS	39 Vancouver 47 Powell River 61 Greater Victoria 62 Sooke 63 Saanich 64 Gulf Islands 68 Nanaimo-Ladysmith 69 Parksville-Qualicum 70 Pacific Rim 71 Comox Valley 72 Campbell River 79 Cowichan Valley 84 Vancouver Island West 85 Vancouver Island North	19 Revelstoke 22 Vernon 23 Central Okanagan 27 Cariboo-Chilcotin 28 Quesnel 33 Chilliwack 34 Abbotsford 38 Richmond 41 Burnaby 54 Bulkley Valley 57 Prince George 59 Peace River South 60 Peace River North 73 Kamloops-Thompson 81 Fort Nelson 83 North Okanagan-Shuswap 91 Nechako Lakes	5 Southeast Kootenay 6 Rocky Mountain 8 Kootenay Lake 10 Arrow Lakes 20 Columbia-Kootenay 40 New Westminster 42 Maple Ridge 43 Coquitlam 46 Sunshine Coast 48 Sea to Sky 51 Boundary 75 Mission 78 Fraser-Cascade 93 Conseil Scolaire francophone	35 Langley 36 Surrey 37 Delta 44 North Vancouver 45 West Vancouver 49 Central Coast 50 Haida Gwaii 52 Prince Rupert 53 Okanagan Similkameen 58 Nicola-Similkameen 67 Okanagan Skaha 74 Gold Trail 82 Coast Mountains 87 Stikine 92 Nisga'a

MINOR CAPITAL PROJECTS UNIT ANNUAL FACILITY GRANT (AFG), BUILDING ENVELOPE PROGRAM (BEP), BUS ACQUISITION PROGRAM (BUS), CARBON NEUTRAL CAPITAL PROGRAM (CNCP), SCHOOL ENHANCEMENT PROGRAM (SEP), PLAYGROUND EQUIPMENT PROGRAM (PEP)

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Overview – Budget

2019/20 Funding (\$M)	2020/21 Funding (\$M)	2021/22 Funding (\$M)	2022/23 Funding (\$M)
\$788M	\$880M	1.033B	\$984M



PEXSISSEN & CENTRE MOUNTAIN LELLUM SCHOOLS, LANGFORD, BC ~ \$88.6M



HORNBY ISLAND SCHOOL, HORNBY ISLAND, BC ~ \$10.4M



UCLUELET SCHOOLS, UCLUELET, BC ~ \$44.8M



ERIC HAMBER SCHOOL, VANCOUVER, BC ~ \$105.9M

- The Province continues to invest lots of capital into the K-12 sector.
- Many schools are in design and under construction across BC.

GHG - Background

CleanBC Initiative

- Shift building energy systems away from fossil fuels towards cleaner sources of energy.
- Make every building more efficient by improving the BC Building Code in phases leading up to “net-zero energy ready” by 2032

Ministry of Education Mandate Letter 2020:

- Goal: “Continue to invest in new and modernized schools, including focusing on meeting seismic requirements and climate change and energy efficiency standards as set out in our CleanBC plan.”
- To support this goal, the Ministry is requiring that a GHG reduction strategy be applied to all new or replacement facilities.



GHG – Expectations & Application

Expectations – New/Replacement Buildings:

- Facility must be built to LEED Gold standard. Develop innovative and cost-effective strategies to minimize GHG emissions.
- Funding from Ministry's Major Capital Programs such as Expansion, Replacement and Seismic.

Expectations – Existing Buildings:

- Retrofit existing school facilities so they use less energy and reduce GHG emissions.
- Funding from the Ministry's Minor Capital Programs such as Carbon Neutral Capital Program (CNCP) and School Enhancement Program (SEP) along with the Annual Facilities Grant (AFG).

Applications

- As of August 2020, business cases (PDR's) for new/replacement schools are to include assessment of options to reduce GHG emissions.
- It is assumed that the design team will hire an energy consultant to assist in the development of these options.

GHG – PDR Sample Info

- Key metrics to include as part of the GHG emissions assessment are found in the following table.

Metric	Unit of Measure	Option 3 – LEED Gold Equivalent	Option 4 – Increased Energy Performance <i>(XX% GHG Reduction / X% Capital Cost)</i>	Additional Options – Increased Energy Performance <i>(XX% GHG Reduction / X% Capital Cost)</i>
Energy Usage	MWh/year			
Annual Energy Cost	\$/year			
Energy Use Intensity (EUI)	kWh/m ² /year			
GHG Emissions	Tonne Co2e/year			
Construction Cost Premium over Option 1	\$ (%)			
GHG Emission Reduction over Option 1	Tonne Co2e/year (%)			

- Narrative describing the approach to reducing greenhouse gas emissions.

GHG – Key Metrics for Success

Govn't Considerations:

- Options with incremental capital costs up to 3% of construction costs¹ which result in at least a 50% reduction in GHG emissions² will be strongly considered by gov'n't for approval.
- An option with incremental capital costs higher 3% of construction costs is to be presented if a 50% reduction in GHG emissions can't be achieved for less than 3% of construction costs.
- Other options may be presented for consideration as well.

Notes:

¹**Construction costs** are composed of all project funding **EXCEPT** risk reserves.

²Reduction relative to the LEED Gold baseline that uses natural gas.

GHG – Reduction Strategies - Examples

Passive Design Elements

- High R-Value Insulation
- Window to Wall Ratio
- Building Massing
- Building Orientation



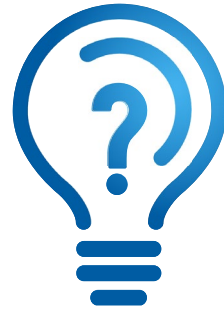
Active Design Elements (Mechanical system)

- Heat pumps
- Heat Recovery Ventilators
- Energy Efficient Lighting & Appliances
- Building automation/Smart Buildings

Henry Hudson Elementary in Vancouver and Cowichan Secondary in Duncan – efficient heat pump systems, heat recovery ventilation and minimize use of natural gas



Questions



Mass Timber – Background/Goals

Ministry of Forests, Lands, Natural Resource Operations and Rural Development Mandate Letter 2020:

- Goal: “Lead the transition of our forestry sector from high-volume to high-value production, increasing value-added initiatives of our forest economy, including by making mass timber a priority in public buildings moving forward”
- Recent establishment of the Office of Mass Timber Implementation in the Ministry of Jobs, Economic Recovery and Innovation to facilitate this initiative



Mass Timber – Resources & Examples

Resources:

- Office of Mass Timber Implementation
- Code Check to determine code permissions and restrictions for the use of wood: <https://www.codechek.ca/en/>

Examples:

- Examples of BC Mass Timber buildings: <https://www.naturallywood.com/>
- Lots of examples of Mass Timber elements (roof, walls, etc.) being incorporated into BC schools.
- Bayview and Begbie Elementary Schools in Vancouver are currently under construction with vast majority of structural elements being Mass Timber.



Mass Timber - Benefits

Benefits

- Renewable & Sustainable Product
- Reduced Carbon Footprint – Compared to Concrete/Steel
- Faster Installation – Large Prefabricated Panels
- Health and Wellness Benefits
- As industry becomes more familiar with Mass Timber, costs and schedules should be reduced
- “Wood First Principle” could have significant benefits to the BC economy.

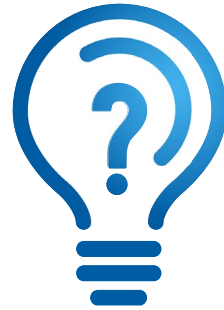


Mass Timber – Factors For Success

- ✓ Robust advance planning
 - ✓ Project schedules
 - ✓ Accurate measurements
- ✓ Retaining experienced contractors
- ✓ Effectively managing supplies
 - ✓ Sourcing, delivery and storage



Questions



Neighbourhood Learning Centre

- NLCs have been included in new and replacement school projects for many years.
- There were no formal policies in place which led to a number of issues and unintended uses.
- The practice was to include up to an additional 15% of the school new area to be dedicated for community use.
- Looked at how we could remove uncertainty and clarify the NLC program.

Neighbourhood Learning Centre

- A new NLC Policy has been included as an appendix to the Schedule B Companion Document
- The intent is to promote strong school-community partnerships utilizing school facilities.
- Eligibility for funding is determined case-by-case and is based on community needs, supported by a business case
- Must identify need, users, and operators.
- Applies to new or replacement schools
- Major additions or partial replacements may be considered

NLC Planning

- Need and use for NLC should be determined in collaboration with local community and First Nations
- Government's priorities must be considered - Childcare
- Proposed NLC is reviewed by Ministry during PDR development for capital funding eligibility.
- NLC use and partnerships should be considered in LRFPs
- Demonstrate how NLC meets long-term community needs
- Proposed NLC use must demonstrate how it will support, and be accessible to, the community

NLC Funding

- NLC funding is allocated by the Ministry based on school type and design capacity
- Funding is a cash allowance subject to increase by location factor, but not escalation
- The NLC budget is inclusive of design fees, taxes, and supporting areas such as mechanical space.
- Districts may partner with local governments or other agencies to secure additional funding.
- Third party funding must be secured before gov'n't approval.

NLC Funding

- NLC funding is determined by school type and capacity.
- For a capacity not listed contact your Planning Officer

Fig 1.1 NLC Capital Budget Allocation Based on School Type and Design Capacity

	Design Capacity*	Budget (Millions)**
(K + E) Elementary	100-175	1.0
	180-325	1.5
	330-425	1.8
	430-600	2.1
	605-800	2.4
Middle	200-350	1.6
	375-550	2.0
	575-800	2.3
	825-1,000	2.6
Secondary	750-900	2.6
	925-1,200	2.9
	1,225-1,600	3.2
	1,625-2,100	3.5
	2,125+	3.8

NLC Key Points

- NLC capital funding must only be used for the intended purpose of creating the NLC space itself.
- NLC funding may not be used to enhance a school's area already funded under the capital project budget.
- NLC funds are carried in Supplemental Items and are released post-tender when costs are better understood.
- The Ministry does not provide any operating funds for NLC
- Your Ministry Planning Officer is your resource for any questions related to NLC

Questions

