

Cowichan Secondary School Project Identification Report 30 September 2016





Cowichan Secondary School Project Identification Report

Executive Summary

BACKGROUND

Ground was broken in 1949 for the construction of Cowichan Secondary School. Now in its 67th year, this facility is by far the oldest Secondary school in the Cowichan Valley School system, having faithfully served thousands of graduating students without a single major renovation. However, the building was designed for an era that did not anticipate modern curriculum delivery, and the wear of almost seven decades is evident. In addition to the limitations of outmoded design, Cowichan Secondary is in urgent need of seismic mitigation and many other building systems upgrades. In consideration of the other school facilities that are competing for limited Maintenance and Capital improvement funding, the time has come to make a decision as to the further viability of Cowichan Secondary as an educational facility.

On the positive side of this ledger, Cowichan Secondary occupies what is arguably the largest and most attractive urban redevelopment site in the Cowichan Valley. Municipal Area Planners have taken note of potential opportunities this site may offer to kick-start an ambitious new urban redevelopment initiative spanning the next 30 years. Part of that initiative sees the realization of a replacement Secondary school located adjacent to the new Vancouver Island University campus on land that the Cowichan Valley School District already owns. Additional elements of this strategy offer attractive solutions to the problem of finding value in other School District properties that are nearing the end of their functional lives.

Over the past decade, the Cowichan Valley School District has examined various potentially beneficial opportunities with Vancouver Island University and local governments. Each opportunity has been evaluated specifically for long term benefit to all parties. We now believe that strategies are in place that could create unique and mutually beneficial synergies, bringing exciting new ideas and opportunities to our students and the broader community.

RESTRUCTURING PLAN – CAPACITY AND ENROLMENTS

School District No. 79 (Cowichan Valley) went through an extensive public consultation process and Restructuring Plan over the 2012/13 school year. Grade configurations were standardized, specialized programs relocated and a number of schools were closed. During this phase of Restructuring, Cowichan Secondary was converted from a grades 10-12 Secondary school to a grades 8-12 Secondary school as of September 2013. Due to the significant increases of two additional grades of students, the Quamichan school facility is being used as a satellite Cowichan Secondary campus. Capacities of the two campuses are 1,000 and 550 respectively. It is anticipated that Cowichan Secondary grades 8-12 enrolments will fluctuate in the range of 1500 students for the foreseeable future.



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SEISMIC RISK

School District 79 commissioned a Seismic Project Identification Report (SPIR) in October, 2015. Based on new information identified in the SPIR, the Ministry of Education (MOE) has suggested that School District 79 submit a Life Cycle Cost Analysis - and supporting documentation – comparing a Cowichan Secondary Seismic Upgrade option with a Cowichan Secondary Replacement School option.

NEIGHBOURHOOD LEARNING CENTRE

The Government of British Columbia has established the Neighbourhood Learning Centres (NLC) program. The Provincial Government's vision for the future of education in British Columbia is one where schools and community organizations partner to create Neighbourhood Learning Centres where people can access educational and community services under one roof.

School District 79 recommends that the Neighbourhood Learning Centre allowance be contributed toward the cost of constructing a Trades Training Centre of Excellence to be located adjacent to and jointly operated by both Vancouver Island University and the new Cowichan Secondary School on a cost-recovery basis. This Trades building is envisioned as a focused facility for combination Secondary, Post-Secondary and specialized skills training.

PROJECT OPTIONS

After extensive research of alternatives, three Project options were developed.

Option A: Seismic Mitigation.

Option B: Replacement - 1000 Capacity.

Option C: Replacement - 1500 Capacity.

Project options were assessed for Educational benefits, compatibility with Long Range Facility Plan (LRFP) objectives, initial Capital investment requirements and Life Cycle operating costs.

It was found that, in concert with implementation of LFRP strategies, Option C: Replacement – 1500 Capacity offered the greatest educational and operating cost benefits, as well as the lowest Life Cycle cost of ownership.

RISK AND RISK MITIGATION

In order to maximize the success of the Capital Project delivery, a number of risks have been identified. The potential risks are identified as Reserve Items in the Order of Magnitude Costs. The Risk items are itemized and costed in the Project Identification Cost Report.



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ORDER OF MAGNITUDE COSTS

Total Project Cost estimates for the three (3) options are summarized as follows:

Cowichan Secondary PIR - Project Options Capital Funding Comparison			
10 August 2016			
	Option A <u>Seismic Upgrade</u> 1550 Capacity dual campus	Option B <u>REPL 1000</u> 1550 Capacity dual campus	Option C <u>REPL 1500</u> 1500 Capacity single campus
Total Project Cost Estimate (excluding Reserve Items)	\$24,456,888	\$45,503,673	\$53,710,440
Reserve Items	\$3,184,602	\$7,301,278	\$8,144,130
Total Project Cost Estimate (including Reserve Items)	\$27,641,490	\$52,804,951	\$61,854,570
less Property dispositions - see Note A	(\$2,355,000)	(\$10,558,600)	(\$15,592,319)
Net Capital Project Funding Requirement	\$25,286,490	\$42,246,351	\$46,262,251
Note A: Refer to Project Options Cost Comparison for properties available to offset costs of each Option			

School District 79 is prepared to offset the initial Capital Cost for a Replacement school project. The proceeds of the sale of the existing Cowichan Secondary School property - appraised in 2007 at \$5,590,000 - would be available for this purpose. Recent MOE approval to dispose of three (3) other surplus school properties will allow proceeds of those property sales to be contributed to this project as well. A replacement school would also permit the disposal of additional surplus School District properties, the proceeds from which will be contributed toward the Capital cost of the selected Project option. A detailed summary of estimated contributions is included in the Project Options Cost Comparison included at the end of Chapter 4.

LIFE CYCLE COST ANALYSIS

The results of the Life Cycle Cost Analysis - over 40 years - are as follows:

Cowichan Secondary PIR - Project Life Cycle Cost Comparison			
10 August 2016			
	Option A <u>Seismic Upgrade</u> 1550 Capacity dual campus	Option B <u>REPL 1000</u> 1550 Capacity dual campus	Option C <u>REPL 1500</u> 1500 Capacity single campus
Initial Capital Cost (Year 0)	\$24,456,888	\$45,503,673	\$53,710,440
Escalated Value (Year 40)	\$246,832,835	\$199,651,292	\$182,474,165
Net Present Value (NPV) at Year 40	\$115,056,631	\$107,841,620	\$104,250,481



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RECOMMENDATIONS

It is recommended that School District No. 79 (Cowichan Valley):

1. apply for a Capital Project in the 2016/17 Capital Plan submission for a Replacement school for Cowichan Secondary School:
 - a. with a capacity of 1500 students
 - b. with a total project budget, including reserve items, of \$61,854,570.
2. commence a Neighbourhood Learning Centre stakeholder consultation process to confirm the appropriate allocation of Neighbourhood Learning Centre space for the Replacement School using the Guiding Principles from the Project Identification Report.
3. Undertake further investigation and quantification of the identified potential risks as part of the Project Definition Report upon receipt of approval in principle from the Ministry of Education.



Cowichan Secondary School Project Identification Report

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Chapter 1 – Background and Purpose

In 1994, School District No. 79 (Cowichan Valley) had a facilities study done on Cowichan Secondary School. Several renovation and addition options were considered, including a replacement school. The facilities study recommended a replacement school, based upon an evaluation of the options. In 2004, the two-storey classroom block and the gymnasium block received a High seismic risk rating from the Ministry of Education.

In 2005, a vision for an educational and recreational campus was created that would see a new permanent facility for the Vancouver Island University Cowichan Campus and a new school to replace Cowichan Secondary School developed next to the Cowichan Community Centre in the heart of Duncan. This concept, with partnership from Vancouver Island University, School District No. 79, the City of Duncan, the Cowichan Valley Regional District, and the Municipality of North Cowichan, became known as Cowichan Place. Extensive public consultation conducted by the partnership group indicated strong public support for the concept. The local governments, the University Board, the School Board and the Cowichan Exhibition Society agreed in principle to proceed with planning and development of this proposed concept.



In 2007, the Ministry of Education allowed Cowichan School District No. 79 (Cowichan Valley) to borrow funding for site acquisition of the Cowichan Place property. The Ministry of Education agreed to fund the outstanding debt in August 2012.

The Cowichan Place site is 13.0 acres and adjacent to the new Vancouver Island University Cowichan Campus facility on the former Exhibition grounds site.

School District No. 79 (Cowichan Valley) received a Cowichan Secondary Seismic Project Identification Report (SPIR) in October 2015. A more detailed seismic assessment performed by a qualified structural engineer at School District No. 79 (Cowichan Valley) request has now determined Blocks 1 through 5 have either High 1 or High 2 seismic risk.

The Ministry of Education (MOE) has suggested that School District No. 79 (Cowichan Valley) submit a life-cycle cost analysis, and support documentation, comparing a Cowichan Secondary seismic upgrade option with a Cowichan Secondary replacement school option.

The Ministry of Education requires a Project Identification Report to accompany a major capital project application for funding.





Chapter 2 – Educational Program and Neighbourhood Learning Centre

School District No. 79 (Cowichan Valley) is proposing a replacement school for Cowichan Secondary on the Cowichan Place site.

School District No. 79 (Cowichan Valley) created an Advisory Committee to assist in the creation of the Project Identification Report.

RESTRUCTURING PLAN AND PROJECTED ENROLMENT TRENDS

School District no. 79 (Cowichan Valley) went through an extensive community consultation process in the 2012 / 2013 school year. As a result of the Board approval of the resulting Restructure Plan on May 15, 2013, Cowichan Secondary was converted from a grades 10 to 12 secondary school to a grades 8 to 12 secondary school as of September 2013.

Due to the significant increase of two additional grades of students, the former Quamichan Middle School facility is being used as a Cowichan Secondary satellite campus for some of Cowichan Secondary enrolments and programs.

As a result of the Restructure Plan, recent enrolment trends and forecasts, it is anticipated that the new Cowichan Secondary School will improve retention of Secondary students and that enrolment will fluctuate in the 1500 student range for the foreseeable future.

SCHOOL DISTRICT NO. 79 (COWICHAN VALLEY)															
COWICHAN SECONDARY 8-12 ENROLMENT PROJECTION															
	Central Zone Kindergarten & Elementary								Cowichan Secondary						
	K	1	2	3	4	5	6	7	8	9	10	11	12	Head Count	
2015/2016	268	263	273	307	298	245	273	248	263	277	266	272	245	1323	
2016/2017	253	283	267	285	314	314	243	262	287	271	279	251	280	1368	
2017/2018	258	253	283	267	285	314	314	243	262	287	271	279	251	1350	
2018/2019	263	258	253	283	267	285	314	314	243	262	287	271	279	1342	
2019/2020	268	263	258	253	283	267	285	314	314	243	262	287	271	1377	
2020/2021	274	268	263	258	253	283	267	285	314	314	243	262	287	1420	
2021/2022	279	274	268	263	258	253	283	267	285	314	314	243	262	1418	
2022/2023	285	279	274	268	263	258	253	283	267	285	314	314	243	1423	
2023/2024	291	285	279	274	268	263	258	253	283	267	285	314	314	1463	
2024/2025	296	291	285	279	274	268	263	258	253	283	267	285	314	1402	
2015/2016 and 2016/2017 Numbers = Actual Enrolments									Enrolment accommodated at Cowichan Sec (1000 capacity) and Quamichan satellite campus (550 capacity)						

EDUCATIONAL PROGRAM

Cowichan Secondary School offers a comprehensive educational program for grades 8 to 12 students. Serving roughly half of the total District student population, it is the only Secondary school in the Cowichan Valley School District offering a French Immersion program.

Cowichan Secondary School also offers Applied Skills courses and programs for students in conjunction with Camosun College and Vancouver Island University.

The Cowichan Secondary School Project identification Report Advisory Committee identified the following Critical Success Factors for the Project:

- Maintain and enhance high academic and athletic standards.
- Build a facility with flexible and adaptable spaces for the future, including enabling 21st Century Learning.
- Create a welcoming climate for all students. Ensure a sense of community, a gathering space for students.
- Make a space to accommodate the entire student body.
- Design a building modelling environmental stewardship. Build an efficient building.
- Develop a “cool” space, or spaces, where students want to be.
- Conceive a facility that will support a strong faculty.
- Maintain and enhance the range of program and extra-curricular activities that reaches every student.
- Design a building through a process that maintains and enhances community relationships and partnerships, with all stakeholders.
- Ensure a funding model must maintain autonomy and show value to the District and the community.

OPTIONS AND PROPOSED CAPACITIES

Three (3) options were created for the Project Identification Report.

Option A is the seismic upgrade only. The Cowichan Secondary Seismic Project Identification Report (SPIR) October, 2015 can be found in Appendix A.

Option B is a 1000 capacity replacement school, with a “core” that is built for an ultimate size for 1500 students. The Design Aid Sheet (DAS) for Option B can be found in Appendix B.

Option C is a 1500 capacity replacement school. The Design Aid Sheet (DAS) for Option C can be found in Appendix C.

NEIGHBOURHOOD LEARNING CENTRE

The Government of British Columbia has established the Neighbourhood Learning Centres (NLC) program. The Provincial Government's vision for the future of education in British Columbia is one where schools and community organizations partner to create Neighbourhood Learning Centres where people can access educational and community services under one roof.

School districts are encouraged to consult with community partners and organizations to find unique and innovative ways to design schools with community use in mind and create places where people have better access to educational and community services. All school districts are now being encouraged to move towards this inclusive approach to planning the use of new school space and include elements of Neighbourhood Learning Centres in all new and replacement schools.

The Cowichan Secondary School Project identification Report Advisory Committee reviewed the process and outcomes of other school district capital projects and developed the following guiding principles for a stakeholder consultation process.

- Complementary and enhancing to the Cowichan Secondary School community.
- Enabling the Vision of Cowichan Place to be further realized.
- Supports life-long learning in an inclusive way.
- Suitability for co-location at a school.
- Ability to fund incremental operating costs.
- Capability of the space being used beyond the school hours.
- Meets the Ministry of Education Vision for Neighbourhood Learning Centres.
- Ability to operate independently.

REPLACEMENT OPTIONS - CONCEPT PLAN

The Replacement School Concept Plan option was created with the school fronting University Way. The Concept Plan has flexibility for a potential separate Trades Training Centre of Excellence building located between the secondary school and the existing Vancouver Island University Cowichan Campus building. The separate Trades Training Centre of Excellence building could be a potential use of Neighbourhood Learning Centre space.





Chapter 3 – Order of Magnitude Capital Cost Estimates

Spiegel Skillen and Associates (SSA) prepared order of magnitude capital cost estimates for the Cowichan Secondary School Project Identification Report.

SSA utilized information from the Cowichan Secondary School Project Identification Report, as well as observations and information by School District No. 79 (Cowichan Valley) and the Consultant Team.

The Total Project Cost estimates are summarized as follows:

COWICHAN SECONDARY SCHOOL			
PROJECT IDENTIFICATION REPORT UPDATE			
TOTAL PROJECT COST ESTIMATES			
Item	Option	Option	Option
	A	B	C
Total Project Cost Estimates (Excluding Reserve Items)	\$24,456,888	\$45,503,673	\$53,710,440
Reserve Items	\$3,184,602	\$7,301,278	\$8,144,130
Total Project Cost Estimates (Including Reserve Items)	\$27,641,490	\$52,804,951	\$61,854,570

School District 79 is prepared to offset the initial Capital Cost for each project option, however available dispositions vary depending upon which option is selected. A summary of estimated contributions is included in the Project Options Cost Comparison at the end of Chapter 4.

LIFE-CYCLE COST ANALYSIS

Spiegel Skillen and Associates (SSA) carried out a Life Cycle Cost (LCC) Analysis. The result of this analysis indicates that over the life cycle term, Option C: 1500 Capacity Replacement is the least costly alternative. More detail on the Life-Cycle Cost Analysis is found in Appendix D (Total Project Capital Cost Estimates and Life-Cycle Cost Analysis).



Chapter 4 – Business Case

THE NEED

Cowichan Secondary School was constructed in 1949 and is near the end of its physical and functional life. A decision must be made as to its further viability as an educational facility.

A Seismic Project Identification Report completed in 2015 indicates that Cowichan Secondary is in urgent need of seismic mitigation. The school is made up of six blocks as described below. Five of the six blocks have been assessed as having high seismic risk. The estimated cost to mitigate this risk is \$27.6 Million, however this expenditure will not address the many functional shortcomings inherent in the outdated design of the building.

Block #	Block Name	Area (m ²)	Current Risk	Status
1	1949 Gymnasium	1,018	High 2	Structural Upgrade Required
2	1949 2-Storey Classrooms	4,606	High 2	Structural Upgrade Required
3	1949 1-Storey Classrooms	1,597	High 2	Structural Upgrade Required
4	1965 Shop Building	1,550	High 1	Structural Upgrade Required
5	1965 2-Storey Commercial Building	1,412	High 1	Structural Upgrade Required
6	1976 1-Storey Band Building	152	Low	Meets Structural Life Safety Requirements

The current Ministry of Education CAMS VFA Facility Condition Index (FCI) rating for Cowichan Secondary is 0.52. Over the next 15 years the estimated capital cost required to upgrade the school to extend its life is \$12.3 Million.

STATE OF READINESS

School District 79 owns the land for a replacement secondary school. With the approval of the Honourable Shirley Bond, in 2008 the School District acquired a particularly well-suited site on which to build a replacement for Cowichan Secondary School. The site is adjacent to Vancouver Island University's Cowichan campus and the community centre, pool and arena - a new Public precinct known as Cowichan Place.

During the 2012/13 year, School District 79 made significant decisions to reconfigure the way services are delivered to our students. We standardized grade configurations, moved specialized programs and closed a number of schools. This first phase of restructuring enabled us to significantly reduce our surplus space, however replacing Cowichan Secondary School is the catalyst for a number of additional changes that will build on our successes to date, allow us to divest ourselves of outmoded and costly facilities and complete our restructuring efforts.

With the adoption of a new University Village Local Area Plan last year, local Municipal and Regional governments are poised to begin a collaborative redevelopment of the Cowichan Place site and surrounding area to create a new, modern and vital community. The replacement of Cowichan Secondary provides the opportunity to create timely synergies that will be a significant step toward the realization of this forward-thinking urban redevelopment initiative.

PROJECT OPTIONS

Collaborating with Vancouver Island University and local Governments over the past decade, we have examined potential partnership opportunities and have explored many ideas which might allow us to realize and participate in a broader vision of excellence in the development of our community.

Local options involving catchment area boundaries and/or shifting of enrolment to other District facilities were studied. However School District 79 is comprised of four distinct urban centres each having Secondary schools geographically remote from the others. Cowichan Secondary is the only Secondary school in the Central Zone - the urban hub of the Cowichan Valley – and serves roughly half the student population of the entire School District. The closest Secondary schools are located in communities over 20 kilometres distant to the North and South, and 30 kilometres to the West. Although there is some excess capacity at other Secondary schools in the District, there is insufficient combined capacity to absorb the students attending Cowichan Secondary at the main campus location.

Striving to maximize project benefits while minimizing funding requirements, three other options were developed for further study; a detailed description of these options is included within this document - Appendices A to C - while a Project Options Cost Comparison is included at the end of this chapter.

Option A: Seismic Mitigation

Option B: Replacement – 1000 Capacity

Option C: Replacement – 1500 Capacity

Option A: Seismic Mitigation is the least costly in terms of initial Capital funding requirements, however it has by far the least long term benefit and would be a questionable investment considering the age, design limitations and condition of the building. This option was excluded from further consideration but is included in the cost comparisons for information.

Option B: Replacement – 1000 Capacity offers some fiscal and educational benefits but these are more than offset by higher downstream operational and renewal costs, making this the next most costly choice over the facility Life Cycle term. Further, this option is not ideal in that it offers educational opportunities for students of the new school that would not be available to those attending the Quamichan satellite campus. For these reasons this option was not recommended for further study.

Option C: Replacement – 1500 Capacity is marginally more costly in initial Capital investment dollars than Option B but offers the greatest financial and educational benefits. This option permits consolidation of Secondary enrolment to a single facility that is adjacent to a post-secondary institution, providing attractive and accessible options for continued study. It also offers SD79 the opportunity for divestment of the remaining highest FCI facilities in our inventory, makes public land available for critical infrastructure development, increases Capital contributions to the replacement school costs, avoids significant upgrade and renewal costs while at the same time providing the greatest annual operational savings. In consideration of all desired outcomes, Option C is the clear choice.

EDUCATIONAL WINS

School District 79 seeks to transform education for the youth of the Cowichan Valley; not simply to replace an aging Cowichan Secondary school but to take advantage of emerging synergies that will create exciting, cutting-edge opportunities for coming generations of our students to explore.

Through Dual Credit offerings, trades training will be “mainstreamed” into secondary school culture and blended with adult training opportunities offered by VIU, improving access to skills and apprenticeship training, increasing both choice and flexibility for our students.

Academic students will have access to varied and relevant opportunities to explore career studies beyond Secondary graduation. This is critical to improved Secondary retention and graduation rates.

Upon Ministry approval of the new Cowichan Secondary, the Cowichan Place Partners committee - comprised of representatives of three local governments, Vancouver Island University and School District 79 - plans to jointly fund a study to determine the feasibility of a Community Green Energy facility, to be located on property dedicated within Cowichan Place. If found viable, the realization of this plan offers an opportunity to integrate cutting edge design concepts and operational technology into both academic and trades curricula and to establish a Green Energy Research program which will engage both SD79 and VIU students in the long term expansion of a Community Energy grid.

With the savings SD79 has realized from the first phase of Restructuring, we have improved our focus on vulnerable learners, early learning programs and providing more options for students in our Graduation Program. The completion phase of our restructuring strategy will result in an additional \$650,000 per year being available for facility improvements and educational programming.

BUSINESS CASE - THE PLAN

Construct a 1500 capacity replacement Cowichan Secondary School on the site earmarked for it, adjacent to Vancouver Island University’s Cowichan Campus. Dispose of the existing Secondary school site which is attractively situated for redevelopment.

Contribute the Neighbourhood Learning Centre allowance towards the cost of constructing a new trades training centre adjacent to VIU and the new Cowichan Secondary. Dispose of the former Koksilah Elementary School (A temporary Trades Training Centre, operated by VIU, is located at Koksilah.)

Repurpose the Academic wing of the Quamichan campus into an elementary school, move Alexander Elementary enrolment into it and close Alexander. This element of the strategic plan also provides for additional Elementary capacity to serve anticipated growth pressures in the SD79 Central Zone.

Move the SD79 Board Office to the former Shops and Fine Arts wing of Quamichan. Rezone and dispose of the SD79 Board Office site which is ideally located at the terminus of a new business corridor identified in the University Village Local Area Plan.

Dispose of the Alexander Elementary or contribute the site to the local Municipality for a desired stormwater collection and treatment plant, in exchange for a Capital contribution of fair market value.

Dispose of other identified surplus property and earmark the proceeds for this plan.

Redirect operational savings as a result of disposition of old, inefficient facilities into educational programming.



PROJECT OPTIONS COST COMPARISON

	Option A Seismic Upgrade 1550 Capacity dual campus	Option B REPL 1000 1550 Capacity dual campus	Option C REPL 1500 1500 Capacity single campus
Project Budget (including Reserve items)	\$27,641,489	\$52,804,951	\$61,854,570
SD Capital Contributions			
Long Range Facilities Plan			
Sale of Cowichan Secondary site		(\$5,590,000)	(\$5,590,000)
Sale of SD Board office / DRC site*			(\$1,592,554)
Sale of Alexander Elementary site*			(\$3,401,165)
Sale of Koksilah Elementary site*		(\$2,613,600)	(\$2,613,600)
Cost to convert Quamichan to Elementary			\$230,000
Cost to relocate SD Admin to Quamichan			\$930,000
Cost to upgrade Quamichan to Sr. Sec. standards	\$1,200,000	\$1,200,000	
SD Consolidation			
Sale of Mill Bay Elementary site	(\$520,000)	(\$520,000)	(\$520,000)
Sale of Charles Hoey site	(\$565,000)	(\$565,000)	(\$565,000)
Sale of Yount Elementary site	(\$470,000)	(\$470,000)	(\$470,000)
SD Restricted Capital Account balance	(\$2,000,000)	(\$2,000,000)	(\$2,000,000)
Net SD Capital Contributions to Initial Project Costs	(\$2,355,000)	(\$10,558,600)	(\$15,592,319)
Net Initial Capital Project Funding Requirement	\$25,286,489	\$42,246,351	\$46,262,251
Cost Avoidance Savings (unescalated)			
Long Range Facilities Plan (VFA Requirements)			
Cowichan Secondary - Main Campus		(\$12,297,904)	(\$12,297,904)
SD Board Office / DRC complex			(\$1,487,544)
Alexander Elementary			(\$3,607,824)
Koksilah Elementary		(\$2,734,091)	(\$2,734,091)
Seismic mitigation - Alexander Elementary			(\$2,674,090)
SD Consolidation (VFA Requirements)			
Mill Bay Elementary	(\$3,187,673)	(\$3,187,673)	(\$3,187,673)
Charles Hoey	(\$877,186)	(\$877,186)	(\$877,186)
Yount Elementary	(\$1,516,194)	(\$1,516,194)	(\$1,516,194)
Net Life Cycle Cost Avoidance Savings	(\$5,581,053)	(\$20,613,048)	(\$28,382,506)
Life Cycle Operating Costs (40 years - unescalated)			
Maint / Custodial / Energy			
Reductions	(\$1,723,200)	(\$26,717,600)	(\$37,404,520)
Additions		\$27,759,920	\$33,072,920
School Staffing			
Reductions			(\$1,600,000)
Additions			
Net Life Cycle Operating Costs	(\$1,723,200)	\$1,042,320	(\$5,931,600)
Net Life Cycle Cost of Ownership	\$17,982,236	\$22,675,623	\$11,948,145

* Figures reflect rezoning prior to sale

Cowichan Secondary School Project Identification Report

Appendix A – Cowichan Secondary Seismic Project Identification Report (October 2015)

September 14, 2016



**Appendix A – Cowichan Secondary Seismic Project Identification Report
(October 2015)**



PROJECT IDENTIFICATION REPORT

COWICHAN SECONDARY SCHOOL SEISMIC MITIGATION PROJECT SCHOOL DISTRICT 79 – COWICHAN VALLEY

A report that provides high-level scope, schedule, budget and risks for the mitigation of seismic risk at this school through the Ministry of Education's Seismic Mitigation Program.

October 2015

**COWICHAN SECONDARY SCHOOL
SCHOOL DISTRICT 79 – COWICHAN VALLEY**

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APPENDICES

- A) Design Aid Sheet
- B) Plan Showing Blocks

1) CONSULTANTS

Consultants engaged to complete this report are:

- Phillip Chambers, Phillip Chambers Consulting Ltd.
- Lee Rowley, Herold Engineering Ltd.
- John Granger, Advicas Group Consultants Inc.

2) PROJECT IDENTIFICATION REPORT - PURPOSE

The intent of this Project Identification Report (PIR) is to provide an estimate of scope, schedule, budget and risks as accurately as possible for a seismic/structural upgrade. Estimates are based on high-level information using square meters and experience based unit rates for construction. Other project costs are based on experience in developing similar seismic projects.

As this seismic upgrade project is relatively straightforward, the only option provided is for the structural upgrading of the school. This report will also make it clear this school is required for the foreseeable future given the Cowichan Valley School District's (SD79's) capacity and enrolment projections.

This report is due to the Ministry of Education, as per Capital Plan Instructions of July 2015, by November 2nd, 2015.

3) BACKGROUND

- Cowichan Secondary School, including with the Quamichan campus (1.5 kilometers to the east), serves the Duncan (central) area of SD79.
- SD79 has three other secondary schools that are dispersed over a large geographic area as follows:
 - Lake Cowichan Secondary, 30 kilometers to the west of Cowichan Secondary,
 - Chemainus Secondary, 21 kilometers to the north,
 - Frances Kelsey Secondary, 20 kilometers to the south in Mill Bay.
- Cowichan Secondary is located at 2652 James Street in Duncan.
- The two-storey facility was originally opened in 1950. A number of additions have been added over time, including the following major construction programs: a two-storey detached Commerce building (the main floor in 1966 and a second floor addition in 1974), an elevated second storey Library addition at the front of the Main Building in 1969, a detached one-storey vocational building in 1976, and additions of the Math Annex and the Band Building in 1998.
- The school is made up of six blocks as described below ... five of which have been assessed as having high risk:

Block #	Block Name	Area (m ²)	Current Risk	Status
1	1949 Gymnasium	1,018	High 2	Structural Upgrade Required
2	1949 2-Storey Classrooms	4,606	High 2	Structural Upgrade Required
3	1949 1-Storey Classrooms	1,597	High 2	Structural Upgrade Required
4	1965 Shop Building	1,550	High 1	Structural Upgrade Required
5	1965 2-Storey Commercial Building	1,412	High 1	Structural Upgrade Required
6	1976 1-Storey Band Building	152	Low	Meets Structural Life Safety Requirements


- The school accommodates Grade 8 to Grade 12 students. Nominal capacity for both campuses is 1,550 and enrolment is 1,373.
- In 2004 with the announcement of the Seismic Mitigation Program (SMP) for schools, Cowichan Secondary was assessed with ‘High’ risk for two of the six blocks, and ‘Moderate/High’ for two others.
- A high level re-assessment in 2010/2011 determined the school had Medium risk.
- A more detailed seismic assessment performed by a qualified structural engineer at SD79’s request has now determined Blocks 1 through 5 have either High 1 or High 2 risk.
- The High 1 risk ranking is used for those structures with the highest risk of widespread damage or structural failure.

- Seismic Project Identification Reports (SPIR's) have not yet been completed for this school. A cost estimate based on square meters and experience based rates has been provided by the Association of Professional Engineers and Geoscientists (APEGBC) as a proxy for SPIR seismic construction costs as provided below:

Block	Block Name	Risk	M2	Stories	Soils	\$/M2 with markups	Est. Construction \$
1	1949 Gymnasium	High 2	1,018	1	D	\$ 968	\$ 984,915
2	1949 2-Storey Classrooms	High 2	4,606	2	D	\$ 1,168	\$ 5,377,505
3	1949 1-Storey Classrooms	High 2	1,597	1	D	\$ 1,168	\$ 1,864,498
4	1965 Shop Building	High 1	1,550	1	D	\$ 2,220	\$ 3,441,000
5	1965 2-Storey Commercial Building	High 1	1,412	1	D	\$ 2,375	\$ 3,353,500
TOTALS			10,183				\$ 15,021,418

4) NEED FOR THE SCHOOL

- Based on Ministry of Education data, enrollment for SD79 elementary schools will be relatively stable over the next few years followed by steady growth starting around 2022. Secondary schools are experiencing small decline over the next few years but then showing small growth and stabilizing as demonstrated on the following table:

Projection Report for Public School Aged Headcount Enrolments (excludes adults)																	 BRITISH COLUMBIA				
2014/15																					
District and Provincial Report																					
79 Cowichan Valley																					
Year	Kinder-garten	Grade							Elem. Ungr.	Elem. Subtotal	Grade					Sec. Ungr.	Sec. Subtotal	All Grades Subtotal	Home School	Grand Total	Yearly % Change
		1	2	3	4	5	6	7		8	9	10	11	12							
2009	505	515	548	570	613	575	674	628	0	4,628	649	697	782	881	706	11	3,726	8,354	2	8,356	
2010	494	513	533	552	584	612	587	685	0	4,560	617	667	784	833	685	15	3,601	8,161	7	8,168	-2.25%
2011	542	492	518	547	564	576	617	571	0	4,427	684	613	728	770	688	18	3,501	7,928	12	7,940	-2.79%
2012	554	550	485	506	548	555	564	611	1	4,374	565	676	677	726	659	7	3,310	7,684	4	7,688	-3.17%
2013	520	550	549	488	506	530	539	545	1	4,228	617	555	692	680	661	9	3,214	7,442	3	7,445	-3.16%
2014	508	518	559	552	505	526	525	546	0	4,239	549	580	605	663	655	14	3,066	7,305	3	7,308	-1.84%
2015	503	490	554	536	551	553	520	540	0	4,247	518	553	588	652	630	14	2,955	7,202	3	7,205	-1.41%
2016	494	486	525	531	534	602	545	535	0	4,252	514	523	562	635	619	13	2,866	7,118	3	7,121	-1.17%
2017	505	481	523	506	532	587	597	563	0	4,294	510	518	530	604	601	13	2,776	7,070	3	7,073	-0.67%
2018	527	492	518	505	508	586	582	614	0	4,332	535	514	524	570	574	12	2,729	7,061	3	7,064	-0.13%
2019	509	513	531	500	507	558	580	599	0	4,297	584	540	522	565	544	12	2,767	7,064	3	7,067	0.04%
2020	514	497	555	513	503	558	554	597	0	4,291	570	588	547	562	535	12	2,814	7,105	3	7,108	0.58%
2021	529	502	539	535	515	553	553	571	0	4,297	567	574	593	587	531	12	2,864	7,161	3	7,164	0.79%
2022	542	518	546	522	539	568	550	571	0	4,356	543	572	580	634	551	12	2,892	7,248	3	7,251	1.21%
2023	551	531	562	529	526	595	564	567	0	4,425	544	549	579	623	593	12	2,900	7,325	3	7,328	1.06%
2024	561	539	575	544	534	581	590	583	0	4,507	540	549	557	622	589	13	2,870	7,377	3	7,380	0.71%

- While enrolments for SD79's north and west areas continue to see significant decline, the central and south areas are showing strong capacity utilization.
- Cowichan Secondary, serving the central area, has a combined capacity between the main campus and the Quamichan campus of 1,550 students. The following table shows enrolment of 1,373 students this current school year with consistent enrolment projections over the foreseeable future.

SCHOOL DISTRICT NO. 79 (COWICHAN VALLEY)															
COWICHAN SECONDARY 8-12 ENROLMENT PROJECTION															
	Central Area Kindergarten & Elementary								Cowichan Secondary						
	K	1	2	3	4	5	6	7	8	9	10	11	12	Head Count	
2015/2016	270	263	274	306	300	244	271	247	265	276	278	286	268	1,373	
2016/2017	275	270	263	274	306	300	244	271	247	265	276	278	286	1,352	
2017/2018	281	275	270	263	274	306	300	244	271	247	265	276	278	1,337	
2018/2019	287	281	275	270	263	274	306	300	244	271	247	265	276	1,303	
2019/2020	292	287	281	275	270	263	274	306	300	244	271	247	265	1,327	
2020/2021	298	292	287	281	275	270	263	274	306	300	244	271	247	1,368	
2021/2022	304	298	292	287	281	275	270	263	274	306	300	244	271	1,395	
2022/2023	310	304	298	292	287	281	275	270	263	274	306	300	244	1,387	
2023/2024	316	310	304	298	292	287	281	275	270	263	274	306	300	1,413	
2024/2025	323	316	310	304	298	292	287	281	275	270	263	274	306	1,388	
2025/2026	329	323	316	310	304	298	292	287	281	275	270	263	274	1,416	
2015/2016 Numbers = Current Enrolments								Grades 8 & 9 accommodated at the Quamichan Campus. Grades 10 to 12 accommodated at the Main Campus.							

- The above shows strong evidence Cowichan Secondary is needed for the foreseeable future.

5) FACILITY CONDITION

- Facility Condition data for SD79 is provided below:

SD79 Facility Data Overview									As at 21 May, 2015
Facility	Bldg FCI	Site FCI	Avg FCI	Requirement Cost	Bldg area incl port.	Site area (ha)	Open Date	Status	
Alex Aitken	0.20	0.55	0.23	\$1,309,517	2,429	2.2	1967	Open	
Alexander	0.64	0.59	0.63	\$4,226,164	3,236	3.5	1957	Open	
Bench	0.54	0.38	0.53	\$3,389,090	3,580	2.1	1949	Open	
Chemainus El	0.17	0.00	0.14	\$944,827	3,249	4.0	2001	Open	
Chemainus Sec	0.42	0.11	0.41	\$6,453,551	7,506	3.0	1951	Open	
Cobble Hill El	0.20	0.00	0.16	\$1,100,964	2,982	4.0	2001	Open	
Cowichan Sec	0.67	0.37	0.66	\$14,869,831	11,731	5.0	1950	Open	
Crofton - new	0.03	0.00	0.03	\$184,797	1,952	1.6	2009	Open	
CVOLC	0.54	0.74	0.56	\$1,022,746	982	0.6	1937	Open	
Discovery	0.45	0.61	0.46	\$2,828,234	3,314	4.0	1979	Open	
Drinkwater	0.51	0.47	0.51	\$3,073,003	3,578	2.3	1967	Open	
Frances Kelsey	0.32	0.53	0.34	\$8,781,513	12,623	8.9	1995	Open	
GE Bonner	0.16	0.02	0.15	\$2,746,923	8,320	4.0	1957	Open	
Khowhemun	0.59	0.52	0.59	\$3,614,233	3,191	2.0	1966	Open	
Lake Cowichan Sec	0.48	0.50	0.49	\$7,301,966	8,141	3.4	1944	Open	
Maple Bay	0.20	0.00	0.17	\$970,917	2,982	0.9	2001	Open	
Mt Prevost	0.48	0.57	0.48	\$6,277,642	7,102	4.0	1960	Open	
Palsson	0.65	0.20	0.55	\$1,947,906	1,912	7.0	1976	Open	
Quamichan	0.34	0.25	0.34	\$4,232,597	6,667	3.5	1961	Open	
SD Admin complex	0.44	0.40	0.44	\$3,150,421	4,160	5.1	1961	Open	
Tansor	0.47	0.30	0.46	\$2,286,699	2,674	3.2	1957	Open	
Thetis	0.37	0.10	0.28	\$162,671	184	0.8	1950	Open	
Total				\$80,876,212	102,495	75.1			
FCI Averages	0.40	0.33	0.39						

- Data from the preceding table are based on CAMS data from the initial survey by VFA five years ago as more recent inspections and FCI results have not yet been finalized or accepted by SD79. The list also excludes schools that are closed.
- A district wide FCI of 0.39, compared to the provincial average of 0.43, is an indicator that SD79 does a good job of maintaining its' schools.
- The FCI for Cowichan Secondary is noted at 0.66. This is indicative of a school that needs some work.
- Currently SD79 is upgrading the building exterior of the wood-frame classroom blocks. This work includes new windows and cladding, along with plywood sheathing underneath to help provide structural strength.
- The seismic project, combined with an ongoing project noted above will include some reroofing, floor replacements and will mitigate OFC's. All of this work will have a positive impact and will reduce the FCI.

6) SEISMIC UPGRADE SUMMARY

- Cowichan Secondary's blocks are made up of two basic construction types, and are assumed to be on Class D soils. Blocks 1, 2 and 3 are Older/Heavier Wood Frame construction on traditional strip footings, and blocks 4 and 5 are Load Bearing Masonry on piled foundations
- Typical construction expected for wood frame blocks would involve new plywood shear walls, and upgrades to the floor and roof diaphragms.
- Typical construction for the masonry blocks would involve strengthening of the roof and floor diaphragms, upgrading masonry shear walls and improvements to the piled foundations.
- Given the school is full and almost all of the school requires structural improvements, the project will have to be phased. This will extend the construction period to likely more than two years.
- Construction details will be defined during the SPIR and the PDR process after this project has been approved to proceed.
- Project costs, detailed under section 11, total \$23.92 million with an added risk reserve of \$3.03 million for a maximum potential total of \$26.95 million.

7) ADDITIONAL SCOPE & DELIVERY CONSIDERATIONS

- The project must also include other issues, such as:
 - Non-Structural (or Operational Functional Components – OFCs) upgrades to the entire school.
 - Hazardous Materials.
 - Necessary code upgrades and municipal requirements.
 - Instrumentation.
 - Temporary accommodations - students cannot occupy the areas under construction.

OFC's

- OFC's are to be corrected for the entire school, and not just the three high-risk blocks. This document will use an amount of 10,000 m² for the school at a rate of \$30/m², giving an estimate cost of \$300,000. While this number is higher than what is typically seen for schools under the seismic program, it will be necessary to remove an obsolete brick chimney that is approximately 20 meters tall (see below).



- Assuming this project is approved to proceed to the Project Definition phase, the project team will confirm square meters and will use the methodology prescribed in APEGBC's SPIR Guidelines (Version 2.0) and engage a qualified structural engineer to create a list of OFC upgrades.

Temporary Accommodations

- As the construction will impact classrooms, and as enrolment is close to full capacity, there will be a requirement for both portable classrooms, and to phase the construction.
- At this stage of project development it is assumed there will be a requirement for at least 10 used portables to be moved to the site, and a phasing premium of 5% of the construction costs will be added to the budget.

Hazardous Materials

- Hazardous materials such as asbestos containing materials (ACM's) are known to exist in the facility.
- A report will be required to document the amounts of asbestos and lead paint at the Project Definition phase.

Necessary Code Upgrades/Municipal Requirements

- The school already has a sprinkler system.
- As the building is not considered barrier free it is reasonable to expect improvements will be required. Typical improvements for a two-storey structure will include an elevator.
- Meetings will be held with City officials at the Project Definition phase to confirm requirements.

Instrumentation

- An updated draft instrumentation guideline provided in July 2015 estimates the cost for early warning instrumentation at \$25,000 for a node site, and \$13,500 for a standard alarm site.
- As it is likely this school will be a node alarm installation, it is recommended \$25,000 be included in the project budget, and another \$15,000 be included in the risk reserve.

8) RISK

RISK	LIKELIHOOD	IMPACT	MITIGATION	POTENTIAL COST
Unknown/ Unforeseen Site Conditions	High	Medium	Future site investigations to be undertaken. Provide contingency based on 5% of total project costs.	\$1,195,996
Temporary Accommodations	Medium	Low	While it is expected there will be some used portables available from within SD79, and from other local school districts, a more comprehensive review of the situation will occur at the PDR stage. Provide 5% contingency.	\$109,480
Hazmat – Lead Paint	Medium	Low	Testing and investigation to be undertaken. Provide contingency.	\$100,000
Code Upgrades/ City Requirements	Medium	Low	Discussions to be held with City staff. Major cost issues already included in project total.	\$0
Post Completion Audit	High	Low	Ministry requirement.	\$20,000
Instrumentation	High	Low	Assume node/alarm installation for \$25,000 and provide contingency to upgrade to 'node' installation	\$15,000
Escalation from Nov/15 to May/17	High	Medium	Provide contingency - 7% of construction costs.	\$1,592,400
TOTAL				\$3,032,876

9) SCHEDULE

- Schedule for this project will be very much impacted by the timing of approval from government. Therefore, the following schedule is provided in high-level terms:
 - Fall 2015 ... PIR Submission to the Ministry for review and approval to proceed.
 - Winter 2015/2016 ... Project announced by government.
 - Spring/Summer 2016 ... Team develops Project Definition Report
 - Fall 2016 ... Ministry approval to proceed to design and construction.
 - Winter/Spring 2017... Design and tender.
 - Spring/Summer 2017 ... Construction commences.
 - Fall 2019 ... Substantial completion.

10) SD79 EXPERIENCE WITH CAPITAL PROJECTS

- Projects completed over the past decade include:
 - Full Day Kindergarten (FDK) - six modular classrooms at three elementary schools.
 - Crofton Elementary; replacement project
 - Lake Cowichan Secondary; combined building envelope rehabilitation and seismic upgrade.
 - Drinkwater Elementary; combined building envelope rehabilitation and seismic upgrade.
- All projects delivered on budget.
- SD79 has the personnel, along with contracted support, available with the appropriate experience and skills needed to deliver this project.

11) PRELIMINARY PROJECT BUDGET

School Name:		Cowichan Secondary School		14-Oct-15
Project Description:		Seismic Mitigation		
Nominal Capacity		Grades 8 - 12	Grade Configuration	
Existing		1550		
Area of Renovations (square metres)		10183		
Unit Rate for Construction (\$/sqm)				
	Renovation (back-calculated number)	1,475.15		
PROJECT BUDGET				Subject to Economic Adjustment
1	Site Acquisition			
2	Site Development			
3	Construction:			
4	New			
4	Renovation	\$ 15,021,418		\$ 15,021,418
5	Design Fees and Disbursements (16%)	\$ 2,403,427		\$ 2,403,427
6	Construction Contingency (10%)	\$ 1,502,142		\$ 1,502,142
7	Equipment			
8	Municipal Permits & Fees (\$55.00 + 1% Cowichan Valley)	\$ 150,289		
9	GST/PST - 4.4%	\$ 660,942		
Documented Supplementary Items (including fees and related costs)				
Supplementary Building Items				
10	- Phasing	\$ 751,071		\$ 751,071
11	- Non-Structural Seismic Remediation	\$ 305,490		\$ 305,490
12	- Hazardous Abatement		incl	incl
13	- Portable Classrooms	\$ 2,189,594		\$ 2,189,594
14	- Code Upgrades/City Requirements	\$ 250,000		\$ 250,000
15	- Fire Protection	\$ 50,000		
16	- Node Alarm Installation	\$ 25,000		\$ 25,000
17	List of Other Budget Items:			
	i. Insurance	1%	\$ 150,214	\$ 150,214
	ii. Project Management Costs	1%	\$ 150,214	\$ 150,214
	iii. Preparation of PIR/SPIR/PDR Report		\$ 75,000	
	iv. Moving Costs		\$ 75,000	
	v. Construction Signage		\$ 3,000	
18	GST/PST - 4.4%		\$ 157,131	
(A)	Total Project Budget (excluding Reserve Items)		\$ 23,919,912	
(B)	Total Project Budget Eligible for Economic Adjustment			\$ 22,748,570
RESERVE ITEMS (as per Schedule C - Reserve Items)				
List of Identified Risks				
	1. Unknown/Unforeseen Site Conditions 5%		\$ 1,195,996	
	2. Project Classroom Relocation		\$ 109,480	
	3. Hazardous Abatement		\$ 100,000	
	4. Post Completion Audit		\$ 20,000	
	5. Node Alarm Installation		\$ 15,000	
(C)	Maximum "Not to Exceed" Contingency	Sub-Total	\$ 1,440,475	
(D)	Estimated Economic Adjustment (as of 4th Qtr, 2015 to 2nd Qtr 2017)			\$ 1,592,400
(E)	Total Reserve Items		\$ 3,032,875	[=C+D]
(F)	MAXIMUM POTENTIAL PROJECT COST (including Reserve Items)		\$ 26,952,788	[=A+E]
(G)	Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]		\$ 23,919,912	
(H)	Ministry of Education Restricted Capital [as per paragraph 3.04]			
	Sub-Total		\$ 23,919,912	[=A]
(M)	Capital Plan - Identified Risks [as per subparagraph 3.01(b)]		\$ 1,440,475	[=C]
(N)	Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]		\$ 1,592,400	[=D]
	Sub-Total		\$ 3,032,875	[=E]
(O)	MAXIMUM POTENTIAL PROJECT FUNDING		\$ 26,952,788	[=F]

12) CONCLUSION

- In developing this document, SD79 and the project team have endeavored to address all seismic high-risk deficiencies at this school, both structural and non-structural. While the structural work impacts most of the school, there are cost effective solutions available to address the upgrade work. Phasing and temporary accommodations will be required as the school is essentially full. However, it is expected there will be used portable classrooms available from other seismic projects completing on Vancouver Island. This will help limit costs.
- While SD79 would ultimately like to replace this older school, it is recognized this could take time. As such, SD79 has already invested in the school by replacing the exterior cladding and windows on the wood-frame blocks. SD79 is further committed to ensuring the safety of students under their care and are supportive of the Ministry of Education's seismic program and the need to seismically improve this school.
- Completion of this project will have a positive impact on the district-wide FCI and ensure the district has safe facilities for students for the years to come.
- There is clear evidence the school is a critical resource needed to meet projected capacities for the foreseeable future, and that the district as a whole is using available facilities effectively.

APPENDIX A (Cowichan Secondary Design Aid Sheet)

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #1

GRADES: 10 to 12

School Name: Cowichan Secondary School - James St. Campus

Facility Code: 65209

Date: 9 Oct 2015

District: 79 (Cowichan Valley)

School Capacity: Nominal - 1000S
Operating - as above

Total Elective Modules: 21
Extended Day: NO

Agreed Nominal / Operating Capacity:

Ministry of Education

Date

This sheet is for use with the procedures in the Ministry of Education - Area Standards

PART 1 - ACADEMIC/VOGATIONAL												
Space Function	1A - EXISTING			1B - MODULES			1C - NEW CORE			1D - NEW ELECTIVE		
	Description	Area	Mods	Core	Deficit	Surplus	Description	Area	Mods	Description	Area	Mods
Business Education	Marketing 29, Store 25A	98.3	0.52									
	Computer Lab 105, 107	177.1	1.48	3.0		0.48						
	Storage 108, 109	35.5	0.40									
	Classroom 110, Storage 110A	87.0	0.73									
Fine Arts	Art 19, Ceramics 18A, Office 18C, Storage 18D	212.2	1.52									
	Art 24, Ceramics 24A, Storage 24B	163.6	1.17	3.0		0.54						
	Music 801, Mezz 801A, Practice 802, 805, Libr 804	154.4	0.85									
Home Economics	Foods 12, Office 12A, Storage 12B, 12C	342.9	1.15									
	Tonikes 14, Storage 14A	130.8	1.09	2.0		0.28						
		0.0	0.00									
Industrial Education	Drafting 105	88.3	0.74									
	Metall 121, Welding 121A, Forge 121B, Off 122, Stor 123	214.9	1.07									
	Mechanics 126, Stor 127, Office 128	227.0	0.99	5.0		0.43						
	Technology 130, Stor 131, 132	198.7	1.42									
	Wood 135, Planer 135A, Stor 135B, Off 136, Finish 137	270.6	0.99									
	Wood 139, Stor 139A/142, Finish 140, Office 141	251.8	0.50									
Science	Plastics 143, Office 143A, Stor 143B	84.8	0.31									
	Chemistry 201, Stor 201A/201B, Shower 201C	116.2	0.83									
	Biology 202	104.3	0.70	5.0		0.77						
	Chemistry 203, Stor 203A, Prep 204, Office 204A	140.9	1.01									
	Physics 205, Storage 205A/205B/205C, AX06	213.9	1.53									
Other *	Computer Lab 219/212	135.5	1.13									
	Computer Lab 229, Stor 231	119.1	0.99	2.00		0.13						
General Instruction	(5) rooms 75-85 m ²	418.3	5.23	E: 0			Area = No. of modules x 80 m ²			Area = No. of modules x 80 m ²		
	(17) Other rooms	1228.4	15.30	S: 18	-2.58							
Subtotals		5208.7										
		Ai				0.05						

* Note - May not be used except for spaces agreed in writing by the Ministry.

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #2

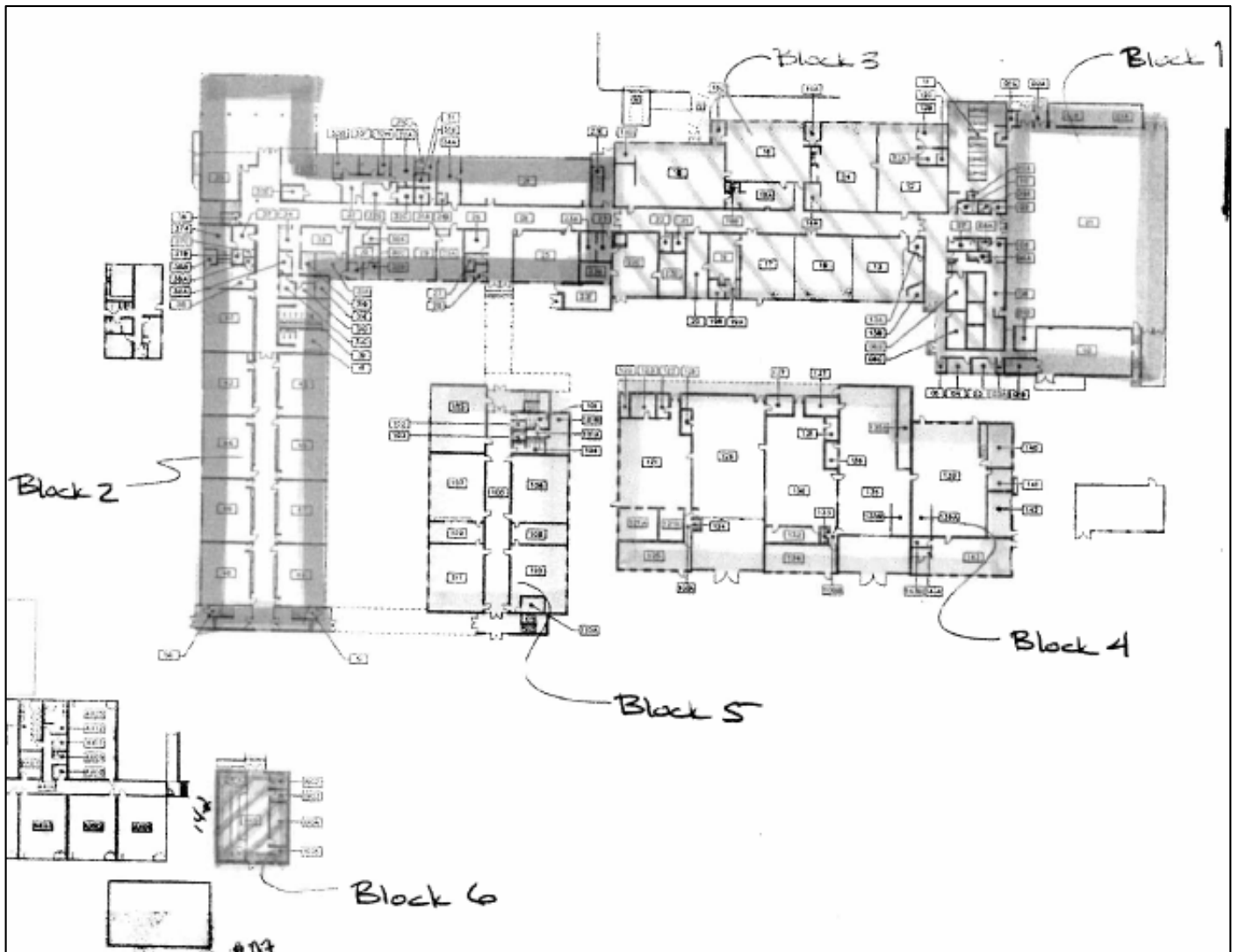
(See Sheet #1 for base information)

PART 2 - SERVICE/ACTIVITY					PART 3 - TOTAL AREAS					
Space Function	E - Existing	F - Allowable	G - Deficit	H - New	N - Existing		P - New			
Administration / Health	300.8	280	(20.75)							
Counselling	182.1	85	(97.09)		Existing Acad./Voc.	Ai	5268.7			
Gen. Storage	85.3	120	34.67		Core A/V Additions			0.0		
Gym Activity	735.2	1200	464.78		Elective A/V Additions			0.0		
Gym Ancillary	451.9	270	(181.93)		Service Activity	Ei	6195.3	0.0		
Media / Tech. Centra	405.4	400	(5.42)		Sub-total		11464.0	0.0		
Multi-purpose	315.8	320	4.23							
Special Education	338.1	340	1.89		Total Gross Allowable Area	(10240)		11464.0		
Mechanical	197.5	235	37.49							
Design Space	3183.2	2190	(993.18)							
* Other					ENROLMENT: 833	as of: Sept. 30, 2015	Grade Structure: 10 to 12			
					Kgn:	Gr. 1-7:	Gr. 8-12:	Type-1:	Type-2:	Port. CR's
							833			
Sub-Total	Ei	6195.3	Fi	5440	Fi					

Comments:

Classroom 218 designate as Media/Tech. (57.03 sq. m.)
Classrooms 15, 47, 48, 49 designated as Special Education (319.5 sq. m.)
Design Space adjusted to allow for General Instruction over 95 sm (22.83, sq. m.)

APPENDIX B (School Plan)



Cowichan Secondary School Project Identification Report

Appendix B – 1000 Capacity Replacement School, with a 1500 Capacity Core, Design Aid
September 14, 2016



**Appendix B – 1000 Capacity Replacement School, with a 1500 Capacity Core,
Design Aid Sheet**

Design Aid Sheet for Middle / Secondary Schools

Capital Plan Year: 2016/2017

Project No:

Project Title: REPLACE - Cowichan Secondary

Option: Cowichan Replacement Secondary. 1000 Capacity (1500 Capacity Core).

SD Ref No:
SD No. 79
Facility No: 65009
Facility Name: Cowichan
Secondary

Nominal Capacity
Actual Existing:
Prop. Higher Priority Addn:
Total Existing:
Proposed Addition
Proposed Total Capacity

	Grades K	Grades 1-7	Grades 8-12	Grade Config.
Actual Existing:	0	0	0	8-12
Prop. Higher Priority Addn:	0	0	0	
Total Existing:	0	0	0	
Proposed Addition	0	0	1500	
Proposed Total Capacity	0	0	1500	8-12

Allowance:	Existing	Proposed	Differences
Elective Modules	0.00	0.00	0.00
Total Modules	0.00	39.00	39.00
Instr. Space	0.00	0.00	0.00

Part One - Academic / Vocational

Space Function	A - EXISTING						B - MODULES		C - NEW CORE					D - NEW ELECTIVE				
	Description	Room	No. of Rooms	Std. Area	Actual Area	Mods.	Core	Surplus/(Deficit)	Description	No. of Rooms	Std. Area	Actual Area	Mods.	Description	No. of Rooms	Std. Area	Actual Area	Mods.
Business Education							1.0	-1.00	Computers	1	120	120.00	1.00	Computers	4	120	480.00	4.00
Fine Arts							1.0	-1.00	Drama and Theatre	1	250	250.00	1.00	Art	2	140	280.00	2.00
													Music	1	180	180.00	1.00	
Home Economics							1.0	-1.00	Foods Room	1	120	120.00	1.00	Clothing Room	1	120	120.00	1.00
Industrial Education							1.0	-1.00	Woodworking	1	275	275.00	1.00	Technology	2	140	280.00	2.00
														Mechanics	1	230	230.00	1.00
														Woodworking	1	275	275.00	1.00
Science							4.0	-4.00	Science	3	140	420.00	3.00	Science	3	140	420.00	3.00
Other	Staff Room				0.00	0.00												
	Library				0.00	0.00												
	Cafeteria				0.00													
General Instruction	Rooms 75-95 m2			80	0.00	0.00	0.0	-15.00	General Instruction	11	80	880.00	11.00	General Instruction	6	80	480.00	6.00
					0.00							0.00					0.00	
Sub-total					0.0	0.00		-23.00				2065.00	18.00				2745.00	21.00
Existing Surplus / Deficit) Instructional Space		0.00	Modules:	0.00	Allowable New Insructional Space:				0.00	Modules:	0.00	New Space Variance From Allowance:				0.00	Modules:	0.00

Part Two - Service / Activity				
Space Function	E - Existing	F - Allowable	G - Deficit	H- New
Administration / Health	0.00	280.00	280.00	280.00
Counselling	0.00	85.00	85.00	85.00
General Storage	0.00	140.00	140.00	140.00
Gym Activity	0.00	1350.00	1350.00	1350.00
Gym Ancillary	0.00	280.00	280.00	280.00
Media / Tech Centre	0.00	460.00	460.00	460.00
Multi-purpose	0.00	320.00	320.00	320.00
Special Education	0.00	530.00	530.00	530.00
Mechanical (3%)	0.00	315.00	315.00	315.00
Design Space (28%)	0.00	2925.00	2925.00	2925.00
Industrial Ed. Mezzanine / Storage	0.00	0.00	0.00	0.00
Strong Start Centre	0.00	0.00	0.00	0.00
Other (Note T)	0.00	1724.25	1724.25	1724.25
Sub-Total	0.00	8409.25	8409.25	8409.25

Part Three - Total Areas

	N - Existing	P - New
Existing Acad./Voc.	0.00	
Core A/V Additions		2065.00
Elective A/V Additions		2745.00
Service Activity	0.00	8409.25
Sub-total	0.00	13219.25
Tital Gross Allowable Area		13219.25
Proposed Instructional Area		4810.00
Maximum Allowable Instructional Area (1000 Capacity)		4800.00
Difference		-10.00
Proposed Maxmum Gross Area		11495.00
Maximum Allowable Gross Area (1000 Capacity, 1500 Capacity Core)		11485.00
Difference		-10.00

Part Four - Comments	
Service Activity:	Capacity
	1500
Administration / Health =	280
Counselling =	85
General Storage =	140
Gym Activity =	1350
Gym Ancillary =	280
Media / Tech Centre =	460
Multi-purpose =	320
Special Education =	530
Mechanical (3%) =	315
Design Space (28%) =	2925
Other (Note T) =	0
Substandard =	0
Sub-Total	6685
Other (Note T)	
2 Storey Design Space	0
Allowance (3%)	0
Service Activity (without NLC)	6685
Core A/V Addition	2065
Elective A/V Additions	2745
Total (without NLC)	11495
Neighbourhood Learning Centre (15%) =	1724
Total (with NLC)	13219



Appendix C – 1500 Capacity Replacement School Design Aid Sheet

Design Aid Sheet for Middle / Secondary Schools

Capital Plan Year: 2016/2017

Project No:

Project Title: REPLACE - Cowichan Secondary

Option: Cowichan Replacement Secondary. 1500 Capacity.

SD Ref No:
SD No. 79
Facility No: 65009
Facility Name: Cowichan
Secondary

Nominal Capacity
Actual Existing:
Prop. Higher Priority Addn:
Total Existing:
Proposed Addition
Proposed Total Capacity

	Grades K	Grades 1-7	Grades 8-12	Grade Config.
Actual Existing:	0	0	0	8-12
Prop. Higher Priority Addn:	0	0	0	
Total Existing:	0	0	0	
Proposed Addition	0	0	1500	
Proposed Total Capacity	0	0	1500	8-12

Allowance:

Elective Modules
Total Modules
Instr. Space

	Existing	Proposed	Differences
Elective Modules	0.00	0.00	0.00
Total Modules	0.00	59.00	59.00
Instr. Space	0.00	0.00	0.00

Part One - Academic / Vocational

Space Function	A - EXISTING						B - MODULES		C - NEW CORE					D - NEW ELECTIVE					
	Description	Room	No. of Rooms	Std. Area	Actual Area	Mods.	Core	Surplus/(Deficit)	Description	No. of Rooms	Std. Area	Actual Area	Mods.	Description	No. of Rooms	Std. Area	Actual Area	Mods.	
Business Education							1.0	-1.00	Computers	1	120	120.00	1.00	Computers	6	120	720.00	6.00	
Fine Arts							1.0	-1.00	Drama and Theatre	1	250	250.00	1.00	Art	2	140	280.00	2.00	
														Music	1	180	180.00	1.00	
														Graphics	1	140	140.00	1.00	
Home Economics							1.0	-1.00	Foods Room	1	120	120.00	1.00	Foods Room	1	120	120.00	1.00	
														Clothing Room	1	120	120.00	1.00	
Industrial Education							1.0	-1.00	Woodworking	1	275	275.00	1.00	Metalwork	1	200	200.00	1.00	
														Technology	3	140	420.00	3.00	
														Mechanics	1	230	230.00	1.00	
														Woodworking	1	275	275.00	1.00	
Science							4.0	-4.00	Science	5	140	700.00	5.00	Science	5	140	700.00	5.00	
Other	Staff Room				0.00	0.00													
	Library				0.00	0.00													
	Cafeteria				0.00	0.00													
General Instruction	Rooms 75-95 m2			80	0.00	0.00	0.0	-15.00	General Instruction	18	80	1440.00	18.00	General Instruction	9	80	720.00	9.00	
					0.00		15.0					0.00					0.00		
Sub-total					0.0	0.00		-23.00				2905.00	27.00				4105.00	32.00	
Existing Surplus / Deficit) Instructional Space		0.00	Modules:	0.00	Allowable New Insructional Space:		0.00	Modules:	0.00	New Space Variance From Allowance:		0.00	Modules:	0.00			0.00	Modules:	0.00

Part Two - Service / Activity				
Space Function	E - Existing	F - Allowable	G - Deficit	H- New
Administration / Health	0.00	280.00	280.00	280.00
Counselling	0.00	85.00	85.00	85.00
General Storage	0.00	140.00	140.00	140.00
Gym Activity	0.00	1350.00	1350.00	1350.00
Gym Ancillary	0.00	280.00	280.00	280.00
Media / Tech Centre	0.00	460.00	460.00	460.00
Multi-purpose	0.00	320.00	320.00	320.00
Special Education	0.00	530.00	530.00	530.00
Mechanical (3%)	0.00	315.00	315.00	315.00
Design Space (28%)	0.00	2925.00	2925.00	2925.00
Industrial Ed. Mezzanine / Storage	0.00	0.00	0.00	0.00
Strong Start Centre	0.00	0.00	0.00	0.00
Other (Note T)	0.00	2054.25	2054.25	2054.25
Sub-Total	0.00	8739.25	8739.25	8739.25

Part Three - Total Areas

	N - Existing	P - New
Existing Acad./Voc.	0.00	
Core A/V Additions		2905.00
Elective A/V Additions		4105.00
Service Activity	0.00	8739.25
Sub-total	0.00	15749.25
Tital Gross Allowable Area		15749.25
Proposed Instructional Area		7010.00
Maximum Allowable Instructional Area (1500 Capacity)		7000.00
Difference		-10.00
Proposed Maxmum Gross Area		13695.00
Maximum Allowable Gross Area (1500 Capacity)		13685.00
Difference		-10.00

Part Four - Comments	
Service Activity:	Capacity
	1500
Administration / Health =	280
Counselling =	85
General Storage =	140
Gym Activity =	1350
Gym Ancillary =	280
Media / Tech Centre =	460
Multi-purpose =	320
Special Education =	530
Mechanical (3%) =	315
Design Space (28%) =	2925
Other (Note T) =	0
Substandard =	0
Sub-Total	6685
Other (Note T)	
2 Storey Design Space	0
Allowance (3%)	0
Service Activity (without NLC)	6685
Core A/V Addition	2905
Elective A/V Additions	4105
Total (without NLC)	13695
Neighbourhood Learning Centre (15%) =	2054
Total (with NLC)	15749

Cowichan Secondary School Project Identification Report

Appendix D – Spiegel Skillen and Associates – Total Project Cost Estimates and Life-Cycle Costing – September 2, 2016

September 14, 2016



Appendix D – Spiegel Skillen and Associates – Total Project Cost Estimates and Life-Cycle Costing – September 2 2016

PROJECT IDENTIFICATION COST REPORT

Cowichan Secondary School

Duncan, BC

June 28, 2016



SSA QUANTITY SURVEYORS LTD

COST PLANNING | VALUE MANAGEMENT | PROJECT CONTROLS

203 – 3320 Richter Street, Kelowna, BC V1W 4V5 **TEL** 250 763 6677 **FAX** 250 762 6684 **WEB** ssaqs.com

Project Identification Cost Report - Cowichan Secondary School, Duncan, BC
June 28, 2016

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1. CAPITAL COSTS

Capital Costs have been developed based upon the information provided to us by the members of the PIR Team. The Capital Cost Summaries for the Options are articulated on the attached Sheets and have been developed using the Ministries 2015/16 Capital Plan Allowances, Rates and Costing Factors Supplement.

The Capital Cost Schedules for the Options are articulated on the following Sheets, together with the supporting detail.

2. LIFE CYCLE COST ANALYSIS

We have carried out a preliminary Life Cycle Cost (LCC) Analysis for the Option over a 40 year time frame.

Energy consumption values take into account assumed energy savings for new areas. Please refer to the Input Parameters Sheet included in this Report.

Please refer to the attached Pages for the Detailed LCC Analysis that we have carried out showing all of the input parameters and results.

3. COMPARISON SUMMARY

School Name: <u>School District #79 - Cowichan Secondary School</u>				
Project No: <u>65009</u>				
PROJECT BUDGET		OPTION A (Seismic Upgrade)	OPTION B (1000 Capacity Replacement)	OPTION C (1500 Capacity Replacement)
1	Site Acquisition	\$0	\$0	\$0
2	Site Development	\$0	\$2,983,100	\$2,983,100
3	Renovation: Seismic Remediation	\$15,021,418	\$0	\$0
4	New Construction	\$0	\$26,479,342	\$31,506,972
5	New Construction: Neighborhoods Learning Centre	\$0	\$3,971,901	\$4,726,046
6	Design Fees and Disbursements	\$2,888,627	\$3,273,488	\$3,865,384
7	Construction Contingency	\$1,502,142	\$1,003,030	\$1,176,484
8	Equipment	\$0	\$1,394,741	\$1,661,677
9	Municipal Permits, DCC's & Fees	\$156,448	\$425,711	\$481,283
10	Supplementary Site - Including Temporary Accommodation	\$1,655,280	\$1,003,237	\$1,798,081
11	Supplementary Building	\$1,377,222	\$1,434,510	\$1,434,510
12	Off-Site Costs	\$0	\$500,000	\$500,000
13	Phasing	\$750,000	\$0	\$0
14	Feasibility Study and Completion Costs	\$75,000	\$75,000	\$75,000
15	LEED Gold (3%)	\$0	\$1,041,833	\$1,238,247
16	Sub-Total	\$23,426,137	\$43,585,894	\$51,446,782
17	Taxes Payable	\$1,030,750	\$1,917,779	\$2,263,658
18	Total Project Budget (excluding Reserve Items)	\$24,456,888	\$45,503,673	\$53,710,440
19	Total Reserve Items	\$3,184,602	\$7,301,278	\$8,144,130
20	MAXIMUM POTENTIAL PROJECT COST (including Reserve Items)	\$27,641,489	\$52,804,951	\$61,854,570

4. OPTION A

School Name:		School District #79 - Cowichan Secondary School			
Project No:		65009			
Project Description:		Seismic Upgrade - 1550 Capacity			
A R E A - U N I T R A T E	Allowable Site Area (ha)				
	Allowable Building Area (sqm)				
	Total Allowable Area		11,464		
	Less: Previously Existing Space		0		
	Add: Area to be Demolished		0		
	Area of New Space		0		
	Area of Neighbourhood Learning Centre		0		
	Allowable Area of Renovations		10,183		
	Unit Rate for Construction (\$/sqm) [based on 3rd Qtr, 2015 Location Factor and using Ministry Unit Rates]				
	New		\$0.00		
Renovation		\$1,475.15			
E L I G I B L E E X P E N D I T U R E S	PROJECT BUDGET			Amounts Subject to Economic Adjustment	
	1 Site Acquisition		\$0		
	2 Site Development		\$0	\$0.00	
	3.1 New Construction		\$0	\$0.00	
	3.2 New Construction		\$0	\$0.00	
	4 Renovation		\$15,021,418	\$15,021,418.00	
	5 Design Fees and Disbursements (16%)		\$2,888,627	\$2,888,627.20	
	6 Construction Contingency (10%)		\$1,502,142	\$1,502,141.80	
	7 Equipment		\$0		
	8 Municipal Permits, DCC's & Fees		\$156,448		
	Documented Supplementary Items (including fees and related costs)				
	9 Supplementary Site		\$1,655,280	\$1,655,280.00	
	10 Supplementary Building		\$1,377,222	\$1,377,222.00	
	11 Off-Site Costs - Allowance		\$0	\$0.00	
	12 Phasing		\$750,000	\$750,000.00	
13 List of Other Budget Items i. Feasibility Study and Completion Costs		\$75,000			
14 Sub-Total		\$23,426,137			
15 Rebated Taxes 4.40%		\$1,030,750			
(A) Total Project Budget (excluding Reserve Items)		\$24,456,888			
(B) Total Project Budget Eligible for Economic Adjustment			\$23,194,689.00		
RESERVE ITEMS (as per Schedule C - Reserve Items)					
List of Identified Risks	1 Temporary Accommodations	\$110,000			
	2 Geotechnical Requirements	\$1,200,000			
	3 Hazardous Materials / Environmental Requirements	\$100,000			
	4 Post Completion Audit	\$20,000			
	5 Seismic Instrumentation	\$15,000			
(C) Maximum "Not to Exceed" Contingency	Sub-Total	\$1,445,000			
(D) Estimated Economic Adjustment (from Location Factor as of 3rd Qtr, 2015 to Tender Close 1st Qtr 2018 - 3% per year for 2.5 years)			\$1,739,601.68		
(E) Total Reserve Items		\$3,184,602	[=C+D]		
(F) MAXIMUM POTENTIAL PROJECT COST (including Reserve Items)		\$27,641,489	[=A+E]		
(G) Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]		\$24,456,888			
(H) Ministry of Education Restricted Capital [as per paragraph 3.04]					
(I) Borrowing [as per paragraph 3.05]					
(J) Local Capital Reserve [as per subparagraph 4.02(e)]					
(K) Annual Facility Grant [as per subparagraph 4.02(e)]					
(L) Other (specify) [as per subparagraph 4.02(e)]					
	Sub-Total	\$24,456,888	[=A]		
(M) Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]		\$1,445,000	[=C]		
(N) Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]		\$1,739,602	[=D]		
	Sub-Total	\$3,184,602	[=E]		
(O) MAXIMUM POTENTIAL PROJECT FUNDING (includes Lines G, H, I, J, K, L, M and N)		\$27,641,489	[=F]		

School Name:	<u>School District #79 - Cowichan Secondary School</u>
Project No:	<u>65009</u>
Project Description:	<u>Seismic Upgrade - 1550 Capacity</u>

SUPPLEMENTARY SITE

Temporary Accommodation

Temporary Accommodation - (10No Used classrooms portables. Transportation \$5,000.00/portable)	\$50,000
Circulation Space including Foundations - (300m2 @ \$1,200/m2)	\$360,000
Fire Hydrant	\$15,000
Fire Access Road	\$100,000
Timber Cribbing Foundations including Site Preparation - (10No Portables @ \$7,500.00/portable)	\$75,000
Excavation and Engineered Fill (10No Portables @ \$7,500/portable)	\$75,000
Storm drainage connection to portables	\$20,000
Sanitary connections to portable washrooms	\$50,000
Water supply and connections to portables	\$30,000
Hydro supply and connections to portables	\$80,000
Communications and system connections to portables	\$25,000
Renovations to Used Portables (840m2 @ \$250/m2)	\$210,000
Remove existing portables (10No @ \$5,000/portable)	\$50,000
General Contractors Requirements and Fee	\$228,000
Design Contingency (10%)	\$136,800
Construction Contingency (10%)	\$150,480
Total Supplementary Site Requirements	\$1,655,280

SUPPLEMENTARY BUILDING

Non-Structural Seismic Remediation	\$310,000
Hazardous Materials - Asbestos Containing ACM's	\$250,000
Elevator including shaft, foundation, elevator pit, etc	\$350,000
Seismic Instrumentation	\$38,500
General Requirements, Services and Fee	\$189,700
Design Contingency (10%)	\$113,820
Construction Contingency (10%)	\$125,202
Total Supplementary Building Requirements	\$1,377,222

PROJECT SCHEDULE AND PROJECTED CASH FLOW					
PROJECT MILESTONES					
Fiscal Year	2016-17	2017-18	2018-19	2019 - 20	2020 - 21
	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q
Pre Planning/Project Agreement		August 31, 2017			
Design Development		February 28, 2018			
Construction Documents			April 30, 2018		
Contract Award			June 30, 2018		
Substantial Completion					June 30, 2020
Occupancy Date					August 1, 2020
Final Completion					December 31, 2020
Cash Flow Projection					
Fiscal Year	2016-17	2017-18	2018-19	2019 - 20	2020 - 21
First Quarter: April - June	\$0	\$0	\$1,200,000	\$2,700,000	\$2,550,000
Second Quarter: July - September	\$0	\$125,000	\$2,550,000	\$2,650,000	\$650,000
Third Quarter: October - December	\$0	\$500,000	\$2,600,000	\$2,600,000	\$371,890
Fourth Quarter: January - March	\$0	\$750,000	\$2,650,000	\$2,560,000	\$0
Annual Forecast	\$0	\$1,375,000	\$8,999,999	\$10,509,999	\$3,571,890
Cumulative Cash Flow	\$0	\$1,375,000	\$10,374,999	\$20,884,998	\$24,456,888

5. OPTION B

School Name:		School District #79 - Cowichan Secondary School			
Project No:		65009			
Project Description:		Replacement - 1000 Capacity			
A R E A - U N I T R A T E	Allowable Site Area (ha)				
	Allowable Building Area (sqm)				
	Total Allowable Area		13,219		
	Less: Previously Existing Space		0		
	Add: Area to be Demolished		0		
	Area of New Space		11,495		
	Area of Neighbourhood Learning Centre		1,724		
	Allowable Area of Renovations		0		
	Unit Rate for Construction (\$/sqm) [based on 3rd Qtr, 2015 Location Factor and using Ministry Unit Rates]				
	New			\$2,303.55	
Renovation			\$0.00		
E L I G I B L E X P E N D I T U R E S	PROJECT BUDGET			Amounts Subject to Economic Adjustment	
	1 Site Acquisition		\$0		
	2 Site Development (\$2,300,000 x 1.297)		\$2,983,100	\$2,983,100.00	
	3.1 New Construction: Grade 8 - 12 (11,495 x \$2,303.55)		\$26,479,342	\$26,479,342.45	
	3.2 New Construction: Neighborhood Learning Centre (1,7254 x \$2,303.55)		\$3,971,901	\$3,971,901.37	
	4 Renovation		\$0	\$0.00	
	5 Design Fees and Disbursements (9%)		\$3,273,488	\$3,273,488.19	
	6 Construction Contingency (3%)		\$1,003,030	\$1,003,030.31	
	7 Equipment		\$1,394,741		
	8 Municipal Permits, DCC's & Fees		\$425,711		
	Documented Supplementary Items (including fees and related costs)				
	9 Supplementary Site		\$1,003,237	\$1,003,237.15	
	10 Supplementary Building		\$1,434,510	\$1,434,510.00	
	11 Off-Site Costs - Allowance		\$500,000	\$500,000.00	
	12 LEED® Gold (3%)		\$1,041,833	\$1,041,832.87	
	13 List of Other Budget Items i. Feasibility Study and Completion Costs		\$75,000		
	14 Sub-Total		\$43,585,894		
	15 Rebated Taxes 4.40%		\$1,917,779		
(A) Total Project Budget (excluding Reserve Items)		\$45,503,673			
(B) Total Project Budget Eligible for Economic Adjustment			\$41,690,442.34		
RESERVE ITEMS (as per Schedule C - Reserve Items)					
List of Identified Risks	1 LEED® Gold (2%)	\$674,495			
	2 Geotechnical Requirements	\$1,600,000			
	3 Hazardous Materials / Environmental Requirements	\$1,150,000			
	4 Off-Site / Municipal Requirements	\$750,000			
(C) Maximum "Not to Exceed" Contingency	Sub-Total	\$4,174,495			
(D) Estimated Economic Adjustment (from Location Factor as of 3rd Qtr, 2015 to Tender Close 1st Qtr 2018 - 3% per year for 2.5 years)			\$3,126,783.18		
(E) Total Reserve Items		\$7,301,278	[=C+D]		
(F) MAXIMUM POTENTIAL PROJECT COST (including Reserve Items)		\$52,804,951	[=A+E]		
U N D E R S T A N D I N G	(G) Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]		\$45,503,673		
	(H) Ministry of Education Restricted Capital [as per paragraph 3.04]				
	(I) Borrowing [as per paragraph 3.05]				
	(J) Local Capital Reserve [as per subparagraph 4.02(e)]				
	(K) Annual Facility Grant [as per subparagraph 4.02(e)]				
	(L) Other (specify) [as per subparagraph 4.02(e)]				
	Sub-Total		\$45,503,673	[=A]	
	(M) Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]		\$4,174,495	[=C]	
	(N) Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]		\$3,126,783	[=D]	
	Sub-Total		\$7,301,278	[=E]	
(O) MAXIMUM POTENTIAL PROJECT FUNDING (includes Lines G, H, I, J, K, L, M and N)		\$52,804,951	[=F]		

School Name:		School District #79 - Cowichan Secondary School		
Project No:		65009		
Project Description:		Replacement - 1000 Capacity		
SITE DEVELOPMENT				
SUPPLEMENTARY SITE	New Building On New Site (1,000 Capacity)		\$2,300,000	
	Location Factor		1.297	
	Allowable Site Value		\$2,983,100	
	SUPPLEMENTARY SITE			
	Roads and Parking			
	1000 Capacity	90	\$5,836.50	\$681,295
	Premium cost associated with secondary site access requirement			
	Site preparation			\$9,000
	Asphalt paving including base and sub base			\$90,000
	Concrete curb			\$22,500
	Concrete sidewalk			\$92,000
	Drainage			\$30,000
	Line painting			\$5,500
	Signage			\$5,500
General Requirements, Services and Fee			\$38,175	
Design Contingency			\$29,268	
Construction Contingency			\$16,097	
Total Supplementary Site Requirements			\$1,003,237	
SUPPLEMENTARY BUILDING				
Demolish existing school			\$1,080,000	
General Requirements, Services and Fee			\$162,000	
Design Contingency			\$124,200	
Construction Contingency			\$68,310	
Total Supplementary Building Requirements			\$1,434,510	

PROJECT SCHEDULE AND PROJECTED CASH FLOW					
PROJECT MILESTONES					
Fiscal Year	2016-17	2017-18	2018-19	2019 - 20	2020 - 21
	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q
Pre Planning/Project Agreement		August 31, 2017			
Design Development		February 28, 2018			
Construction Documents			April 30, 2018		
Contract Award			June 30, 2018		
Substantial Completion					June 30, 2020
Occupancy Date					August 1, 2020
Final Completion					December 31, 2020
Cash Flow Projection					
Fiscal Year	2016-17	2017-18	2018-19	2019 - 20	2020 - 21
First Quarter: April - June	\$0	\$0	\$1,400,000	\$5,200,000	\$5,020,000
Second Quarter: July - September	\$0	\$150,000	\$5,050,000	\$5,150,000	\$1,394,741
Third Quarter: October - December	\$0	\$600,000	\$5,100,000	\$5,100,000	\$188,936
Fourth Quarter: January - March	\$0	\$950,000	\$5,150,000	\$5,050,000	\$0
Annual Forecast	\$0	\$1,700,000	\$16,699,999	\$20,499,998	\$6,603,677
Cumulative Cash Flow	\$0	\$1,700,000	\$18,399,999	\$38,899,997	\$45,503,673

6. OPTION C

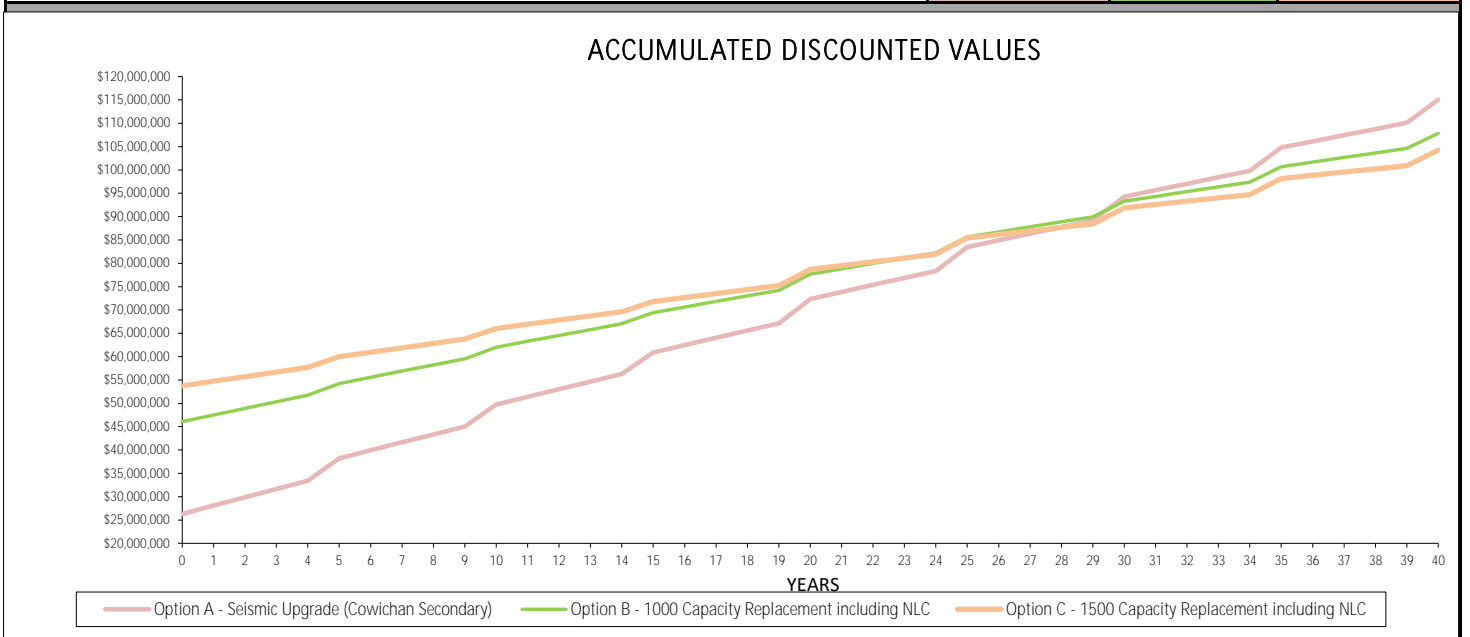
School Name:		School District #79 - Cowichan Secondary School			
Project No:		65009			
Project Description:		Replacement - 1500 Capacity			
A R E A - U N I T R A T E	Allowable Site Area (ha)				
	Allowable Building Area (sqm)				
	Total Allowable Area		15,749		
	Less: Previously Existing Space		0		
	Add: Area to be Demolished		0		
	Area of New Space		13,695		
	Area of Neighbourhood Learning Centre		2,054		
	Allowable Area of Renovations		0		
	Unit Rate for Construction (\$/sqm) [based on 3rd Qtr, 2015 Location Factor and using Ministry Unit Rates]				
	New			\$2,300.62	
Renovation			\$0.00		
E L I G I B L E E X P E N D I T U R E S	PROJECT BUDGET			Amounts Subject to Economic Adjustment	
	1 Site Acquisition		\$0		
	2 Site Development (\$2,300,000 x 1.297)		\$2,983,100	\$2,983,100.00	
	3.1 New Construction: Grade 8 - 12 (13,695 x \$2,300.62)		\$31,506,972	\$31,506,971.73	
	3.2 New Construction: Neighborhood Learning Centre (2,054 x \$2,300.62)		\$4,726,046	\$4,726,045.76	
	4 Renovation		\$0	\$0.00	
	5 Design Fees and Disbursements (9%)		\$3,865,384	\$3,865,383.75	
	6 Construction Contingency (3%)		\$1,176,484	\$1,176,483.52	
	7 Equipment		\$1,661,677		
	8 Municipal Permits, DCC's & Fees		\$481,283		
	Documented Supplementary Items (including fees and related costs)				
	9 Supplementary Site		\$1,798,081	\$1,798,080.90	
	10 Supplementary Building		\$1,434,510	\$1,434,510.00	
	11 Off-Site Costs - Allowance		\$500,000	\$500,000.00	
	12 LEED® Gold (3%)		\$1,238,247	\$1,238,246.54	
13 List of Other Budget Items i. Feasibility Study and Completion Costs		\$75,000			
14 Sub-Total		\$51,446,782			
15 Rebated Taxes 4.40%		\$2,263,658			
(A) Total Project Budget (excluding Reserve Items)		\$53,710,440			
(B) Total Project Budget Eligible for Economic Adjustment			\$49,228,822.21		
RESERVE ITEMS (as per Schedule C - Reserve Items)					
List of Identified Risks	1 LEED® Gold (2%)	\$801,968			
	2 Geotechnical Requirements	\$1,750,000			
	3 Hazardous Materials / Environmental Requirements	\$1,150,000			
	4 Off-Site / Municipal Requirements	\$750,000			
(C) Maximum "Not to Exceed" Contingency	Sub-Total	\$4,451,968			
(D) Estimated Economic Adjustment (from Location Factor as of 3rd Qtr, 2015 to Tender Close 1st Qtr 2018 - 3% per year for 2.5 years)			\$3,692,161.67		
(E) Total Reserve Items		\$8,144,130	[=C+D]		
(F) MAXIMUM POTENTIAL PROJECT COST (including Reserve Items)		\$61,854,570	[=A+E]		
U N D E R G R A N T S O U R C E S	(G) Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]		\$53,710,440		
	(H) Ministry of Education Restricted Capital [as per paragraph 3.04]				
	(I) Borrowing [as per paragraph 3.05]				
	(J) Local Capital Reserve [as per subparagraph 4.02(e)]				
	(K) Annual Facility Grant [as per subparagraph 4.02(e)]				
	(L) Other (specify) [as per subparagraph 4.02(e)]				
	Sub-Total		\$53,710,440	[=A]	
	(M) Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]		\$4,451,968	[=C]	
(N) Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]		\$3,692,162	[=D]		
Sub-Total		\$8,144,130	[=E]		
(O) MAXIMUM POTENTIAL PROJECT FUNDING (includes Lines G, H, I, J, K, L, M and N)		\$61,854,570	[=F]		

School Name:		School District #79 - Cowichan Secondary School		
Project No:		65009		
Project Description:		Replacement - 1500 Capacity		
SITE DEVELOPMENT				
SUPPLEMENTARY SITE	New Building On New Site (1,500 Capacity)		\$2,300,000	
	Location Factor		1.297	
	Allowable Site Value		\$2,983,100	
	SUPPLEMENTARY SITE			
	Roads and Parking			
	1500 Capacity	195	\$5,836.50	\$1,476,138
	Premium cost associated with secondary site access requirement			
	Site preparation			\$9,000
	Asphalt paving including base and sub base			\$90,000
	Concrete curb			\$22,500
	Concrete sidewalk			\$92,000
	Drainage			\$30,000
Line painting			\$5,500	
Signage			\$5,500	
General Requirements, Services and Fee			\$38,175	
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Total Supplementary Site Requirements			\$1,798,081	
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Demolish existing school			\$1,080,000	
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Total Supplementary Building Requirements			\$1,434,510	

PROJECT SCHEDULE AND PROJECTED CASH FLOW					
PROJECT MILESTONES					
Fiscal Year	2016-17	2017-18	2018-19	2019 - 20	2020 - 21
	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q	1st Q - 4th Q
Pre Planning/Project Agreement		August 31, 2017			
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Substantial Completion					June 30, 2020
Occupancy Date					August 1, 2020
Final Completion					December 31, 2020
Cash Flow Projection					
Fiscal Year	2016-17	2017-18	2018-19	2019 - 20	2020 - 21
First Quarter: April - June	\$0	\$0	\$1,500,000	\$6,025,000	\$5,925,000
Second Quarter: July - September	\$0	\$150,000	\$5,975,000	\$6,025,000	\$1,661,677
Third Quarter: October - December	\$0	\$650,000	\$6,075,000	\$5,975,000	\$598,761
Fourth Quarter: January - March	\$0	\$1,000,000	\$6,175,000	\$5,975,000	\$0
Annual Forecast	\$0	\$1,800,000	\$19,725,001	\$24,000,001	\$8,185,438
Cumulative Cash Flow	\$0	\$1,800,000	\$21,525,001	\$45,525,002	\$53,710,440

7. LIFE CYCLE COSTS

LIFE CYCLE COST ANALYSIS	Option A - Seismic Upgrade (Cowichan Secondary)	Option B - 1000 Capacity Replacement including NLC	Option C - 1500 Capacity Replacement including NLC
Study Period	40 Years		
Gross Floor Area (m2) of Cowichan Secondary	11,464	13,219	15,749
Gross Floor Area (m2) of Quamichan	6,667	6,667	NA
Annual Operating, Maintenance, Janitorial etc. (per m2) New Building	NA	\$55.00	\$55.00
Annual Operating, Maintenance, Janitorial etc. (per m2) Existing Building	\$65.00	\$65.00	NA
Annual Electricity Costs (per m2) New Building	NA	\$4.80	\$4.80
Annual Electricity Costs (per m2) Existing Building	\$6.00	\$6.00	NA
Annual Gas Costs (per m2) New Building	NA	\$5.00	\$5.00
Annual Gas Costs (per m2) Existing Building	\$10.00	\$10.00	NA
Annual Escalation Rate - Construction and Cyclical Renewal	4.0%	4.0%	4.0%
Annual Escalation Rate - Gas	1.5%	1.5%	1.5%
Annual Escalation Rate - Electricity	3.0%	3.0%	3.0%
Discount Rate	4.0%	4.0%	4.0%
Initial Capital Cost	\$24,456,888	\$45,503,673	\$53,710,440
Operation and Maintenance Costs (Escalated)	\$92,705,876	\$90,553,845	\$67,271,560
Energy Costs (Escalated)	\$18,725,677	\$15,454,139	\$10,208,398
Cyclical Renewal Costs (Escalated)	\$110,944,395	\$48,139,635	\$51,283,767
Total Escalated Value at Year 40	\$246,832,835	\$199,651,292	\$182,474,165
Total Net Present Value (NPV) at Year 40	\$115,056,631	\$107,841,620	\$104,250,481
Cyclical Renewal as a % of Initial Capital Cost	Cyclical Renewal		
Year 5	12.5%	2.5%	2.5%
Year 10	12.5%	2.5%	2.5%
Year 15	12.5%	2.5%	2.5%
Year 20	15.0%	5.0%	5.0%
Year 25	15.0%	5.0%	5.0%
Year 30	15.0%	5.0%	5.0%
Year 35	15.0%	5.0%	5.0%
Year 40	15.0%	5.0%	5.0%



NOTES
 Option A includes Quamichan which forms part of Cowichan Secondary 1500 capacity
 Option B includes Quamichan which forms part of Cowichan Secondary 1500 capacity
 Life Cycle Costs and VFA Costs for Cowichan Secondary and Quamichan are included in Options A and B
 The energy efficiency of a replacement is greater than an existing building.