DATE:	March 16, 2017
TO:	Board of Trustees
FROM:	Mark Liguori, Superintendent of Schools
SUBJECT:	Possible Closure of Ministik School
ORIGINATOR:	Mark Liguori, Superintendent of Schools
RESOURCE STAFF	Dennis Dykau, Eileen Zimmerman, Candace Cole, Lynn Jones, Dave Antymniuk, Lisa Weder, Doris Paquette, Lisa Johnston, Cal Wait
REFERENCE:	School Act, Closure of Schools Regulation http://www.qp.alberta.ca/documents/Regs/1997_238.pdf Board Policy 15, Program Reduction and School Closure https://www.eips.ca/about-us/board-policies/526
EIPS Priority(ies):	Priority 2: Enhance High Quality Learning and Working Environments
EIPS Goal(s):	Goal 2: Quality Infrastructure for All
EIPS Outcome(s):	Outcome: • Student learning is supported through the use of effective planning, managing, and investment in division infrastructure; • Our learning and working environments are welcoming, caring, respectful and safe

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RECOMMENDATION

A. That the Board approve a motion to close Ministik School, effective the end of the school day, June 30, 2017.

And if recommendation A is approved,

B. That the Board approve a motion that Ministik School students be designated to Fultonvale Elementary/Junior High School.

BACKGROUND

School Boards are faced with limited budget resources on a year-over-year basis. As part of the general budget process, Boards must deliberate not only on the funding allocation for the day-to-day operations but

also on capital projects and infrastructure. Boards are tasked with the responsibility to use resources efficiently and as cost effectively as possible, taking many factors into account.
One such set of factors are the buildings that EIPS Facility Services maintains and operates, and takes into account the proximity of the schools, the age of school buildings, their deferred maintenance and the limited infrastructure maintenance renewal and modernization funding available from the province which challenges our Division. At 50 years, major building components such as mechanical and electrical systems reach the end of their expected life cycle and require replacement. At the end of the 2015–2016 school year, Elk Island Public Schools had a total deferred maintenance of $108,682,862. EIPS maintains 34 school buildings and 134 modulars across 36 sites (including new schools at Davidson Creek and SouthPointe). The total replacement cost of all EIPS facility infrastructure assets, sourced from the VFA database that is owned and managed by Alberta Infrastructure, is $710,103,740, with our buildings ranging in age from 0 to 66 years, with the average age being 32 years.

The Division recognizes the critical need to invest in current buildings but needs to balance the overall infrastructure needs of the Division. With limited dollars available, consolidation of learning space is a consideration as well as looking at recent infrastructure spending.

During the 2016-2017 budget process, the Division carefully examined its expenditures vs. revenues year over year. In the 2016–2017 budget, unallocated operating reserves were utilized to support day-to-day operations and this is not sustainable. Division unallocated reserves are available to provide some flexibility to cover unexpected emergent issues, price fluctuations and funding stabilization. Funding ongoing, reoccurring expenses from reserves is not a sustainable practice as reserves quickly become depleted.

To prevent this situation from occurring, the Division has set a threshold for the unallocated reserves, which is to remain at approximately 2% of EIPS operating budget. This amount is $4 million for the 2016–2017 school year and current in year projections indicate that this minimum reserve level will be approached by August 2017.

On November 24, 2016, a notice of motion was put forward to consider the closure of Ministik School. As well, the Board directed administration to prepare an information report regarding the possible closure of Ministik School for the Board.

This report was received at the December 15, 2016, Board meeting and, at this time, the Board approved a motion to consider the closure of Ministik School.

On February 7 and 15, 2017, public meetings were held at Ministik School. The processes for both meetings allowed for communication and public consultation between the Division and stakeholders. Also, during the period starting November 24, 2016:

1. the Division established a Ministik section on the Division website, which was updated regularly;

2. answered all requests for information sent through a variety of technologies (email, phone, website, etc.); and,
3. EIPS staff met with interested parties.

Considerations and Analysis

I. Feedback from the Public

Feedback from the public was gathered at public meetings which were held on February 7, 2017, and February 15, 2017. These meetings were held at Ministik School at the request of the parent community. There were 185 registered community members at the February 7 meeting and 175 registered community members on February 15, 2017. Two presentations from members of the Ministik parent group were received by the Board at the Board meeting on December 15, 2016. Three delegations from the Ministik parent group presented to the Board of Trustees at the Board meeting on February 16, 2017.

Additional feedback was solicited through a variety of means. The Division website provided a link to an online feedback form. In total, over 180 emails with letters or comments were received and shared with the Board of Trustees. The Division Principal responded to 11 phone calls; the Corporate Secretary responded to approximately 15 phone calls; and the Superintendent responded to five phone calls from members of the Ministik parent group. The Superintendent and Corporate Secretary had a total of five meetings with community members related to the possible closure of Ministik School. The public was provided with opportunities to provide questions in advance of the public meetings; ask questions at the public meeting; in phone calls; or by email. In total, over 200 responses to these questions are provided on the Division website which has been updated with this information on a very regular basis.

II. How closure would affect the attendance area defined for Ministik School

Currently, the Ministik School attendance area borders Range Road 222 and Range Road 202 in between Township Road 510 and Township Road 513.

Ministik students reside in the following areas as of September 30, 2016:

- Two students reside within Edmonton Public Schools boundaries
- Three students reside within Black Gold Regional Division boundaries
- 10 students reside within Battle River School Division boundaries
- Three students reside within the Fultonvale Elementary/Junior High attendance area
- One student resides within the Uncas Elementary attendance area
- 106 students reside within the Ministik School attendance area

If Minisitik School were to close, the elementary attendance boundary would be aligned with the current junior high boundaries for Fultonvale Elementary/Junior High, pending Board approval.

III. How closure would affect attendance at other schools

There would be an increase in the student population at surrounding schools, with the majority of schools outlined below having space to accommodate additional students. Additionally, the schools would be able to enhance current programming due to an increase in potential student allocations the school would receive. The closure of Ministik would affect 125 students registered as of September 30, 2016. If all of the students were to attend other EIPS schools, they would be accommodated based on the following:

SCHOOLS	2016-17 Capacities	2016-17 Utilization Rate	2017-18 Boundary Status
***École Élementaire Ardrossan Elementary**	522	108%	Closed
Fultonvale Elementary Junior High	600	68%	Open
Uncas Elementary	378	49%	Open
Wye Elementary	507	83%	Open
Brentwood Elementary	570	85%	Open
École Campbelltown	569	85%	Closed Gr.4
Glen Allan Elementary	520	89%	Open
Lakeland Ridge	880	86%	Closed Gr. 4 & 5
Mills Haven Elementary	487	103%	Closed
Pine Street Elementary	580	104%	Closed
Strathcona Christian Academy Elementary	629	86%	Open
Wes Hosford Elementary	495	93%	Closed
Westboro Elementary	486	86%	Closed Gr. 2 & 5 Logos, Gr. 4 & 6 regular
Woodbridge Elementary	433	89%	Closed

*Ardrossan Elementary currently has closed boundaries for the 2017–2018 school year due to the construction of the new school, which is to be completed in 2018.

IV. Information from EIPS' long-range capital plan (Board Policy 15, 3.12)

AMENDED 2016/17 to 2018/19 Three-year Capital Plan – by project type. *See Appendix 1.*

New/Replacement Schools:

Priority	School/Location	Area (sq. m.)	Estimated Amount	Notes
1	Wye School, Sherwood Park, Heritage Hills Site (2017)	6,399	$23,625,459	1
4	New K-9 School, Sherwood Park, Cambrian (2019)	7,369	$27,176,435	2
TOTAL		13,768	$50,801,894	

Modernization:

Priority	School/Location	Area (sq. m.)	Estimated Amount	Notes
2	Rudolph Hennig Junior High Modernization (2017)	5,511	$6,445,570	3
3	Sherwood Heights Junior High (modernization and gym addition), Sherwood Park (2018)	6,930	$16,190,070	4
TOTAL		12,441	$22,635,640	5

Ten-Year Facilities Plan 2016-2017 to 2026-2027. *See Appendix 2 which includes the notes.*

Modular New/Replacement Program:

School/Location	No. of Units	New/Replacement	Estimated Total Cost
Mills Haven Elementary/Sherwood Park	2	New	$658,588
Ministik School/Strathcona County	3	Replacement	$1,037,110
Wes Hosford School/Sherwood Park	8	Replacement	$3,000,032
Total	13	-	$4,695,730

School New/Replacement/Modernization:

Priority	School/Location	Area (sq. m.)	Estimated Total Cost
1	Wye Elementary Replacement/Addition: Sherwood Park Heritage Hills Site (2017)	6,399	$20,234,550
2	Rudolph Hennig Junior High modernization: Fort Saskatchewan (2018)	5,511	$11,659,242
3	Sherwood Heights Junior High modernization & gym addition: Sherwood Park (2018)	6,721	$14,219,155
4	New school: Fort Saskatchewan (2019)	5,031-6,729	$15,910,739-$21,278,057

5	New school: Sherwood Park (2021)	5,031-6,729	$15,910,739-$21,278,057
6	New school: Fort Saskatchewan (2026)	5,031-6,729	$15,910,739-$21,278,057

Ministik School does not qualify for a modernization, as per the criteria within the Alberta Education Capital School Manual, that states, "Modernization funding is provided for projects where the total construction costs for non-program specific renovations exceeds $1,000,000", therefore a modernization is not being considered. The threshold of 75% cost of a replacement school has not been met, so consequently a replacement building is not being considered.

V. The number of students who would need to be relocated as a result of the closure (Board Policy 15, 3.1)

The 125 students who were attending Ministik School as of September 30, 2016, came from the following school divisions or other EIPS attendance areas:

- Two students from Edmonton Public Schools
- Three students from Black Gold School Division
- 10 students from Battle River School Division
- Three students from the Fultonvale Elementary/Junior High attendance area
- One student from the Uncas Elementary attendance area
- 106 students from the Ministik School attendance area

If all 125 students were to be relocated within EIPS, they could be accommodated at the following schools, based on current capacities.

SCHOOLS	2016-17 Capacities	2016-17 Utilization Rate	2017–18 Boundary Status
***École Élementaire Ardrossan Elementary**	522	108%	Closed
Fultonvale Elementary Junior High	600	68%	Open
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Westboro Elementary	486	86%	Closed Gr. 2 & 5 Logos, Gr. 4 & 6 regular
Woodbridge Elementary	433	89%	Closed

* Ardrossan Elementary currently has closed boundaries for the 2017 – 2018 school year due to the construction of the new school, which is to be completed in 2018.

VI. The need for, and extent of, busing (Board Policy 15, 3.11)

Currently, student transportation transports 108 students to Ministik School, utilizing four buses in the morning and three in the afternoon. If Ministik School closes, students would be transported to Fultonvale School through the Fultonvale transfer site. This would allow access to Fultonvale, Ardrossan or Sherwood Park schools and would be accomplished within acceptable Division ride times.

VII. Program implications for other schools and for the students when they are attending other schools (Board Policy 15, 3.2, 3.9)

Currently, there are no Division programs at Ministik School that would require accommodation at another Division special education site.

If Ministik closes, the regular program students, depending on school of choice, may have access to single grade class groupings. There would be increased funds to consider purchasing resources, curriculum-related resources, library materials, physical education equipment, technology upgrades and mathematics and science manipulative materials. Students could also have access to a wider range of options and opportunities to be involved in a wide variety of clubs and leadership opportunities.

The current number of students identified as having special needs or requiring IEPs (Individual Education Plans) at Ministik is well within Division averages and is illustrated below:

School	**Pop**	**Mild/Moderate Code**		**Severe Code**		**Total Codes**	
École Élementaire Ardrossan Elementary	470	22	5%	7	1%	29	6%
Uncas Elementary	162	9	6%	1	1%	10	7%

Ministik School	113	3	3%	5	4%	8	7%
Fultonvale Elementary	242	16	6%	7	3%	23	10%
Fultonvale Junior High	133	11	8%	0	0%	33	8%

*The population (Pop) numbers do not reflect kindergarten (ECS)

VIII. The educational and financial impact of closing the school, including the effect on operational costs and capital implications

Educational Impacts:
Class size and its effect on student achievement within the Canadian context is limited. Sound research will find small variations that are not statistically significant and that, overall, there is no significant relationship between school size and student achievement. Two pieces of relevant Canadian literature are contained in Appendix 3, *Does School Size Affect Student Achievement,* and Appendix 3a, *School Size as a Factor in the Academic Achievement of Elementary School Students.*

EIPS schools with larger school populations are able to offer a greater variety of optional activities and supports. This may include such things as increased access to school counsellor time, and more noon hour and after school activities.

Financial Impacts:
If Ministik School is closed, the budgeted funds will be available for use in other schools:

- Transportation grant revenue is estimated to increase by $45K annually.
- There will be one-time costs with school closure. These include the following:
  - Cost to move supplies and materials from Ministik to another EIPS school is estimated at $31K
  - Monthly electricity and gas ($1,628/month) and insurance ($554/month) until the building is disposed of as per Administrative Procedure 519, *Surplus Land and Buildings*.
- Estimated Ongoing Annual Cost Savings
  - Plant, Operations and Maintenance Costs = $92K
  - Principal = $128K
  - School Fixed Rate Allocation = $300K
  - Transportation = $6K
  - Insurance = $7K
  - Total Estimated Annual Ongoing Savings = $533K

Small schools by necessity (SSBN) funding helps jurisdictions fund small schools where the distance between schools is greater than 25 kilometers. The funding is made up of two categories of schools, small school by necessity (SSBN), which means the school is greater than 25 kilometers from the next closest school and small schools, which have populations less than 150 students.

- Ministik School meets the definition of a small school as defined by Alberta Education as its FTE (full time equivalent) funded enrolment is less than 150.
- It *does not meet* the definition of a small school by necessity (SSBN) because there are schools (Uncas and Fultonvale) that are less than 25 kilometers from Ministik that have the capacity to accommodate Ministik School students.

Small schools by necessity (SSBN) funding from Alberta Education calculates an allocation (a fixed and variable component) based on the enrolment of small schools. This allocation is then multiplied by the ratio of number of SSBN/ number of small schools.

If Ministik School was not included in the 2015/2106 calculation, SSBN funding would be reduced by $22K and in 2016/2017 SSBN funding would be reduced by $3K.

Further, the small schools by necessity funding received by each school in the Division is affected by Ministik School remaining open. Using the 2016/2017 budget year, if Ministik were to close, the following additional amounts would be allocated to the SSBN schools:

- Andrew School = $48,369
- Mundare School = $28,637
- Ecole Parc Elementaire = $3,020
- Bruderheim School = $25,712
- Uncas Elementary = $7,124

See Appendix 4 - Small Schools by Necessity (SSBN)

IX. <u>The educational and financial impact if the school were to remain open (Board Policy 15, 3.5, 3.6)</u>

Educational Impacts:
If Ministik School were to remain open, the school would continue to offer regular programming for students in single and multi-grade class groupings.

Financial Impacts:
The financial impact if Ministik is to remain open is the equivalent to the yearly cost of operations. In 2015/2016, the cost was broken down as follows:

- Instructional costs of $1,062,960
- Operational costs of $91,667

This cost is variable and is subject to change on a yearly basis dependent on factors such as enrolment, POM costs as well as other contractual obligations.

Ministik School has the highest operating cost per square metre/month in the Division. In 2014/2015, the cost was $6.47 per m2/month versus the Division average of $3.92. This cost decreased slightly to $6.13 per m2/month in 2015/2016 versus the Division average of $3.68. This reduction was due to the renegotiation of the Division's natural gas contract.

See Appendix 5 - EIPS Actual 14/15 School Costs
See Appendix 6 – EIPS Actual 15/16 School Costs

X. The population and demographic data (Board Policy 15, 3.3)

The number of children between zero and 17 years of age residing in the attendance boundary of Ministik School who attend EIPS schools or attend a non-EIPS school is provided below.

AGE	2010-11 ACTUAL	2011-12 ACTUAL	2012-13 ACTUAL	2013-14 ACTUAL	2014-15 ACTUAL	2015-16 ACTUAL	2016-17 ACTUAL
0	31	24	21	35	16	24	25
1	29	32	23	21	31	18	25
2	37	26	32	23	25	33	20
3	30	36	29	32	26	25	35
4	30	30	35	26	29	26	25
5	40	32	28	34	27	27	25
6	36	45	35	31	36	27	30
7	33	37	43	32	32	38	30
8	34	36	40	44	33	31	40
9	33	31	35	39	42	34	35
10	34	32	34	37	36	45	30
11	49	29	36	33	38	34	45
12	36	45	31	37	34	36	30
13	33	36	45	34	39	35	35
14	45	31	40	46	33	36	35
15	41	42	31	36	45	29	35
16	38	36	47	28	35	47	25
17	44	35	35	43	28	32	45
NO.	**653**	**615**	**620**	**611**	**585**	**577**	**570**

As per the 2016 census data from Statistics Canada, the area of South Cooking Lake had a population of 4,664, which is a 0.08% decrease from 2011 (4,702).

Based on the Strathcona County Municipal Census 2015 the population of Ward 7 which includes the area of Ministik had a population of 8,399. This is a 1% decrease from the reported population in the 2012 Strathcona County Municipal Census (8,483).

XI. The amount and cost of excess space at the school (Board Policy 15, 3.4)

Currently there is no excess space at Ministik School. As per Alberta Education, the total capacity of the school is 139 students or 95% capacity.

XII. The location and accessibility of the school and the proximity of and impact on other schools

Ministik School is located on Range Road 212 and Hwy 14 with a proximity of 16.4 kilometers to Fultonvale School, 22 kilometers to Uncas School and 26.25 kilometers to Ardrossan Elementary School. Based on Alberta Transportation online data, there are between 10,000 and 15,000 vehicles per day travelling on Highway 14 in front of Ministik School. Highway 14 is a provincial highway and, therefore, the speed limit is 100 kilometers per hour.

In 2002, there was a traffic study conducted after parents expressed concerns that traffic flows were increasing, vehicles were not slowing down and an inherent hazard existed for vehicles entering or leaving the site. The specific request from parents was the addition of flashing school zone lights.

Traffic Engineering Services found that during the peak morning and afternoon times there were approximately 20-30 vehicles entering and exiting the site. The recommendations outlined in the study were the addition of a school entrance sign and an upgrade to the school intersection with a bypass lane for eastbound traffic and right turn tapers for westbound vehicles entering the school grounds. In 2002, these changes were implemented.

If Ministik School were to close, there would be a potential increase of students attending other schools within Elk Island Public Schools. If all students presently attending Ministik School attended Fultonvale School, there would be a net increase of approximately 125 students who could be accommodated at the school as the total number of students would not be greater than the total capacity of Fultonvale School. Sixteen Ministik students come from areas outside its boundaries including Edmonton, Battle River, and Uncas (see section V); these students might not attend Fultonvale.

Additionally the impact on receiving schools would be positive. In many cases, enhanced programming and opportunities would be available due to the increased enrolment and student allocations.

XIII. The necessity to safeguard the health and safety of students, staff and public

Extensive water and mould damage has been identified in all three portable classrooms and the ATCO trailer, which accommodates the school library. Due to the age of the portables, replacement is the most cost effective option. Alberta Infrastructure has approved the replacement of the three portable classrooms, although no funding has been received to this date. The library does not qualify for the modular replacement program. While air testing has determined that airborne moulds are currently within Health Canada guidelines, this cannot be guaranteed indefinitely due to the susceptibility of mould growth to changing environmental conditions.

See Appendix 7 - Mould Assessment Report

One drinking fountain at the school exceeds the maximum allowable concentration of lead as set by Health Canada despite the replacement of fountain components. A daily flushing protocol is in place at all drinking fountains as a temporary measure while a long term solution such as the replacement or lining of pipes is investigated.

See Appendix 8 – Lead in the Water Report

XIV. The impact of closing the school on the community taking into account existing or proposed development plans

Strathcona County Planners have indicated that although the two Area Structure Plans (ASP) in the Ministik area (South Cooking Lake and Suntree) are not developed to their full potential under their ASP, there are no expected plans to develop further.

The Ministik area is within the Beaver Hills Moraine Policy Area of the Municipal Development Plan (MDP), which only allows for two total parcels per quarter section. As most quarter sections in the area have been subdivided at least once, subdivision in the area under current policy would be very minimal resulting in a minimal if any impact to the population.

The Beaver Hills Moraine was designated a UNESCO (United Nations Educational, Scientific and Cultural Organization) Biosphere in 2016. There is an acknowledged desire to conserve this important natural landscape. The area is intended to support limited rural residential, agricultural, recreation and tourism uses.

XV. Costs associated with the transition

Human resource costs may be incurred should Ministik School be closed. These costs would be associated with ensuring a positive transition for students and staff to their new school.

An estimate for possible moving costs that may be incurred if Ministik School were to close has been estimated from the move that occurred when Colchester Elementary closed in 2012–2013. At that time, all equipment was redirected to Fultonvale Elementary Junior High. The total cost of the move was $31,305.80.

Should students transition from Ministik School to other schools, EIPS will ensure that necessary supports and services are provided for students at their new school. Whenever students transition from one school to another, multiple opportunities are provided to students to ensure that they have a chance to become familiar with their new facility ahead of the transition, and that they meet new staff and other students attending the school. Staff will follow up with any students who have concerns or are anxious about the transition. Students at all EIPS schools within the vicinity of Ministik have excellent achievement results. It is expected that the Ministik students would continue to achieve to their potential in their new school should Ministik School close.

Parents play a key role in helping to ensure that students transition well. Transitions from one school to another are generally a positive experience for students and are well-organized and supported. Most students adjust quickly to their new school.

XVI. Other relevant factors

Ministik School is located in Strathcona County, with South Cooking Lake being the closest hamlet to the school. As of 2016, South Cooking Lake recorded a population of 241 living in 105 of its 117 total private dwellings, a change of −16.3% from its 2011 population of 288. The population of South Cooking Lake according to Strathcona County's 2015 municipal census is 302.

In January 2012, a value scoping session was held by Alberta Education to consider the immediate and future needs of the students from Colchester Elementary, Fultonvale Elementary/Junior High and Ministik Elementary. The decision of the day was that Fultonvale Elementary/Junior High be modernized to have a design core capacity of 700 students and an opening capacity of 600 students.

See Appendix 9 - May 8, 2012 Response Letter from Minister Thomas A. Lukaszuk, and
See Appendix 10 – Value Scoping Session – Fultonvale and Colchester Schools

To replace the three portables, the ATCO trailer would need to be removed and most likely, could not be returned back to its original site due to its condition.

ATTACHMENT(S):

1. Three Year Capital Plan - Appendix 1
2. 10 Year Facilities Plan - Appendix 2
3. *Does School Size Affect Student Achievement?* Jones, K.R. and Ezeife, Anthony, Ontario Education Research Exchange (OERE), Ontario Institute for Studies in Education (OISE), University of Toronto, Ontario. - Appendix 3

4. *School Size as a Factor in the Academic Achievement of Elementary School Students*, Jones, K.R. and Ezeife, Anthony (2011. Vol. 2. No. 8), Scientific Research, University of Windsor, Ontario. - Appendix 3a
5. Small School By Necessity (SSBN) - Appendix 4
6. EIPS Actual 14/15 School Costs - Appendix 5
7. EIPS Actual 15/16 School Costs – Appendix 6
8. Mould Assessment Report - Appendix 7
9. Lead in the Water Report - Appendix 8
10. May 8, 2012 Response Letter from Minister Thomas A. Lukaszuk - Appendix 9
11. Value Scoping Session Fultonvale and Colchester Schools - Appendix 10
12. Closure of Schools Regulation - Appendix 11

:clp

2016/17 to 2018/19 Three-year Capital Plan – by project type

New/Replacement Schools:

Priority	School/Location	Area (sq. m.)	Estimated Amount	Notes
1	Wye School, Sherwood Park, Heritage Hills Site (2017)	6,399	$23,625,459	1
4	New K-9 School, Sherwood Park, Cambrian (2019)	7,369	$27,176,435	2
TOTAL		13,768	$50,801,894	

Modernization:

Priority	School/Location	Area (sq. m.)	Estimated Amount	Notes
2	Rudolph Hennig Junior High Modernization (2017)	5,511	$6,445,570	3
3	Sherwood Heights Junior High (modernization and gym addition), Sherwood Park (2018)	6,930	$16,190,070	4
TOTAL		12,441	$22,635,640	5

Notes:

1. The Board agrees to recommend a replacement/addition School for Wye to be located in Heritage Hills. Strathcona County has an available site for the school that provides a total of 11.17 acres. The legal description is: Lot 204MR Block 303 Plan 9221752 (5.46 acres) and Lot 70MR Block 303 Plan 8922571 (5.71 acres). The Area reflects capacity of 750 students. Estimated cost includes construction, professional fees, project expenses, F & E, and CTS expenses, based on 2015 costs. Current occupancy rate is 90% with grade 6 being closed boundary.
2. Area reflects initial capacity of 900. Estimated cost includes construction, professional fees, project expenses, F & E, and CTS expenses, based on 2015 costs.
3. The heating system has become obsolete and requires $3.5 million to replace. There is a significant amount of other costly issues such as electrical, plumbing, asbestos, roof etc. that need to be addressed. Overall cost is around $6.4 million.
4. Reflects modernization of the School with the addition of a gym. Current gym is sized at 412.2 square meters. Based on current Alberta Education design standards, the gym should be 705 square meters. Estimated costs are based on 2015 costing.
5. Modernization projects are not based on construction square meter costs but rather replacement of facility components and associated costs.

Elk Island Public Schools

Your Future in MIND

Ten-Year Facilities Plan 2016-2017/2026-2027

Modular New/Replacement Program:

School/Location	No. of Units	New/Replacement	Estimated total cost ($)
Mills Haven Elementary/Sherwood Park	2	New	$658,588
Ministik School/Strathcona County	3	Replacement	$1,037,110
Wes Hosford School/Sherwood Park	8	Replacement	$3,000,032
Total	13	-	$4,695,730

Estimate costs are based on the following;

- The new modular unit cost is based on 2015/2016 cost of the Win Ferguson unit.
- The replacement cost are based in the replacement values found in VFA.

School New/Replacement/Modernization:

Priority	School/Location	Area (sq. m.)	Estimated total cost ($)
1	Wye Elementary Replacement/Addition: Sherwood Park Heritage Hills Site (2017)	6,399	$20,234,550
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6	New school: Fort Saskatchewan (2026)	5,031-6,729	$15,910,739 $21,278,057

Estimate costs are based on the following;

- The 2016 construction costs as per Alberta Infrastructure: $2,666 m2.
- Additional construction costs are included in the estimated total cost. These costs cover consultant fees and architecture fees.
- Appendix B: Consultants' Fees, Project Expenses and Furniture and Equipment Support as a Percentage of Building Construction Cost-The School Capital Manual, March 2015.
- Modernizations: 75% of the total 2016 construction cost and fees found Appendix B: Consultants' Fees, Project Expenses and Furniture and Equipment Support as a Percentage of Building Construction Cost-The School Capital Manual, March 2015
- If the modernization cost estimate becomes higher than 75% of a new build, a replacement school may be requested rather than a modernization.

Facility Services is currently undergoing an intensive review of all of our school buildings and modulars to identify and prioritize immediate and future needs. As a result, the *Ten-Year Facilities Plan* will need to be reviewed and updated once this process is complete. *The Ten-Year Facilities Plan* is reviewed and updated on an annual basis

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Does School Size Affect Student Achievement?

What is this research about?

There has been much debate about the impact of school characteristics (such as school and classroom size) on student achievement. This study investigated the relationship between the size of a school — how large a school is in terms of student enrollment — and the academic achievement of students within that school.

What did the researchers do?

In May of 2003, the researchers analyzed EQAO (Education, Quality and Accountability) test results from 541 schools across 10 English-language school boards spanning the province of Ontario. Student results in reading, writing, and mathematics (for both grade 3 and 6) were compared with the size of the school these students were enrolled in.

What you need to know:

This study examined the relationship between school size and student achievement in 541 schools in across Ontario. While the researchers found there were no significant relationships between school size and student achievement, slight variations were noted. For example, a larger percentage of students in medium and large schools tended to achieve at (or above) the provincial level 3 standard in some areas of the curriculum.

School size was determined by the number of students participating in the EQAO assessment as follows:

- small schools had less than 245 students;
- medium size schools ranged from 246 to 420 students;

- large schools had more than 420 students.

In total, EQAO data was collected for 48,482 students in grades 3 and 6; in 541 schools across the province of Ontario.

Some schools were excluded from this study — the EQAO did not release the results of 15 schools that had fewer than 15 students at grade 3 or 6 and the researchers choose not to include that did not have both grade 3 and grade 6 EQAO data.

The researchers analyzed EQAO and school enrollment data statistically to determine whether there was any relationship between school size and student achievement on the EQAO.

What did the researchers find?

The researchers found that, overall, *there was no significant relationship between school size and student achievement*. However, the researchers note that a larger percentage of students from *large* schools achieved *at* level 3 (provincial standard) for grade 3 *Writing* and grade 6 *Reading*, *Writing* and *Mathematics*, compared with smaller schools, where a larger percentage of students performed under the level 3 provincial standard.

The researchers also found that *medium*-sized schools tended to have the most students achieving *above* the provincial standard (at level 4) for grade 3 Writing and grade 6 Mathematics.

How can you use this research?

Teachers, administrators, and parents may want to use this research as a starting point for discussions about school characteristics and student achievement. This research study found that school size was *not* a significant factor in student achievement, which may contradict the conventional wisdom of some. However, as the researchers point out, while no *significant* relationship was found, slight variations between different sized schools and student achievement were found. For this reason teachers, administrators, and parents may want to consult the wider body of research on this topic.

Administrators, teachers and parents will also want to be careful to consider school size within the broader context of factors impacting student achievement including,

among other things, teacher instructional practices and school environment.

Original article:

To learn more about this study, we invite you to read the original research article:

Jones, Kerry Reimer., Ezeife, Anthony Nnajiofor. (2011). School Size as a Factor in the Academic Achievement of Elementary School Students. *Scientific Research 2*(8), 859-868.

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Keywords:

School, size, achievement, elementary, students

About this summary

The Ontario Education Research Exchange (OERE) is a project of the *Knowledge Network for Applied Education Research*, an Ontario network promoting the use of research in education. The OERE's clear language summaries of academic research aim to support this mandate.

This summary has been adapted from the *ResearchSnapshot* series developed by York University and ResearchImpact and has been developed according to writing and design principles unique to OERE. For more information about this summary or the OERE network please contact oere.knaer.oise@utoronto.ca.

This summary reflects findings from this study *only* and is not necessarily representative of the broader body of literature on this subject. Please consult the original document for complete details about this research. In case of any disagreement, the original document should be understood as authoritative.

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School Size as a Factor in the Academic Achievement of Elementary School Students

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This study empirically assessed the relationship between school size and academic achievement of elementary school students in Ontario, Canada. Utilizing data from the Ontario provincial standardized test, the Educational Quality and Accountability Office (EQAO), the results of 541 schools from ten school boards, were studied. A One-way Analysis of Variance (ANOVA) indicated that overall, there was no statistically significant correlation between school size and student achievement. However, there were significant correlations with respect to levels of performance in both Grades three and six in some curricular areas. Also, further analysis at each independent achievement level revealed that the mean percentage of students achieving at stipulated provincial standards in Grade three writing and in Grade six reading, writing and mathematics were highest in large-sized schools (schools with more than 420 students). Results further indicated that the mean percentage of students performing above provincial standards in Grade six reading and writing was also highest in large schools. Students in medium-sized schools (between 246 and 420 students) also had the highest mean percentage of students performing above provincial standards in Grade three writing and in Grade six mathematics. The limitations and implications of the results are discussed, and relevant suggestions made.

Keywords: School, Size, Achievement, Elementary, Students

Introduction

Optimal school size has long been an issue of contention at both the elementary and secondary levels. Throughout the last century, the organizational tendency in education has fluctuated between a push for small or large schools. Advocates for each perspective have fought relentlessly for referendum in school boards across North America. Such debates are further exacerbated by emotional, financial and political investments. Clarification from the research literature does not provide an adequate resolution to the issue of optimal school size, as empirical validation exists for each side of the argument.

Over the last five years, the trend in educational reform has favoured smaller schools (Mulrine, 2002). For example, the Annenberg Foundation had pledged $500 million to reform urban schools in Chicago (Ready, 2004). The Bill and Melinda Gates Foundation had also contributed $51.2 million for the creation of 67 small theme-based schools in New York (Ready, 2004). In Ontario, Canada, the location of this study, the debate over the physical constitution of schools that effectively promote positive academic growth continues. This debate has been intensified with the specific physical makeup of Ontario schools and the deliberate composition of the public funding formula. According to *People for Education* (PFE) (2006) almost half of the elementary schools in Ontario would be considered small in size, having less than three hundred students. A similar situation exists in Ontario high schools, with thirty-three percent having an enrolment of less than six hundred students. The existing funding formula is based on larger school enrolments, with sixty percent of elementary schools and fifty-five percent of high schools below the formula limitations that would permit for a full-time principal (People For Education, 2006). In order to staff their schools, school boards have been making cuts in other areas. Small schools have faced a steady decrease in the amount of full-time principals, librarians, specialized teachers and guidance counselors. Intensifying the debate is a current government-mandated reduction of class sizes in junior kindergarten through to the third grade, with an implementation of a hard cap of twenty students per class.

Research has shown that communities hold schools accountable for students' academic achievement (Lee, & Loeb, 2000). Knowledge concerning whether the size of a school impacts academic success is invaluable in informing community decisions to consolidate or maintain small schools and establish effective funding formulas. The purpose of this study was to determine whether there is a relationship between school size and student academic achievement, and if there is, to investigate the nature of the relationship.

Literature Review

Historical Overview

Historically, there is little agreement over what constitutes the most effective school size. From the evolution of the one-room schoolhouse to the mega-schools of today, debates on whether to consolidate or maintain small schools had been raging for a long time (Howley, 1995). In a book about rural education, Cubberley (1922) traced the school consolidation trend back to a Massachusetts law in 1867, which marked the loss of independent self-control over individual schools and the commencement of local town management. Prior to this law, most schools were small in size and many were considered rural in nature. The introduction of town management resulted in the effective consolidation of country schools. The consolidation trend continued throughout the 1920s, as schools grew larger as a consequence of the increasing immigrant populations in major cities. The large influx of new students caused districts to con-

solidate administration, instruction and curriculum (Abbott, Joireman, & Stroh, 2002).

Additionally, the President of Harvard University, Conant (1959), further solidified North American consolidation efforts with the publication of the book, *The American High school Today*, which claimed that larger schools were the solution to narrowing the learning gap and winning the space race. The Harvard educator believed that small schools did not allow for a beneficial diversified curriculum and reasoned that larger high schools offered more comprehensive instructional programs of greater quality at lower costs.

Having reviewed nearly 120 studies conducted between 1924-1972 pertaining to school size and its relationship to school effectiveness, Stemnock (1974) found that the studies generally served as justifications for larger schools. The research studies tended to focus on the relationship among input variables, including the curriculum, teacher credentials and teaching styles. The few studies which related school size specifically to academic achievement were found to be void of any recommendations in reference to optimal school size.

Throughout the literature, consolidation advocates have also relied heavily on expenditure theories as justification for the abolition of small schools (McGuffey, & Brown, 1979). They have maintained that the reduced per pupil expenditures feasible in larger schools, translated into greater student achievement. This relationship was achieved through the calculated investment of monetary savings into various methods of school improvement. Fiscally this argument was very appealing to educational policy makers, and in an era of economic pressure, the trend to consolidate continued.

The association between reduced expenditure and achievement previously reported (McGuffey, & Brown, 1979) was not found in subsequent replication studies in the 1980s (Burrup, Brimley, & Garfield, 1988; Monk, 1987). Consequently, the enthusiasm to consolidate began to fade, as the effectiveness of large schools was questioned (Guthrie, & Reed, 1986). Sergiovanni (1995) argued that school size was associated with valuable process variables that large schools disabled or suppressed, and urged educational decision-makers to go beyond simple per student cost and consider the ratio of productivity to cost. Additional research concluded that per student expenditure was positively related to student achievement and that a ten percent increase in per pupil expenditures was related to an increase in student achievement of one standard deviation over 12 years of schooling (Greenwald, Hedges, & Laine, 1996).

Contemporary Advocation for Small Schools

Researchers (Greenwald, Hedges, & Laine, 1996) performed a meta-analysis of studies from the 1960s and found student achievement in small schools to be superior to that in large schools. Using the American National Educational Longitudinal Study data set, Lee, Smith and Croninger (1997) similarly found that larger high schools had a negative influence on academic achievement particularly in mathematics and science. In a study of the reading and mathematics proficiency scores from every high school in North Dakota, Hylden (2005) found that schools with over 500 students had the poorest performance rates.

At the elementary level, research on third graders in 1,021 New York schools found that increasing school size had a negative effect on academic achievement (Wendling, & Cohen, 1981). In a large urban Missouri school district, Alspaugh and Gao (2003) studied the results of the Stanford 9 Normal Curve Equivalent (NCE) scores among fifth grade students. Controlling for socioeconomic status (SES), Alspaugh found a decline in achievement levels as enrolment increased, particularly in inner city and suburban schools. Similar findings of a positive relationship between academic achievement and small schools had been replicated in many other studies (Eberts, Kehoe, & Stone, 1982; Fowler, & Walberg, 1991; Miller, Ellsworth, & Howell, 1986; Wasley et al., 2000).

Other Variables in the Size and Achievement Relationship

Some researchers have cautioned that school size and academic achievement should not be correlated in isolation, and have concluded that other variables, particularly socioeconomic status (SES), must be considered in this relationship. Having dubbed this association the Matthew Principle (Howley, 1995), after the biblical reference to the phenomenon of the rich getting richer and the poor getting poorer, Howley found that the relationship between school size and academic achievement was completely dependent on the socioeconomic status of the community in West Virginia. Results indicated that small school size mitigated the negative effects of poverty on academic achievement.

Extending the work of the Matthew Project, research in Montana, Georgia, Texas and Ohio, also found that smaller school size cut the variance in achievement associated with SES by 20 to 70 percent (Howley, Strange, & Bickel, 2000). The percentage was usually 30 to 50 percent, depending on the grade level. The relationship was notably weakest in Montana, where there was a large percentage of small schools. In a report on their findings, Howley, Strange, and Bickel (2000) concluded that the correlation between poverty and lower academic achievement in the four States of interest was ten times stronger in large schools than in small ones. Research further indicated that larger schools served the same function for affluent communities. An exact replication study in Washington reached the same conclusion (Abbott, Joireman & Stroh, 2002). Other researchers also found that as school size increased, achievement levels for schools with economically deprived students decreased (Bickel, Howley, Williams & Glascock, 2001; Caldas, 1993; Franklin & Crone, 1992).

Another variable that was correlated with school size and academic achievement was grade level. In a study of students in California, Friedkin and Necochea (1988) looked at the 3rd, 6th, 8th and 12th grades. They concluded that large schools were associated with greater achievement for the 12th grade students, but small schools were associated with greater achievement for students in the 3rd, 6th and 8th grades. In a similar study, the Texas Education Agency (1999) found that students in the elementary and middle school grades were more adversely affected by school size than at the high school level. The Agency concluded that any potential benefits of large school size may be negated until students had acquired foundational academic skills, such as reading and arithmetic, and had become capable of independent learning.

Canadian researchers have also studied the relationship between academic achievement and school size (Lytton, & Pyryt, 1998; Ma, & Klinger, 2000). Lytton and Pyryt used data collected through the completion of the Alberta Achievement Test by almost all the elementary schools in the Calgary Board of Education in 1996. Controlling for the variable of socioeconomic status, the researchers found no relationship between school size and achievement. In a similar study in New Bruns-

wick, Ma and Klinger (2000) used the New Brunswick School Climate Study of 1996 to accumulate data, which evaluated student achievement in mathematics, science, reading and writing. The researchers focused on the entire grade six population in the English school system. Using a hierarchical linear model, they found no association between achievement and school size.

Optimal School Size

Taking cognizance of the reported benefits of small schools, many researchers sought to numerically clarify what constituted an optimal school size. Long ago, large school advocate, Conant (1959), urged schools to have a graduating class of 100, which is notably small by today's standards. Other high school researchers reported that there was no reason for a high school to have more than 400 students (Haller, & Monk, 1988). Sergiovanni (1995) recommended no more than 300 students attending a school, at either the high or elementary school level. Meier (1996) had concluded that schools with enrolments of 300 to 400 students were optimal for seven reasons, namely, governance, respect, simplicity, safety, parent involvement, accountability and belonging. Lee and Smith (1997) concluded that a curvilinear relationship existed because they found that high school achievement increased as enrolment levels rose to 600, stayed steady up to 900, and then decreased as enrolment size further rose. They recommended an optimal high school enrolment of 600 to 900 students. Research conducted primarily at the elementary level concluded that the optimal upper limit of enrolment in an effective school would be 300 students (Goodlad, 1984).

In summary, there has been vigorous debate over the optimal size of efficient schools. Research has provided little clarity on whether there is a relationship between school size and academic achievement. Some research has shown a correlation between the two variables, while others have concluded that the relationship is totally dependent on other sociological and economic factors, and still others have found that there is no relationship at all. Researchers who have concluded that there is a correlation between school size and academic achievement do not concur on what the optimal size of a school should be. There is also no conclusive clarification of what impact, if any, the innate characteristics of small and large schools have in the achievement and size relationship. With the foregoing as an impetus, this study set out to explore the issue further, focusing on the Province of Ontario, Canada, where the EQAO (Education Quality and Accountability Office)—a standardized achievement test—is routinely administered, and used to assess the academic achievement of elementary school students.

Method

Participants

The target population for the study was the Grade three and Grade six students in Ontario school boards that participated in the EQAO assessment in May of 2003. A sample of ten English-Language public school boards was selected from the population. Sampling of the Ontario school boards was done strategically, resulting in a clustered sample. School board selection was based on the following criteria: the geographical location of the board, the existence of both rural and urban areas within each school board district and an assortment of different-sized schools within the board. With regard to geographical location, school boards were strategically selected so that they spanned across the entire province. Eight of the ten school boards were located in the Southern area of the province, and two were located in the Northern area. The ten school boards included in the clustered sample were: Algoma District School Board (DSB), Bluewater DSB, Durham DSB, Grand Erie DSB, Greater Essex County DSB, Kawartha Pine Ridge DSB, Lakehead DSB, Limestone DSB, Ottawa-Carleton DSB, and Peel DSB. In total, 48,482 third and sixth Grade students who attended the 541 schools within the ten selected school boards, and participated in the 2002/2003 EQAO assessment were subjects in this study.

Within the sample, some individual school results were suppressed by the Education Quality and Accountability Office. Suppression occurred when the schools had fewer than fifteen students at the Grade three or Grade six level who were eligible to participate in the assessment. All suppressions were made in the interest of protecting personal information, so that individual results could not be inferred from the data. As a result of the EQAO suppression practices, the data for 15 schools were not available for inclusion in this study. Schools that did not have both Grade three and Grade six classes were also omitted from this study. This purposeful exclusion was done to maintain a more homogeneous sample because the researchers did not want any variables resulting from the specialization of educational experiences within primary and junior schools to skew the results.

Instrumentation

Description of EQAO

The study relied on data emanating from the Education Quality and Accountability Office (EQAO) assessments in the selected schools. The EQAO assessment measures the variable of academic achievement. EQAO was established based on the recommendation of the Ontario Royal Commission of Learning in 1995 (EQAO, 2005). The Commission concluded that province-wide assessments would meet the societal demands for greater quality and accountability in the publicly funded school system. The purpose of the EQAO assessment is to provide "accurate, objective and clear information about student achievement that teachers and parents can use to improve learning for all students" (EQAO, 2003a, p.1). Included in the EQAO Assessment package was the *Administration Guide* for the Grade 3 and Grade 6 Assessments of Reading, Writing and Mathematics and the *Teacher's Daily Plans* (EQAO, 2003b). Both books contained all the policies, procedures and instructions needed to administer the assessment in the most fair and consistent manner possible. These instructions included the sequence of the activities for each day, information about which resources were permitted, introductory activities, time allotments and the exact wording that the teacher should use when introducing each segment of the assessment. Strict adherence to these procedures was mandatory so as to ensure the reliability of the results across the province.

The 2002/2003 EQAO assessment for Grades three and six came in individualized student packages that consisted of a reading magazine, a reading answer booklet, a writing booklet, a mathematics booklet and a multiple choice booklet. All of the student booklets at a particular Grade level were identical, with the exception of the multiple-choice booklets. There were four versions of the multiple-choice booklets within each class. The only difference in the versions was the sequencing of the questions within the booklet. Each reading magazine comprised of two selections—a fictional story and an information article.

Students answered questions based on these readings in the accompanying reading answer booklets. The writing component of the EQAO assessment comprised of two assignments. At the Grade three level the students were to write a fictional adventure story and a journal entry. At the Grade six level the students were to write a fictional adventure story and a letter of persuasion.

The format of the mathematics component was also similar in both the Grade three and Grade six versions of the EQAO assessment. The mathematics booklets were broken into three sections, entitled Investigations 1, 2 and 3. They consisted respectively of 7 questions, 7 questions and 6 questions in the third Grade assessment and 7 questions, 6 questions and 7 questions in the sixth Grade assessment. The questions integrated many of the mathematical expectations outlined in *The Ontario Curriculum for Mathematics* for the respective Grades, covering all five strands of Data Management and Probability, Number Sense and Numeration, Geometry and Spatial Sense, Measurement, and Patterning and Algebra.

Implementation

The EQAO assessment is administered yearly to pupils in Grades three and six in Ontario. EQAO ensured validity of the 2002/2003 assessment by basing all of the reading, writing and mathematics tasks on the appropriate grade expectations outlined in The Ontario Curriculum, Grades 1 - 8 (Ontario Ministry of Education, 2006). The 2002/2003 assessment was administered over a period of five days. Testing occurred for no more than two hours and thirty minutes per day. At the end of the five-day period, all the student packages were returned to the Education Quality and Accountability Office for evaluation.

Many steps were taken to ensure examiner reliability. EQAO ensured that the work of every person chosen to evaluate the assessment was of consistently high quality through a careful selection process, comprehensive training and monitoring. Training consisted of two full days prior to the evaluation of the assessment, as well as ongoing training throughout the marking period. The ongoing training included the completion of training booklets, orientation papers, paired marking, marker readiness exercises and group marking.

Some booklet-related steps were also taken to ensure reliability of the assessment. Every student was assigned a barcode, to remain anonymous to the evaluator. Booklets were scrambled to ensure that individual schools and school boards could not be identified during the evaluation process. Each booklet was evaluated by multiple markers. The blind reinsertion of student papers was also done to check the consistency of markers' scoring. EQAO also conducted a generalizability study of the 2002/2003 assessment. This study allowed for EQAO to report on the consistency of the examiners and assessment items and estimate an overall generalizability coefficient.

Design and Procedures

The design of this quantitative study is correlational. The data for achievement and school size utilized in the study is a matter of public record. The Grades three and six 2002/2003 EQAO assessment results for each school in the stratified sample were obtained from the official EQAO Web site. EQAO reported the findings from the assessments in two ways: Methods 1 and 2. Method 1 reported leveled data in percentage format from all eligible students in the grade, including those that were exempt and students who did not provide enough data on the assessment to score. Method 2 is an alternative view of the results. It did not include the results of those that were exempt, or those students who did not provide enough data to score, in the final formulation of the percentages.

This study utilized the results that were reported only in Method 1. This decision was based on the researchers' perception that the results for Method 1 provided a more accurate and complete description of actual student achievement because these results included all eligible Grades three and six students, not just those who participated and achieved at specific levels. The view of the researchers is similarly reflected in the media presentation of the EQAO results. Newspaper reports present the assessment scores only in Method 1 form. The main focus of the study was on the percentage of students in the third and sixth Grades who achieved a level three or higher on the 2002/2003 EQAO assessment in each school in the selected school boards. The achievement of level three or higher indicated that the student was performing at or above the provincial standard for that grade. The percentages of those who achieved at levels one and two, those who performed below the level one standard, and those who did not include enough information to score, were also obtained for analysis.

Included in the EQAO assessment results was the number of students who participated in the assessment in May 2003, in both the third and sixth Grades, for each selected school. These data were used to categorize each selected school as a small, medium, or large school. For the purposes of this study, small schools were defined as having less than 245 students, while the enrolment figure for medium-sized schools was between 246 and 420, and large schools had more than 420 students.

Data Analysis

The EQAO results, represented in percentage form, were arranged in a Microsoft Excel spreadsheet table for each school. Each school table was divided into a Grade three and a Grade six section, and sub-divided by subject; reading, writing, and mathematics. The results were further sorted into six achievement categories—Not Enough Information to Score (NEIS), Not Enough Information to Score a Level One (NE1), followed by Level One, Level Two, Level Three, and Level Four. In addition, the researchers classified each school according to size, that is, small, medium, or large. All of the EQAO results were then aggregated because if a student had achieved a Level 4, then he/she had also logically achieved Levels 1, 2 and 3.

Using the Statistical Package for the Social Sciences, (SPSS), a one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between school size and student academic achievement. The independent variable was school size and the dependent variable was student academic achievement. Variations both within and between each of the groups were analyzed statistically, yielding F-values. The significance level for this procedure was established at the .05 level.

Hypothesis

This study tested the null hypothesis that there would be no statistically significant correlation between school size and academic achievement under the seven categories:

- In Grades three and six;
- At the *Not Enough Information to Score* level in Grades three and six;
- At the *Not Enough Information to Score a Level One* level in Grades three and six;
- At *Level One* in Grades three and six;
- At *Level Two* in Grades three and six;
- At *Level Three* in Grades three and six;
- At *Level Four* in Grades three and six.

Summary of Results and Findings

A one-way analysis of variance was performed and results indicated that there was no statistically significant correlation between school size and academic achievement in Grades three and six. Table 1 summarizes the results.

An ANOVA was performed and results indicated no statistically significant correlation between school size and academic achievement at the *Not Enough Information to Score* level and at the *Not Enough Information to Score a Level One* level in Grades three and six. Tables 2 and 3 summarize the results.

Results shown in Tables 4 and 5 indicated no statistically significant correlation between school size and academic achievement at Level One and at Level Two in Grades three and six.

Results shown in Table 6 indicated no statistically significant correlation between school size and academic achievement at Level Three in Grade three in the areas of reading and math, so a fail-to-reject decision was reached. Results indicated that there was a statistically significant correlation between school size and academic achievement at Level Three in Grade three in the area of writing, so the null hypothesis for this comparison was rejected at the .05 level of significance. Results also indicated that there was a statistically significant correlation between school size and academic achievement at Level Three in Grade six in the areas of reading, writing and math, so the null hypothesis for this comparison was rejected at the .05 level.

Results shown in Table 7 indicated there was no statistically significant difference between school size and academic achievement at Level Four in Grade three in the areas of reading and math, so a fail-to-reject decision was reached. Results indicated that there was a statistically significant correlation between school size and academic achievement at Level Four in Grade three in the area of writing, so the null hypothesis for this comparison was rejected at the .05 level. Results also indi-

Table 1.
Correlation between school size and academic achievement.

		Sum of Squares	df	Mean Square	F	Sig.
AA	Between Groups	.000	2	.000	.000	1.000
	Within Groups	9467.500	3243	2.919		
	Total	9467.500	3245			
3 reading	Between Groups	36.888	2	18.444	.060	.942
	Within Groups	999168.896	3243	308.100		
	Total	999205.784	3245			
3 writing	Between Groups	27.064	2	13.532	.034	.966
	Within Groups	1280284.672	3243	394.784		
	Total	1280311.736	3245			
3 math	Between Groups	16.393	2	8.197	.023	.977
	Within Groups	1159602.596	3243	357.571		
	Total	1159618.990	3245			
6 reading	Between Groups	22.644	2	11.322	.035	.966
	Within Groups	1056323.515	3243	325.724		
	Total	1056346.159	3245			
6 writing	Between Groups	15.787	2	7.894	.024	.977
	Within Groups	1084003.002	3243	334.259		
	Total	1084018.789	3245			
6 math	Between Groups	23.444	2	11.722	.041	.960
	Within Groups	925000.503	3243	285.230		
	Total	925023.947	3245			

Table 2.
Correlation between school size and academic achievement at the not enough information to score level.

		Sum of Squares	df	Mean Square	F	Sig.
3 reading	Between Groups	60.882	2	30.441	.365	.694
	Within Groups	44881.403	538	83.423		
	Total	44942.285	540			
3 writing	Between Groups	18.535	2	9.267	.408	.665
	Within Groups	12222.911	538	22.719		
	Total	12241.445	540			
3 math	Between Groups	144.282	2	72.141	.944	.390
	Within Groups	41107.400	538	76.408		
	Total	41251.682	540			
6 reading	Between Groups	81.173	2	40.587	.947	.388
	Within Groups	23049.374	538	42.843		
	Total	23130.547	540			
6 writing	Between Groups	72.497	2	36.249	1.615	.200
	Within Groups	12075.384	538	22.445		
	Total	12147.882	540			
6 math	Between Groups	7.639	2	3.820	.068	.934
	Within Groups	30326.176	538	56.368		
	Total	30333.815	540			

Table 3.
Correlation between school size and academic achievement at the not enough information to score a level one level.

		Sum of Squares	df	Mean Square	F	Sig.
3 reading	Between Groups	.153	2	.076	1.438	.238
	Within Groups	28.535	538	.053		
	Total	28.688	540			
3 writing	Between Groups	.615	2	.307	1.141	.320
	Within Groups	144.968	538	.269		
	Total	145.582	540			
3 math	Between Groups	.029	2	.015	.214	.808
	Within Groups	36.658	538	.068		
	Total	36.688	540			
6 reading	Between Groups	.048	2	.024	.382	.683
	Within Groups	33.479	538	.062		
	Total	33.527	540			
6 writing	Between Groups	.052	2	.026	.707	.493
	Within Groups	19.881	538	.037		
	Total	19.933	540			
6 math	Between Groups	.021	2	.011	1.148	.318
	Within Groups	4.962	538	.009		
	Total	4.983	540			

cated that there was a statistically significant correlation between school size and academic achievement at Level Four in Grade six in the areas of reading, writing and math, so the null hypothesis for this comparison was rejected at the .05 level.

Table 4.
Correlation between school size and academic achievement at level one in grades three and six.

		Sum of Squares	df	Mean Square	F	Sig.
3 reading	Between Groups	347.350	2	173.675	1.253	.287
	Within Groups	74580.514	538	138.625		
	Total	74927.863	540			
3 writing	Between Groups	206.527	2	103.263	1.568	.209
	Within Groups	35431.473	538	65.858		
	Total	35638.000	540			
3 math	Between Groups	264.452	2	132.226	1.071	.343
	Within Groups	66422.868	538	123.463		
	Total	66687.320	540			
6 reading	Between Groups	8.572	2	4.286	.051	.951
	Within Groups	45455.646	538	84.490		
	Total	45464.218	540			
6 writing	Between Groups	10.043	2	5.021	.078	.925
	Within Groups	34675.772	538	64.453		
	Total	34685.815	540			
6 math	Between Groups	102.333	2	51.166	.562	.570
	Within Groups	48960.421	538	91.005		
	Total	49062.754	540			

Table 5.
Correlation between school size and academic achievement at level two in grades three and six.

		Sum of Squares	df	Mean Square	F	Sig.
3 reading	Between Groups	747.761	2	373.880	1.631	.197
	Within Groups	123360.246	538	229.294		
	Total	124108.007	540			
3 writing	Between Groups	442.804	2	221.402	2.764	.064
	Within Groups	43097.011	538	80.106		
	Total	43539.815	540			
3 math	Between Groups	777.335	2	388.667	1.892	.152
	Within Groups	110510.015	538	205.409		
	Total	111287.349	540			
6 reading	Between Groups	618.479	2	309.239	2.008	.135
	Within Groups	82858.608	538	154.012		
	Total	83477.087	540			
6 writing	Between Groups	281.333	2	140.666	1.495	.225
	Within Groups	50611.407	538	94.073		
	Total	50892.739	540			
6 math	Between Groups	706.352	2	353.176	1.754	.174
	Within Groups	108324.510	538	201.347		
	Total	109030.861	540			

Table 6.
Correlation between school size and academic achievement at level three in grades three and six.

		Sum of Squares	df	Mean Square	F	Sig.
3 reading	Between Groups	1324.853	2	662.427	2.001	.136
	Within Groups	178060.906	538	330.968		
	Total	179385.760	540			
3 writing	Between Groups	4886.709	2	2443.355	9.483	.000
	Within Groups	138617.605	538	257.654		
	Total	143504.314	540			
3 math	Between Groups	1904.918	2	952.459	2.021	.134
	Within Groups	253529.803	538	471.245		
	Total	255434.721	540			
6 reading	Between Groups	3996.820	2	1998.410	6.695	.001
	Within Groups	160597.979	538	298.509		
	Total	164594.799	540			
6 writing	Between Groups	6327.488	2	3163.744	13.083	.000
	Within Groups	130100.675	538	241.823		
	Total	136428.163	540			
6 math	Between Groups	3774.297	2	1887.148	4.714	.009
	Within Groups	215388.653	538	400.351		
	Total	219162.950	540			

Table 7.
Correlation between school size and academic achievement at level four in grades three and six.

		Sum of Squares	df	Mean Square	F	Sig.
3 reading	Between Groups	132.070	2	66.035	1.761	.173
	Within Groups	20168.507	538	37.488		
	Total	20300.577	540			
3 writing	Between Groups	703.032	2	351.516	10.892	.000
	Within Groups	17362.388	538	32.272		
	Total	18065.420	540			
3 math	Between Groups	531.877	2	265.939	1.852	.158
	Within Groups	77236.093	538	143.562		
	Total	77767.970	540			
6 reading	Between Groups	633.355	2	316.677	5.711	.004
	Within Groups	29834.578	538	55.455		
	Total	30467.933	540			
6 writing	Between Groups	831.653	2	415.827	9.245	.000
	Within Groups	24199.023	538	44.980		
	Total	25030.677	540			
6 math	Between Groups	713.910	2	356.955	2.578	.077
	Within Groups	74491.646	538	138.460		
	Total	75205.556	540			

To further investigate the statistical significance of the results where the null hypothesis was rejected, the mean percentage number of students who performed at the various levels for each school size was examined. Table 8 summarizes the results.

Results indicate that the mean percentage number of students who performed at Level 3 was highest in large schools in Grade three writing and in Grade six reading, writing and mathematics. The respective mean percentage number of students who performed at Level 3 was lowest in small schools.

Results also indicate that the mean percentage number of students who performed at Level 4 was highest in large schools in Grade six reading and writing. The mean percentage number of students who performed at Level 4 was highest in medium schools in Grade three writing and in Grade six math. All the respective mean percentage numbers of students who performed at Level 4 was lowest in small schools.

Discussion

Implications of the Findings

The results indicated that overall, there was no statistically significant correlation between school size and academic achievement in Grades three and six. This finding reflects similar conclusions reached by many North American researchers, who had previously determined that a size and achievement relationship did not exist (Barker, & Gump, 1964; Borland, & Howsen, 2003; Caldas, 1993; Edington, & Gardner, 1984; Fowler, 1995; Haller, Monk, & Tien, 1993; Howley, 1996; Huang & Howley, 1993; McGuire, 1989; Smith & DeYoung, 1988; Stockard, & Mayberry, 1992).

The main result of the study echoes the findings of some other Canadian studies which also failed to find statistical evidence of a relationship between school size and academic achievement (Lytton, & Pyryt, 1998; Ma, & Klinger, 2000). Like these previous studies, carried out in the Canadian provinces of Alberta and New Brunswick respectively, the researchers focused on elementary schools in Ontario, and used standardized provincial assessments as a means of determining student academic achievement. This study makes a valuable contribution to the growing body of research in Canada, by offering a look at the size and achievement situation in Ontario. Replication of the study in other Canadian provinces, and possibly in different countries in other parts of the world, could be beneficial in helping educators and government officials make decisions regarding the creation or maintenance of schools, and the appropriate allocation of funding.

Results further indicated that there was no statistically significant correlation between school size and academic achievement at the *Not Enough Information to Score* level or at the *Not Enough Information to Score a Level One* level in Grades three and six. In addition, data analysis revealed no statistical evidence of a relationship at Level One or at Level Two in either Grade. It should be noted that unlike many of the studies reported in the literature which found evidence of a size and achievement relationship (for example, Abbott, Joireman, & Stroh, 2002), this study did not control for the variable of socioeconomic status. Howley (1995) had cautioned that size and achievement should not be studied in isolation, without the consideration of the influential variable of socioeconomic status. Roeder (2002) had also insisted that poverty was the biggest factor in the achievement and size relationship. Having not directly controlled for the socioeconomic variable may have affected the results of this study. Future replication studies are needed to determine if other variables, particularly socioeconomic status, have an impact on the results.

Table 8.
Mean percentage number of students who performed at the various levels for each school size.

Grade	Academic Achievement	Subject	School Size		
			Small	Medium	Large
3	Level 3	Writing	47.65	53.6	54.41
6		Reading	49.82	54.77	56.5
		Writing	45.45	51.43	54.12
		Math	47.25	52.7	52.75
3	Level 4	Writing	4.89	7.38	6.77
6		Reading	6.68	8.5	9.48
		Writing	7.41	8.83	10.9
		Math	9.95	12.48	11.74

Data analysis also found that there was no statistically significant correlation between school size and academic achievement at Level Three in Grade three in the areas of reading and math. There was however, a statistically significant correlation at the .05 level of significance between school size and academic achievement in the area of writing. These results agree with the finding of some researchers that when a relationship between size and achievement is found it is limited in scope (for example, Slate, & Jones, 2005). Unlike Okpala (2000), who found a relationship in reading alone at a fourth grade level, this study found a correlation only in writing. This finding was also obtained in the Grade three results at Level Four, where writing was the only area in which a statistically significant correlation was observed.

In reviewing the EQAO assessment package to determine what made the writing section unique from that of reading and mathematics, the researchers found one noteworthy difference. Writing was the only section of the assessment that did not contain a multiple-choice component. The student was ultimately assessed entirely on individual output, without the possibility of increasing his/her achievement score solely on the basis of possible successful guesswork. It could, therefore, be concluded that the writing section was the most valid part of the assessment.

The most significant results were observed at Levels Three and Four in Grade six. There was a statistically significant correlation between school size and academic achievement in all areas of the assessment; reading, writing and mathematics. The finding of a consistent correlation at the higher of the two Grade levels was not surprising after the literature review. In previous studies, higher grades were more likely to reveal a statistically significant correlation between student achievement and school size (Howley, 1989). Howley had concluded that school size played a greater role in achievement as students aged.

Reflecting on the immense fundamental differences between Grades three and six, it is not surprising to find disparity in the results. Third graders are still learning the basic components of reading, writing and mathematics. The Grade three curriculum is focused on the mastery of an essential foundation of knowledge, often seen as the basic building blocks of learning. In contrast, sixth graders are expected to have already built such a foundation, and are more focused on utilizing higher level thinking skills to manipulate new knowledge. Education past the primary level becomes more individualized and specialized, allowing students in the junior division to have more freedom and control over their educational experience.

Developmental differences, both physical and psychological, may also account for the different assessment outcomes in Grades three and six. Students in the two respective Grades,

with an approximate three-year chronological age gap, have undoubtedly unique capabilities and characteristics. For example, according to the renowned developmental psychologist, Jean Piaget, third graders would be in the Concrete Operational stage, during which they learn to think logically in concrete situations. Conversely, sixth graders would more likely be in the Formal Operational stage, where they are able to think logically in abstract situations and are more interested in the world of ideas (Wood, Wood, Green Wood & Desmarais, 2005). In addition, unlike their third Grade counterparts, the EQAO assessment is not a new experience for sixth graders. The older students have had the advantage of previously participating in the EQAO assessment when they were in Grade three. This previous experience of what to expect regarding the assessment, both in terms of procedures and format, could be considered advantageous.

In conjunction with the definitions used in this study, medium schools consisted of between 246 and 420 students, and large schools consisted of an enrolment of more than 420 students. When comparing these parameters with those of previous studies, the difference is notable. Throughout the literature, researchers who had found a relationship between school size and academic achievement, particularly those who found a correlation between small schools and higher achievement levels, had recommended an optimal enrolment of around 300 students (Goodlad, 1983; Meier, 1996; Sergiovanni, 1995). This specific level of enrolment coincides with this study's definition of a medium-sized school. Upon closer inspection, the finding that students who attended schools of this size achieved highest in Grade three writing and Grade six math at Level 4, is not surprising. It seems, therefore, that it is not the findings that are contradictory, but rather the conflict lies with the school size parameters as defined by individual researchers.

These results, and the review of the literature, have also raised some questions concerning the current initiatives promoting small schools. With such disparity in the findings, the investment of large amounts of money in small school projects becomes a questionable venture. Does the scientific evidence actually support the establishment of such expensive initiatives? Certainly the results of this study, as well as many others, indicate that not enough is currently known about the size and achievement relationship to make critical decisions for educational reform. Howley (1995) had cautioned that some small school advocates were misrepresenting or misinterpreting research findings as a means of furthering their own agenda. With such ambiguity in the literature, advocation for schools of a specific size, based primarily on the achievement and size relationship, should be cautioned. With activist groups, like the *People for Education*, campaigning for the maintenance of small schools throughout Ontario, it is clear that more research is needed so that fully informed decisions can be made.

Limitations

This study relied on data provided by a province-wide assessment given to students in the third and sixth grades throughout Ontario, as a measurement of student academic achievement. Despite strict guidelines provided for the administration of the assessment and mandated adherence to the policies, procedures, and instructions given, there may have been deliberate or unintended effects of individual administrators on the students.

The EQAO assessment is considered to be valid because it is based on The Ontario Curriculum, Grades 1 - 8. In practice, however, the content validity of the test is questionable. Educators throughout Ontario are encouraged to adopt a constructivist philosophy to teaching. Constructivism is based on the tenet of creating educational experiences in which the students can construct their own meaning. It is a learn-by-doing approach. The questions in the EQAO assessment do not reflect this philosophy. This contrast between how the students learn, and ultimately how they are assessed, is obvious in mathematics. The routine use of manipulatives in learning math is a standard practice in Ontario classrooms. Students constructively use the manipulatives to facilitate the learning of math. However, on the 2002/03 EQAO assessment, there was only one question which demanded the use of manipulatives. If standard classroom teaching practices are not reflected in the assessment, the content validity must be questioned.

Additionally, the EQAO assessment, like all tests, can only be considered a snapshot of an individual student's academic achievement level. There are many variables that could affect a student's performance during the five days of the assessment which would limit the reliability of the results. These variables could include illness, fatigue, and environmental factors.

Canada prides itself on being a multicultural country. The student communities within many Ontario schools reflect the wide diversity of the Canadian population. There needs to be more research into whether the EQAO assessment accurately reflects the interests of all Ontario students and their various cultural backgrounds.

The researchers also could not control for full participation in the EQAO assessment within each school. All third grade and sixth grade students were mandated by the Ontario provincial government to participate in the 2002/2003 assessment. Exemptions from the assessment were only granted students who were in the *Individual Education Plan*, or *English as a Second Language* students who were in the early stages of English Language acquisition. Some parents disagreed with the administration of the assessment and withheld their children from school during the testing period. Therefore, the EQAO test scores may not have been accurate reflections of all academic achievement levels within a given class.

The suppression of some of the individual school assessment results by the Education Quality and Accountability Office also limits the conclusions drawn from this study. With the mandate for suppression being an enrolment of fewer than 15 students in the class, this directly affected the small school achievement results. Classes with such a small enrolment would have been included in the small school category, if the results had been available.

Suggestions and Recommendations

Based on the findings of the study, the researchers make the following recommendations:

1) Additional studies are needed to investigate the relationship between school size and academic achievement at the elementary school level;

2) Replication studies, in which the socioeconomic status variable is controlled, are needed to provide more information on the size and achievement relationship. Future research studies should focus specifically on smaller schools with the goal of finding more information within this variable, including optimal enrollment and if extreme smallness could be considered detrimental;

3) School board officials, educators, government officials, and policy makers who are in the position to make decisions

regarding the sizes of schools in their districts should be fully informed with regard to the entire body of research on the relationship between school size and academic achievement;

4) The Education Quality and Accountability Office should consider developing a rotational schedule, in which a limited number of proctors would administer the EQAO assessment throughout the province, in the hope of improving the reliability of the assessment;

5) Future research by the Education Quality and Accountability Office should be done to ensure that there is no cultural bias in the assessment, and that the interests of the entire Ontario student body are reflected in the test;

6) The Education Quality and Accountability Office should ensure that the EQAO assessment accurately reflects standard classroom practices and expectations in Ontario schools so as to increase the content validity of the assessment;

In conclusion, this study indicates that the relationship between school size and academic achievement is limited. Evidence of a relationship is more likely to be found at the higher grade levels, as shown in both the literature and in the study. These results should be read with caution, with particular attention paid to how a researcher defines school sizes. Additional studies in which other variables that may influence the size and achievement relationship are also needed. Finally, until the literature becomes less ambiguous, advocation for elementary schools of a certain size should face critical and thorough analysis before any major change-advocating action is taken.

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Small School By Necessidy Funding
Impact of Closing Ministik School

ELK ISLAND PUBLIC SCHOOLS 2015-2016	Small School By Necessity (SSBN) Funding[1]	Small School (SS) Allocation
Andrew School	290,483	348,580
Mundare School	177,195	212,634
École Parc Élémentaire	58,563	70,276
Ministik Elementary	161,371	193,645
Bruderheim School	128,894	154,673
Uncas Elementary	42,108	50,529
	858,614	1,030,337

[1]= 5/6 * 1,030,337

5 schools are SSBN
6 schools are SS

2015-2016 SSBN Funding[4] 858,614

Excludes Ministik Elementary from Calculation

	Small School By Necessity (SSBN) Funding	Small School Allocation
Andrew School	348,580	348,580
Mundare School	212,634	212,634
École Parc Élémentaire	70,276	70,276
Bruderheim School	154,673	154,673
Uncas Elementary	50,529	50,529
	836,692	836,692
5 schools are SSBN 5 schools are SS	= 5/5	
	(21,922)	

[4] Excludes the phasing out of CCH over 5 years which was a SSBN.

ELK ISLAND PUBLIC SCHOOLS 2016-2017 (budget)	Small School By Necessity (SSBN) Funding[2]	Small School (SS) Allocation
Andrew School	241,841	362,762
Mundare School	143,181	214,772
École Parc Élémentaire	15,101	22,651
Ministik Elementary	116,141	174,212
Bruderheim School[3]	128,558	192,837
Uncas Elementary	35,622	53,433
	680,445	1,020,667

[2]= 4/6 * 1,020,667

4 schools are SSBN[3]
6 schools are SS

2016-2017 SSBN Funding[4] 680,445

Excludes Ministik Elementary from Calculation

	Small School By Necessity (SSBN) Funding	Small School Allocation
Andrew School	290,210	362,762
Mundare School	171,818	214,772
École Parc Élémentaire	18,121	22,651
Bruderheim School	154,270	192,837
Uncas Elementary	42,746	53,433
	677,164	846,455
4 schools are SSBN 5 schools are SS	= 4/5	
	(3,281)	

[3] Bruderheim deemed not to be a SSBN in 2016-2017 as LME will have capacity

EIPS Actual 14/15 School Costs

	M2	Custodial	Main	Elec	Gas	Water	Garbage	Total POM	Cost per M2/mo	OH Recovery Charge 5%
SECTOR 5										
A. L. Horton	4,063.46	99,057.97	68,638.40	31,225.85	22,544.91	2,265.07	768.00	**224,500.20**	**$4.60**	
Vegreville Composite High	9,985.20	173,711.13	85,848.71	91,699.21	42,324.43	6,021.85	1,131.53	**400,736.86**	**$3.34**	
TOTAL	14,048.66	**272,769.10**	**154,487.11**	**122,925.06**	**64,869.34**	**8,286.92**	**1,899.53**	**625,237.06**	**$3.71**	**$3.90**
SECTOR 4										
Andrew	3,556.00	72,855.23	46,130.21	38,379.57	20,573.67	9,112.52	1,112.43	**188,163.63**	**$4.41**	
Bruderheim	2,462.60	64,883.16	51,770.69	16,949.01	12,573.69	6,584.20	1,982.18	**154,742.93**	**$5.24**	
Lamont Elementary	3,848.40	80,888.35	55,079.59	30,948.86	27,991.16	4,396.18	3,068.28	**202,372.42**	**$4.38**	
Lamont High School	4,198.50	90,685.78	91,263.94	32,087.85	24,082.73	19,370.18	4,088.94	**261,579.42**	**$5.19**	
Mundare School	3,496.24	69,194.40	57,754.00	41,538.68	20,250.47	4,250.93	3,640.61	**196,629.09**	**$4.69**	
TOTAL	17,561.74	**378,506.92**	**301,998.43**	**159,903.97**	**105,471.72**	**43,714.01**	**13,892.44**	**1,003,487.49**	**$4.76**	**$4.98**
SECTOR 3										
Fort Saskatchewan Elem/Christ	7,110.16	139,711.34	64,698.73	53,565.06	20,649.42	8,588.50	5,521.49	**292,734.54**	**$3.43**	
Fort Saskatchewan Jr High	3,569.81	82,082.99	36,946.46	23,774.30	22,087.62	3,417.31	2,623.66	**170,932.34**	**$3.99**	
Fort Saskatchewan Sr High	7,142.63	152,806.96	84,198.16	48,661.75	45,234.66	6,864.38	3,041.01	**340,806.92**	**$3.98**	
James Mowat Elementary	3,252.44	74,496.59	47,667.16	22,516.95	14,001.48	3,326.84	2,777.72	**164,786.74**	**$4.22**	
Rudolph Hennig Elem/Jr High	5,395.64	110,584.95	62,977.84	35,925.04	24,557.71	4,952.78	2,760.75	**241,759.07**	**$3.73**	
Win Ferguson Elementary	3,799.16	81,642.74	47,992.58	24,462.15	19,339.67	4,465.74	2,791.51	**180,694.39**	**$3.96**	
TOTAL	30,269.84	**641,325.57**	**344,480.93**	**208,905.25**	**145,870.56**	**31,615.55**	**19,516.14**	**1,391,714.00**	**$3.83**	**$3.85**
SECTOR 2										
Ardrossan Elementary	6,495.60	154,571.16	61,080.91	34,766.83	32,216.95		2,453.83	**285,089.68**	**$3.66**	
Ardrossan Jr/Sr High	10,313.07	211,484.30	128,880.58	93,620.96	80,386.15	21,436.95	4,189.36	**539,998.30**	**$4.36**	
Colchester	2,549.00		30,303.79	4,582.67	15,731.25	240.00		**50,857.71**	**$1.66**	
Fultonvale Elem/Jr High	5,152.49	123,303.02	61,190.31	38,212.39	30,223.18	28,523.61	2,039.87	**283,492.38**	**$4.59**	
Ministik Elementary	**1,245.98**	**34,643.57**	**32,929.04**	**13,250.43**	**8,939.74**	**6,405.00**	**580.85**	**96,748.63**	**$6.47**	
Uncas Elementary	3,447.60	71,311.37	46,893.14	20,935.59	13,897.23	1,793.69	1,036.43	**155,867.45**	**$3.77**	
Wye Elementary	3,645.32	77,575.81	47,116.54	20,388.05	21,248.62	14,025.00	1,036.43	**181,390.45**	**$4.15**	
TOTAL	32,849.06	**672,889.23**	**408,394.31**	**225,756.92**	**202,643.12**	**72,424.25**	**11,336.77**	**1,593,444.60**	**$4.04**	**$4.25**
SECTOR 1										
Bev Facey Community High	17,282.50	297,960.61	161,991.44	159,104.58	79,264.85	22,060.42	5,248.58	**725,630.48**	**$3.50**	
Brentwood Elementary	4,089.63	85,065.88	52,802.20	27,389.75	17,388.25	7,856.58	1,642.38	**192,145.04**	**$3.92**	
Campbelltown Elementary	3,646.92	76,306.17	48,955.43	23,617.97	24,397.06	8,020.11	1,389.84	**182,686.58**	**$4.17**	
Clover Bar Junior High	5,356.38	108,713.79	59,230.87	38,787.65	20,032.87	4,434.79	1,671.20	**232,871.17**	**$3.62**	
F. R. Haythorne Junior High	6,804.81	141,644.66	106,906.90	63,315.01	34,900.17	6,799.64	2,922.15	**356,488.53**	**$4.37**	
Glen Allan Elementary	3,935.13	82,716.83	35,253.90	21,416.80	20,379.34	7,725.17	1,455.84	**168,947.88**	**$3.58**	
Lakeland Ridge	7,737.96	131,760.41	31,022.42	121,667.57	58,736.11	2,700.95	876.29	**346,763.75**	**$3.73**	
Mills Haven Elementary	3,512.00	79,066.77	45,418.88	19,522.63	18,819.34	7,290.72	1,423.92	**171,542.26**	**$4.07**	
Pine Street Elementary	3,437.58	79,240.01	56,950.98	24,285.63	17,516.79	3,831.36	1,036.43	**182,861.20**	**$4.43**	
Salisbury Composite High	19,357.79	351,814.89	161,097.41	179,753.66	103,161.08	16,212.41	5,129.44	**817,168.89**	**$3.52**	
Sherwood Heights Jr High	6,428.48	124,651.29	79,722.22	35,678.89	31,399.38	4,425.38	2,166.85	**278,044.01**	**$3.60**	
Wes Hosford Elementary	3,619.67	74,731.18	58,878.41	26,273.17	19,711.97	7,425.63	834.81	**187,855.17**	**$4.32**	
Westboro Elementary	3,558.25	81,797.77	55,946.41	21,193.79	18,783.34	10,981.37	1,036.43	**189,739.11**	**$4.44**	
Woodbridge Elementary	3,562.60	75,716.40	36,635.90	22,723.32	13,027.35	5,900.03	625.87	**154,628.87**	**$3.62**	
TOTAL	92,329.70	**1,791,186.66**	**990,813.37**	**784,730.42**	**477,517.90**	**115,664.56**	**27,460.03**	**4,187,372.94**	**$3.78**	**$3.97**
EIPS DISTRICT TOTALS	**187,059.00**	**3,756,677.48**	**2,200,174.15**	**1,502,221.62**	**996,372.64**	**271,705.29**	**74,104.91**	**8,801,256.09**	**$3.92**	**$4.11**

EIPS Actual 15/16 School Costs

	M2	Custodial	Main	Elec	Gas	Water	Garbage	Total POM	Cost per M2/mo	OH Recovery Charge 5%
SECTOR 5										
A. L. Horton	4,063.46	99,057.97	52,405.92	31,351.31	13,088.89	4,133.79	1,084.96	**201,122.84**	**$4.12**	
Vegreville Composite High	9,985.20	173,711.13	106,677.93	90,198.47	32,543.97	7,331.90	1,708.25	**412,171.65**	**$3.44**	
TOTAL	14,048.66	**272,769.10**	**159,083.85**	**121,549.78**	**45,632.86**	**11,465.69**	**2,793.21**	**613,294.49**	**$3.64**	**$3.83**
SECTOR 4										
Andrew	3,556.00	72,855.23	96,942.51	36,869.56	12,553.96	8,977.40	1,701.56	**229,900.22**	**$5.39**	
Bruderheim	2,462.60	64,883.16	35,846.25	22,822.96	9,981.98	5,215.70	2,105.09	**140,855.14**	**$4.77**	
Lamont Elementary	3,848.40	80,888.35	47,758.65	45,414.83	18,647.74	3,550.86	3,249.09	**199,509.52**	**$4.32**	
Lamont High School	4,198.50	90,685.78	77,340.22	36,806.25	17,027.64	18,860.70	4,088.94	**244,809.53**	**$4.86**	
Mundare School	3,496.24	69,194.40	33,174.29	23,149.88	12,714.52	4,068.47	4,148.25	**146,449.81**	**$3.49**	
TOTAL	17,561.74	**378,506.92**	**291,061.92**	**165,063.48**	**70,925.84**	**40,673.13**	**15,292.93**	**961,524.22**	**$4.56**	**$4.78**
SECTOR 3										
Ecole Parc Elementaire	3,569.81	80,215.48	36,149.57	23,259.46	13,741.59	4,750.80	2,679.84	**160,796.74**	**$3.75**	
Fort Saskatchewan	7,779.04	149,222.26	65,923.94	55,926.70	19,855.05	9,417.94	7,526.28	**307,872.17**	**$3.30**	
Fort Saskatchewan Sr High	7,142.63	150,071.63	98,249.78	49,297.48	32,431.56	8,172.53	4,103.16	**342,326.14**	**$3.99**	
James Mowat Elementary	3,252.44	73,073.89	43,256.34	20,451.29	9,437.31	3,546.93	3,835.08	**153,600.84**	**$3.94**	
Rudolph Hennig Jr High	5,395.64	107,448.40	53,026.67	37,448.53	18,292.20	5,673.07	3,835.08	**225,723.95**	**$3.49**	
Win Ferguson Elementary	3,910.64	81,159.65	52,064.07	24,965.28	12,576.32	5,496.59	3,835.08	**180,096.99**	**$3.84**	
TOTAL	31,050.20	**641,191.30**	**348,670.37**	**211,348.74**	**106,334.03**	**37,057.86**	**25,814.52**	**1,370,416.82**	**$3.68**	**$3.70**
SECTOR 2										
Ardrossan Elementary	6,495.60	93,559.12	54,220.48	31,328.82	10,381.22		3,566.60	**193,056.24**	**$2.48**	
Ardrossan Jr/Sr High	10,313.07	211,484.30	121,262.71	87,987.01	45,419.57	16,064.38	7,814.51	**490,032.48**	**$3.96**	
Colchester	2,549.00	-	16,705.29	3,905.65	1,777.88			**22,388.82**	**$0.73**	
Fultonvale Elem/Jr High	5,754.47	123,303.02	51,571.51	39,741.18	18,633.62	18,837.64	3,578.33	**255,665.30**	**$3.70**	
Ministik Elementary	**1,245.98**	**38,707.57**	**28,077.26**	**14,875.58**	**4,662.32**	**4,550.00**	**794.18**	**91,666.91**	**$6.13**	
Uncas Elementary	3,447.60	71,311.37	24,609.58	19,553.43	8,816.91	2,038.05	1,796.78	**128,126.12**	**$3.10**	
Wye Elementary	3,756.80	77,575.81	43,713.81	21,848.18	13,177.89	14,846.70	1,981.63	**173,144.02**	**$3.84**	
TOTAL	33,562.52	**615,941.19**	**340,160.64**	**219,239.85**	**102,869.41**	**56,336.77**	**19,532.03**	**1,354,079.89**	**$3.36**	**$3.57**
SECTOR 1										
Bev Facey Community High	17,282.50	297,960.61	181,481.79	144,898.88	45,277.85	20,094.87	8,966.76	**698,680.76**	**$3.37**	
Brentwood Elementary	4,089.63	85,065.88	62,451.80	33,473.53	10,337.38	8,565.45	2,737.58	**202,631.62**	**$4.13**	
Clover Bar Junior High	5,356.38	108,713.79	50,546.17	38,674.95	11,447.36	4,945.21	2,591.48	**216,918.96**	**$3.37**	
Ecole Campbelltown	3,646.92	76,306.17	62,740.63	22,187.56	14,892.27	10,095.61	2,214.38	**188,436.62**	**$4.31**	
F. R. Haythorne Junior High	6,804.81	141,644.66	82,497.11	60,854.80	21,698.65	7,881.92	4,443.73	**319,020.87**	**$3.91**	
Glen Allan Elementary	3,935.13	82,716.83	54,118.75	19,938.03	12,482.23	9,389.27	2,223.58	**180,868.69**	**$3.83**	
Lakeland Ridge	7,737.96	131,760.41	25,558.65	112,029.14	32,124.24	5,377.24	1,607.73	**308,457.41**	**$3.32**	
Mills Haven Elementary	3,512.00	79,066.77	43,781.17	19,381.45	11,644.69	7,001.12	2,137.72	**163,012.92**	**$3.87**	
Pine Street Elementary	3,660.54	82,977.86	50,283.74	23,138.19	11,553.06	4,599.59	1,796.78	**174,349.22**	**$3.97**	
Salisbury Composite High	19,357.79	351,814.89	232,046.04	171,213.89	53,506.06	24,997.32	8,289.12	**841,867.32**	**$3.62**	
Sherwood Heights Jr High	6,428.48	124,651.29	69,759.30	35,954.73	18,888.70	5,274.23	4,443.73	**258,971.98**	**$3.36**	
Wes Hosford Elementary	3,842.63	77,253.42	47,725.72	26,831.77	12,501.64	5,608.35	2,367.57	**172,288.47**	**$3.74**	
Westboro Elementary	3,558.25	81,797.77	40,682.87	21,386.73	11,582.48	13,835.29	1,896.13	**171,181.27**	**$4.01**	
Woodbridge Farms	3,562.60	75,716.40	45,548.46	24,623.87	6,430.06	6,113.46	1,635.02	**160,067.27**	**$3.74**	
TOTAL	**92,775.62**	**1,797,446.76**	**1,049,222.20**	**754,587.52**	**274,366.67**	**133,778.93**	**47,351.31**	**4,056,753.39**	**$3.64**	**$3.83**
EIPS DISTRICT TOTALS	**188,998.74**	**3,705,855.27**	**2,188,198.98**	**1,471,789.37**	**600,128.81**	**279,312.38**	**110,784.00**	**8,356,068.81**	**$3.68**	**$3.87**

2015 New natural gas utility contract was negotiated for reduced costs

RH Services Inc.

WATER DAMAGE AND MOULD ASSESSMENT
PORTABLE CLASSROOMS FS-110 & FS-111
MINISTIK SCHOOL

Submitted to:
Elk Island Public Schools
683 Wye Road
Sherwood Park, AB. T8B 1N2

Submitted by:
RH Services Inc.
7340-82 Avenue, NW.
Edmonton, AB. T6B 0G2

October 2016

EIPS.85

www.rhservices.ca

EXECUTIVE SUMMARY

RH Services Inc. was retained by Elk Island Public Schools, to conduct a water damage and mould assessment of two portable classrooms (FS-110 & FS-111) located at Ministik School in the County of Strathcona, Alberta.

The purpose of this assessment was to determine the extent of water damage and mould amplification within the structure.

The assessment was undertaken on Friday, October 7th 2016. At this time a visual inspection was undertaken of the classrooms and the exterior of the portables. The roof and crawlspace were not accessed.

Samples of suspected mould growth were collected for confirmation by optical microscopy. A moisture meter was used to locate and delineate areas of water damage and potential mould amplification. The findings of our investigation and sampling are presented in this report with recommendations on required or suggested actions.

The portable classrooms in question were FS-110 & FS-111, an older style, wood frame construction with corrugated metal siding and a flat roof.

The presence of mould was confirmed in some of the building components, although the concentration of viable mould in the air was within the Health Canada Guidelines.

The portable was well past its' service life[1].

1. *It should be noted that the life expectancy of a portable classroom that is well located and maintained is in the area of twenty years. (Atco Structures and Logistics)*

TABLE OF CONTENTS

1.0 INTRODUCTION

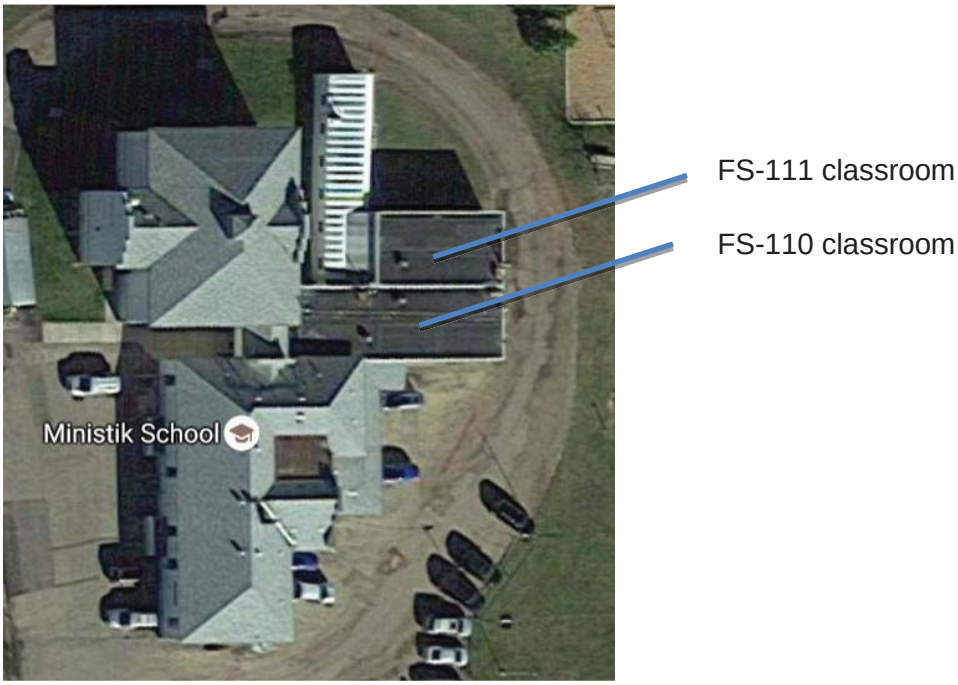
An assessment of the portable classrooms (FS-110 & 111) at Ministik School was undertaken by RH Services Inc. on Friday, October 7th 2016. This report is in conjunction with an earlier RH Services report EIPS 88, regarding mould and water damage issues in August 2016.

Visual inspections were conducted within the portables and of the exterior. The roof and crawlspace were not accessed at this time.

Walls and ceilings were opened in representative areas to examine the conditions and to collect samples of suspected mould growth, for confirmation by optical microscopy. A moisture meter was used to confirm if excess moisture was present in these areas.

1.1 BACKGROUND

The two portable classrooms were located along the east side of the school. See the Arial view below.



The Trailers' had surpassed the end of their service life expectancy of twenty years.

Concerns about the potential for mould amplification were investigated by RH Services Inc.

2.0 SCOPE OF WORK

The following services were provided by RH Services Inc.:

- Site inspection;
- Visual assessment;
- Moisture content measurement;
- Intrusive investigation inside walls and ceilings;
- Report production, documenting observations and suggesting actions.

3.0 SITE INSPECTION

RH Services Inc. undertook the site inspection on Friday, October 7th 2016, at this time the school was not occupied.

Bulk mould sample results can be reviewed in the RH Services Mould Identification Report # 4447. Viable Airborne mould results can be reviewed in the RH Services Viable Mould Count Analysis Report # 8868; both found in Appendix A.

Exterior Observations

The exterior drainage and the general exterior condition of the structure was investigated. Our findings are as follows:

The drainage along the south wall of F-110 and the east walls of F-110 and F-111 was generally good. Water was pooling in depressions near the bottom of the structures.

Sink holes were present along the north side of F-111 enabling water and animals to enter the crawlspace.

The wooden posts used to support the skirting around the portables were rotten.

Rotten plywood was evident under the north emergency exit stairs.

Crawlspace

The crawlspace underneath the portables was not accessed at this time.

Interior Observations

Portable Classroom F-110

The interior of the classroom consisted of drywall walls, sheet flooring and 2' by 4' suspended mineral ceilings tiles. Above the suspended tiles were the original ceiling panels with plastic strips.

Overview of classroom FS-110 looking east.

Moisture readings around the east window and all accessible walls were <10% moisture, acceptable.

The rubber baseboard was removed from the southeast corner of the classroom.

Mould growth was evident on drywall paper *Stachybotrys* sp. Sample #1.

Specifics

Ceilings: The ceiling of the portable classroom was a 2'x4' suspended ceiling tiles. The original cellulose panels with plastic joint strips were in place above the suspended ceiling and had partially collapsed in places, but no evidence of water infiltration was observed.

Walls: The classroom walls were drywall; the accessible drywall along the east and south walls were dry, but mould growth was confirmed in the southeast corner. In addition, a cold draft was evident coming from along the bottom of the exterior walls.

Floors: The classroom floors looked to be in good condition (sheet flooring).

Portable Classroom F-111

The interior of the classroom consisted of drywall walls, sheet flooring and 2' by 4' suspended mineral ceilings tiles. Above the suspended tiles were the original ceiling panels with plastic strips.

Overview of classroom FS-111 looking east.

. Moisture readings around the east window and all accessible walls were <10% moisture, acceptable.

Localized water damage was noticed under the window on the east wall. The drywall was dry <10% (acceptable),

The paper was pulled back and some darker staining was evident on the paper.

The rubber baseboard was removed from the northeast corner of the classroom. Mould growth was identified on the drywall paper ***Chaetomium sp.,*** Sample #2

Water staining was noticed on the floor tiles and along the bottom of the air intake cabinetry.

4.0 AIR SAMPLE RESULTS

Air samples were collected from classrooms FS-110 & 111 using a Reuter Centrifugal Sampler (RCS) the sample was impacted onto a Rose Bengal Agar growth medium. The sample was cultured then examined by optical microscopy to determine the number of colonies per cubic metre and the genus of the mould growth. This was compared to an exterior control sample and the Health Canada Guidelines.

The interior samples were found to be reflective of the exterior (predominantly *Cladosporium* spp.) and at a lower concentration. This would classify as acceptable and was within Health Canada Guidelines.

5.0 SUGGESTED ACTIONS

The suggested actions would be the same as those presented in an earlier RH Services report: # **EIPS.88.** The suggested actions are as follows:

Although the air samples that were collected on August 25th and October 7th are acceptable, conditions observed were such that blooms of mould can be anticipated during certain conditions, this is difficult to predict and measured mould results can vary drastically. We suggest that planning for replacement of the portable classrooms and links be initiated. We further suggest that for continued operation of the portables air testing be conducted at least each term. A contingency for the installation of HEPA air cleaners should be on hand should elevated mould concentrations be encountered.

It has to be remembered when reading these recommendations that we are not privy to information regarding the demographics and long and/or short term needs of the community. From our position the recommendations are based on the logistics and value of the buildings as they currently stand. They may not reflect the effects, inconveniences and expenses that will be incurred to facilitate the staff, scholars and the community in general.

We believe that further investment in the portable is ill-conceived and from our past experiences with remediation of portables it should be considered highly likely that the extent of rot and mould will be significantly beyond what is anticipated.

It should be noted that the life expectancy of a portable classroom that is well located and maintained is in the area of twenty years. (Atco Structures and Logistics)

6.0 CLOSURE

We trust that the information in this report meets your present requirements. If you have any questions or require further explanation, please contact the undersigned at your convenience. We look forward to working with you in the future.

Yours truly,

RH Services Inc.

Mike Roberts

Reviewed by:

Kevin Simpson
Senior Consultant

RH Services Inc.

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Viable Mould Count Analysis

Elk Island Public Schools
683 Wye Road
Sherwood Park, AB
T8B 1N2

Job # 8868 EIPS.85
Date: October 12th 2016
Ref:

Ministik School

Sample number	Location of sample	Time	Volume Litres	Genus	Raw Count	CFU/M^3
01	Exterior Control	Oct. 7th 2016 10:02-10:02	80	*Cladosporium* spp. *Penicillium* sp. Yeast **Total**	83 1 7 91	1,038 13 88 **1,139**
02	FS-110	Oct. 7th 2016 08:46-08:50	160	*Cladosporium* spp. **Total**	4 4	25 **25**
03	FS-111	Oct. 7th 2016 08:51-08:55	160	*Cladosporium* spp. **Total**	2 2	13 **13**

NOTES:
Media will be kept for 10 days only.
Collection Media: Rose Bengal Agar in RCS sample
Sterile Hyphae: Means filamentous mould growth without conidia or fruiting bodies, therefore not identifiable.

Sample Interpretation:
- Red highlight indicates concentrations in excess of Health Canada Guidelines
- Blue highlight indicates concentrations of interest
- Green highlight indicate exterior samples

NG: means no mould growth after incubation period

Analysis by:

Rowen Gork NCSO.

RH Services Inc.

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Edmonton, AB.

Viable Mould Count Analysis

Elk Island Public Schools
683 Wye Road
Sherwood Park, AB
T8B 1N2

Job # 8890 EIPS.88.2
Date: January 11th 2017
Ref:

Ministik School

Sample number	Location of sample	Time	Volume Litres	Genus	Raw Count	CFU/M^3
01	Exterior Control -6^{0}C light snow	Jan.5th 2017 14:35-14:37	80	*Cladosporium* spp. *Penicillium sp.* **Total**	1 1 2	13 13 **26**
02	FS 109	Jan.5th 2017 14:05-14:09	160	Yeast **Total**	1 1	6 **6**
03	FS 110	Jan.5th 2017 14:10-14:14	160	*Cladosporium* spp. **Total**	1 1	6 **6**
04	FS 111	Jan.5th 2017 14:16-14:20	160	NG **Total**	<1 <1	<6 **<6**
05	FS 115 Library North end	Jan.5th 2017 14:21-14:25	160	NG **Total**	<1 <1	<6 **<6**

Sample number	Location of sample	Time	Volume Litres	Genus	Raw Count	CFU/M^3
06	FS 115 Library South end	Jan.5th 2017 14:25-14:29	160	*Cladosporium* spp. **Total**	1 1	6 **6**

NOTES:
Media will be kept for 10 days only.
Collection Media: Rose Bengal Agar in RCS sample
Sterile Hyphae: Means filamentous mould growth without conidia or fruiting bodies, therefore not identifiable.

Sample Interpretation:
- Red highlight indicates concentrations in excess of Health Canada Guidelines
- Blue highlight indicates concentrations of interest
- Green highlight indicate exterior samples

NG: means no mould growth after incubation period

Analysis by:

Rod Hall RET, CRSP, ROHT.

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Field Office
7340-82 Avenue,
Edmonton, AB.

Mould Identification

Client: Elk Island Public Schools
683 Wye Road
Sherwood Park, Alberta.
T8B 1N2

Job#: 4447 EIPS.85
Date: October 12th 2016

Ministik School

Sample number	Description, location of sample	Type of Sample	Genus of Mould	Loading
01	East exterior wall Classroom FS-110	Bulk	*Stachybotrys* sp.	Moderate
02	East exterior wall Classroom FS-111	Bulk	*Chaetomium* sp.	Heavy

Legend:
NG= No growth, means no evidence of mould growth observed
Sample interpretations:
Analysis using optical microscopy, loading subjectively described as heavy, moderate or light.

Analysis by:

Rowen Gork NCSO.

RH Services Inc.

WATER DAMAGE AND MOULD ASSESSMENT
PORTABLE CLASSROOM FS 109
MINISTIK SCHOOL

Submitted to:
Elk Island Public Schools
683 Wye Road
Sherwood Park, AB. T8B 1N2

Submitted by:
RH Services Inc.
7340-82 Avenue, NW.
Edmonton, AB. T6B 0G2

August 2016

EIPS.88

www.rhservices.ca

EXECUTIVE SUMMARY

RH Services Inc. was retained by Elk Island Public Schools, to conduct a water damage and mould assessment of the old portable classroom (FS-109) located at Ministik School in the county of Strathcona, Alberta.

The purpose of this assessment was to determine the extent of water damage and mould amplification within the structure. The portable was abutted the gymnasium to the northwest and was joined to the original 1951 building and connected to two other portables.

The initial assessment was undertaken on Thursday, August 25th 2016. At this time a visual inspection was undertaken of the classroom and the exterior of the portable. The roof and crawlspace were not accessed.

Samples of suspected mould growth were collected for confirmation by optical microscopy. An Infrared camera and moisture meter were used to locate and delineate areas of water damage and potential mould amplification. The findings of our investigation and sampling are presented in this report with recommendations on required or suggested actions.

The portable in question FS-109, was an older style ATCO trailer, wood frame construction with corrugated steel siding aluminium sliding window and a flat roof.

The presence of mould was confirmed in some of the building components, although the concentration of viable mould in the air was within the Health Canada Guidelines.

The portable was well past its' service life[1].

1. *It should be noted that the life expectancy of a portable classroom that is well located and maintained is in the area of twenty years. (Atco Structures and Logistics)*

TABLE OF CONTENTS

1.0 INTRODUCTION

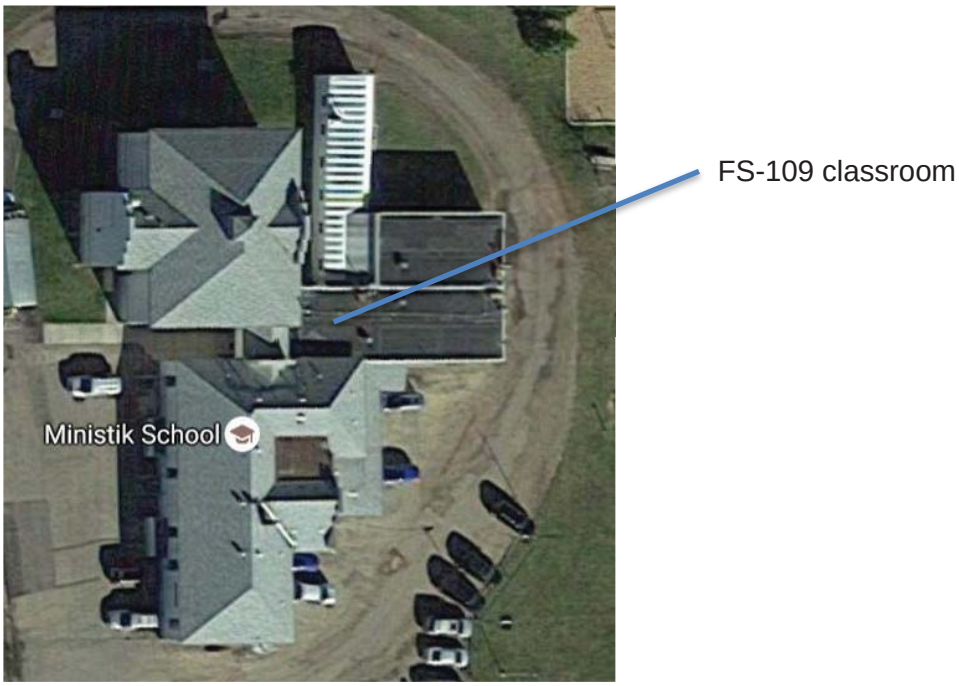
An initial assessment of the old portable classroom (FS-109) at Ministik School was undertaken by RH Services Inc. on Thursday, August 25th 2016.

Visual inspections were conducted within the portable and of the exterior. The roof and crawlspace were not accessed at this time.

An infrared camera was used to locate and explore water damaged areas and a moisture meter was used to confirm if excess moisture was present in these areas. Walls and ceilings were opened in representative areas to examine the conditions and to collect samples of suspected mould growth, for confirmation by optical microscopy.

1.1 BACKGROUND

The area investigated consisted of one portable, located on the northeast corner of the original 1951 building and adjoining the addition to the north and other portables to the north. See the Arial view below.



The original 'Atco Trailers' were circa 1970's and had surpassed the end of their service life expectancy of twenty years.

Complaints about Indoor Air Quality (specifically Mould) had raised concerns about the potential for mould amplification and RH Services Inc. were retained to investigate.

2.0 SCOPE OF WORK

The following services were provided by RH Services Inc.:

- Site inspection;
- Visual assessment;
- Thermal imaging and moisture content measurement;
- Intrusive investigation inside walls and ceilings;
- Report production, documenting observations and suggesting actions.

3.0 SITE INSPECTION

RH Services Inc. undertook the initial site inspection on Thursday, August 25th 2016, at this time the school had some staff present preparing for the start of the autumn term.

Exterior Observations

The roof drain in the corner where the portable joins the gymnasium was cracked and leaking.

The layout of the portables in relation to each other and the gymnasium created an area of poor air circulation and dampness. Water was entering the underneath of FS-109 and had rotted the wood of the skirt. The crawlspace was not accessed but based on our interior findings (discussed later) it was apparent that the floor is rotting.

Location of FS-109 in relation to the library portable and the gymnasium. Note the gym grading towards the library and the damp shady environment created by the positioning of the portables.

A close up of the corner where FS-109 joins the library portable.

The plastic roof drain was broken.

Water inundation occurring at the corner where FS-109 is joined to the gymnasium.

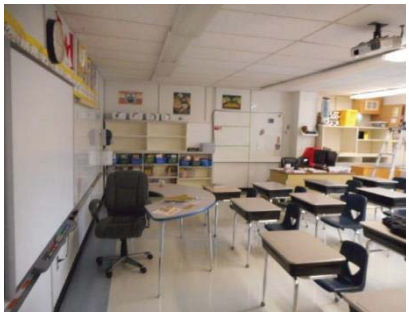
The north wall of FS-109 was rotten.

Crawlspace

The crawlspace underneath the portables was not accessed at this time. The skirt was rotten and from our interior inspection we know that the floor is rotten in places.

Interior Observations

An initial walk through was conducted and conditions appeared to be typical throughout the classroom, water damage was evident at the window on the north side and along the east wall from the furnace to the bookcase and the west wall behind the teacher's desk. This was based on visual assessment, sample analysis, moisture readings and minimal invasive assessment.



Overview of classroom FS-109 looking west.

Moss growth in the window tracks.

Wood rot at the bottom of the bookcase. Sample #4437.04

Water damage from past water leakage through roof.

Mould growth above the old ceiling by the roof drain, in the northwest corner
Stachybotrys sp.
Sample #4437.02

Moisture reading on the east wall by the furnace, above rubber baseboards.

Northeast corner by furnace.

With rubber baseboard removed.

Mould growth on drywall paper
Aspergillus sp.
Chaetomium sp. and
Stachybotrys sp.

West wall behind teacher's desk with rubber baseboard peeled back
Chaetomium sp.
Sample #4437.01

Sample #4437.03

Floor underneath the Palm-Air was rotten.

Specifics

Ceilings: The ceiling of the portable classroom was 2'x4' suspended ceiling tiles. The original cellulose tiles with plastic joint strips, were in place above the suspended ceiling. The roof drain in the northwest corner had leaked in the past and water damaged the original ceiling and some wood shelving below there was mould growth above the original ceiling. *Stachybotrys* sp. sample # 4437.02.

Walls: The classroom walls were drywall; the drywall along the east wall was measured to be damp 30-40% mould growth was confirmed along the east wall and west wall Samples #4437.01 and 03

Floors: The classroom floors looked to be in good condition (sheet flooring), destructive investigation was not undertaken but it was noted that a knife could be pushed through the floor at the wall to floor joint behind the teacher's desk, indicative of wood rot.

4.0 AIR SAMPLE RESULTS

An air sample was collected from Classroom FS-109 using a Reuter Centrifugal Sampler (RCS) the sample was impacted onto a Rose Bengal Agar growth medium. The sample was cultured then examined by optical microscopy to determine the number of colonies per cubic metre and the genus of the mould growth. This was compared to an exterior control sample and the Health Canada Guidelines.

The interior sample was found to be reflective of the exterior (predominantly *Cladosporium* spp.) and at a lower concentration (about 25% of the exterior). This would classify as acceptable and was within Health Canada Guidelines.

5.0 SUGGESTED ACTIONS

Although the air sample collected on August 25th was acceptable, conditions observed were such that blooms of mould can be anticipated during certain conditions, this is difficult to predict and measured mould results can vary drastically. We suggest that planning for replacement of the portable FS-109 (and likely the others) be initiated. We further suggest that for continued operation of the portables air testing be conducted at least each term. A contingency for the installation of HEPA air cleaners should be on hand should elevated mould concentrations be encountered.

It has to be remembered when reading these recommendations that we are not privy to information regarding the demographics and long and/or short term needs of the community. From our position the recommendations are based on the logistics and value of the buildings as they currently stand. They may not reflect the effects, inconveniences and expenses that will be incurred to facilitate the staff, scholars and the community in general.

We believe that further investment in the portable is ill-conceived and from our past experiences with remediation of portables it should be considered highly likely that the extent of rot and mould will be significantly beyond what is anticipated.

It should be noted that the life expectancy of a portable classroom that is well located and maintained is in the area of twenty years. (Atco Structures and Logistics)

6.0 CLOSURE

We trust that the information in this report meets your present requirements. If you have any questions or require further explanation, please contact the undersigned at your convenience. We look forward to working with you in the future.

Yours truly,

RH Services Inc.

Rod Hall

RET. CRSP. ROHT.
Senior Consultant

RH Services Inc.

8124-97th Avenue, NW
Edmonton, Alberta.
T6C 2B7
Tel: 780-440-4880
Fax: 780-440-4890
E-Mail: rod@rhservices.ca

Field Office
7340-82 Avenue,
Edmonton, AB.

Viable Mould Count Analysis

Elk Island Public Schools
683 Wye Road
Sherwood Park, AB
T8B 1N2

Job # 8850 EIPS.88
Date: August 30th 2016
Ref:

Ministik School

Sample number	Location of sample	Time	Volume Litres	Genus	Raw Count	CFU/M^3
01	Exterior Control	Aug. 25th 2016 12:15-12:19	160	*Cladosporium* spp. Yeast **Total**	187 17 204	1,169 106 **1,275**
02	FS 109	Aug. 25th 2016 11:55-11:59	160	*Cladosporium* spp. *Mucor* sp. **Total**	48 1 49	300 6 **306**

NOTES:
Media will be kept for 10 days only.
Collection Media: Rose Bengal Agar in RCS sample
Sterile Hyphae: Means filamentous mould growth without conidia or fruiting bodies, therefore not identifiable.

Sample Interpretation:
- Red highlight indicates concentrations in excess of Health Canada Guidelines
- Blue highlight indicates concentrations of interest
- Green highlight indicate exterior samples

NG: means no mould growth after incubation period

Analysis by:

Rod Hall RET, CRSP, ROHT.

RH Services Inc.

8124-97th Avenue, NW
Edmonton, Alberta.
T6C 2B7
Tel: 780-440-4880
Fax: 780-440-4890
E-Mail: rod@rhservices.ca

Field Office
7340-82 Avenue,
Edmonton, AB.

Mould Identification

Client: Elk Island Public Schools
683 Wye Road
Sherwood Park, Alberta.
T8B 1N2

Job#: 4437 EIPS.88
Date: August 30th 2016

Ministik School

Sample number	Description, location of sample	Type of Sample	Genus of Mould	Loading
01	Drywall paper behind baseboard behind teachers desk West wall	Bulk	*Chaetomium* sp.	Heavy
02	Drywall paper above ceiling by roof drain Northwest corner	Bulk	*Stachybotrys* sp.	Heavy
03	Behind rubber baseboard Northeast corner by furnace	Bulk	*Aspergillus* sp. *Chaetomium* sp. *Stachybotrys* sp.	Moderate Heavy Heavy
04	Base of bookcase shelving unit East side	Bulk	*Wood rot fungi*	Moderate

Legend:
NG= No growth, means no evidence of mould growth observed
Sample interpretations:
Analysis using optical microscopy, loading subjectively described as heavy, moderate or light.

Analysis by:

Rod Hall RET, CRSP, ROHT.

Maxxam
A Bureau Veritas Group Company

Success Through Science®

Your Project #: LEAD(DW)
Site Location: MINISTIK SCHOOL
Your C.O.C. #: 493238-24-01

Attention:LISA JOHNSTON

Elk Island Public Schools
683 Wye Road
Sherwood Park , AB
CANADA T8B 1N2

Report Date: 2016/06/21
Report #: R2202601
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B647848
Received: 2016/06/14, 11:08

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Lead (Total)	2	2016/06/20	2016/06/20	AB SOP-00014 / AB SOP-00043	EPA 200.8 R5.4 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amanda L'Hirondelle, Project Manager
Email: AL'Hirondelle@maxxam.ca
Phone# (780)577-7117
==========
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

Maxxam Job #: B647848
Report Date: 2016/06/21

Elk Island Public Schools
Client Project #: LEAD(DW)
Site Location: MINISTIK SCHOOL
Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		OV5071	OV5072		
Sampling Date		2016/06/13 07:32	2016/06/13 07:36		
COC Number		493238-24-01	493238-24-01		
	UNITS	MIN-RIGHT OF ALARM ENTRANCE	MIN-FS-102	RDL	QC Batch
Elements					
Total Lead (Pb)	mg/L	0.0025	0.021	0.00020	8304549
RDL = Reportable Detection Limit					

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

Maxxam Job #: B647848
Report Date: 2016/06/21

Elk Island Public Schools
Client Project #: LEAD(DW)
Site Location: MINISTIK SCHOOL
Sampler Initials: AW

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.3°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

Maxxam Job #: B647848
Report Date: 2016/06/21

Elk Island Public Schools
Client Project #: LEAD(DW)
Site Location: MINISTIK SCHOOL
Sampler Initials: AW

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8304549	APY	Matrix Spike	Total Lead (Pb)	2016/06/20		93	%	80 - 120
8304549	APY	Spiked Blank	Total Lead (Pb)	2016/06/20		100	%	80 - 120
8304549	APY	Method Blank	Total Lead (Pb)	2016/06/20	<0.00020		mg/L	
8304549	APY	RPD	Total Lead (Pb)	2016/06/20	8.3		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

Maxxam Job #: B647848
Report Date: 2016/06/21

Elk Island Public Schools
Client Project #: LEAD(DW)
Site Location: MINISTIK SCHOOL
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Suwan Fock, B.Sc., QP, Inorganics Senior Analyst

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

Maxxam Analytics International Corporation o/a Maxxam Analytics
9331 - 45th Street, Edmonton, Alberta Canada T6B 2R4 Tel (780) 577-7100 Toll-Free 800-563-6266 Fax (780) 450-4187 www.maxxam.ca

769

CHAIN OF CUSTODY RECORD

Page of

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#12277 Elk Island Public Schools	Company Name:	SAME	Quotation #:	B60558	Maxxam Job #:	Bottle Order #:
Attention:	LISA JOHNSTON	Attention:		P.O. #:		B617848 JMC	493238
Address:	683 Wye Road	Address:		Project:	Lead (DW)	COC #:	Project Manager:
	Sherwood Park AB T8B 1N2			Project Name:	Mostik School	C#493238 2401	Amanda L Hrondelis
Tel:	(780) 417-8193 x Fax (780) 417-8275 x	Tel:	Fax	Site #:			
Email:	lisa.johnston@eips.ca	Email:		Sampled By:	Andrew Williamson		

Regulatory Criteria: ☐ ATI ☐ CCME ☐ Other

Special Instructions

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission) ☐
Date Required:
Rush Confirmation Number: (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Lead (Total)	# of Bottles	Comments
1		MIN-Right of Alarm Entrance	16/6/13	7:32AM		N	✓		
2		MIN-FS-102	16/6/13	7:36AM		N	✓		
3									
4									
5									
6									
7									
8									
9									
10									

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# Jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Lisa Johnston/Lisa Johnston	16/06/14	11:08AM	Jenna Watts	20/6/6614	1108		☐	9,10,9	☐ Yes ☐ No

IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

ice N

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam Job Number: B647848
Report Date: 2016/06/21

Elk Island Public Schools
Client Project #: LEAD(DW)
Site Location: MINISTIK SCHOOL

Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		OV5071	OV5072		
Sampling Date		2016-06-13 07:32	2016-06-13 07:36		
COC Number		493238-24-01	493238-24-01		
	UNITS	**MIN-RIGHT OF ALARM ENTRANCE**	**MIN-FS-102**	**RDL**	**QC Batch**
Elements					
Total Lead (Pb)	mg/L	0.0025	0.021	0.00020	8304549

RDL = Reportable Detection Limit

Results relate only to the items tested.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Each tempe Each tempe Each tempe Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1 9.3°C #N/A #N/A

Results relate only to the items tested.

Elk Island Public Schools
Attention: LISA JOHNSTON
Client Project #: LEAD(DW)

Report Date: 2016/06/21

Site Location: MINISTIK SCHOOL

Quality Assurance Report
Maxxam Job Number: B647848

QA/QC Ba	Init	QC Type	Parameter	Date Analyz	Value	Recovery	UNITS	QC Limits
8304549	APY	Matrix Spike	Total Lead (Pb)	2016-06-20		93	%	80 - 120
8304549	APY	Spiked Blank	Total Lead (Pb)	2016-06-20		100	%	80 - 120
8304549	APY	Method Blank	Total Lead (Pb)	2016-06-20	<0.00020		mg/L	
8304549	APY	RPD	Total Lead (Pb)	2016-06-20	8.3		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

March 16, 2017 Board Meeting
APPENDIX 9

Bruce.

ALBERTA
EDUCATION

Office of the Minister
MLA, Edmonton - Castle Downs

AR 74313

May 8, 2012

Ms. Barb McNeill
Board Chair
Elk Island Public Schools
683 Wye Road
Sherwood Park AB T8B 1N2

Dear Ms. McNeill:

Thank you for your letter requesting funding to modernize Fultonvale School and increase its capacity to include the Colchester students and, potentially, Ministik students. As Minister of Education, I am pleased to respond.

I appreciate that a Value Management Session was undertaken to help assess the best option for the communities of Colchester, Fultonvale and Ministik. I understand your school board's decision and recognize the influence of other factors on the timing of such a project. I recognize the importance of the Fultonvale modernization project, and I am encouraged that it was included as the highest priority in your updated capital plan for 2013-2016. It is my understanding that Elk Island Public Schools staff are working with staff from both Education and Infrastructure to develop an accommodation strategy for the proposed project so that when funding becomes available, work can proceed quickly.

School infrastructure needs are a top priority for the Government of Alberta. On April 4, 2012, Premier Alison M. Redford committed to building 50 new schools and to upgrading and revitalizing 70 existing schools in communities throughout Alberta. As the work of meeting this commitment gets underway, I can assure you that your request will receive appropriate consideration.

Thank you for notifying me of your board's decision on a solution for Colchester students.

Sincerely,

Thomas A. Lukaszuk
Minister of Education
MLA-Elect, Edmonton – Castle Downs

cc: Honourable Jeff Johnson, Minister of Infrastructure
Dave Quest, MLA-Elect, Strathcona – Sherwood Park

Alberta

423 Legislature Building 10800 - 97 Avenue, Edmonton, Alberta T5K 2B6 Canada Telephone 780-427-5010 Fax 780-427-5018
12120 - 161 Avenue NW, Edmonton, Alberta T5X 5M8 Canada Telephone 780-414-0705 Fax 780-414-0707
Email: edmonton.castledowns@assembly.ab.ca

Final Report

Value Scoping Session

Fultonvale and Colchester Schools

Elk Island Public Schools
Regional District #14

Submitted by

The Fletcher Group

January , 2012

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Executive Summary

Elk Island Public School Regional Division #14 is presently reviewing the ability to accommodate the students and teachers of the Colchester Public school. The high voltage power line proposed in the vicinity of Colchester school has created concern among the parents for the safety of their children. Alberta Infrastructure and the Alberta Education sponsored this Value Scoping workshop to determine a preferred option for the students of Colchester.

Treasury Board and Alberta Education guidelines require that the Elk Island Regional Division #14 review the utilization of any other schools in the immediate area prior to building any new facility. The workshop reviewed the ability to consolidate the students and teachers of the Colchester Public School and Fultonvale Elementary / High School into one learning facility. The facility must have the ability to accommodate the immediate and future needs of the local area students. The design capacity core criterion is for 700 students with the complementary space for teachers, administration and wrap around services. The opening capacity is designed for 600 students

The goals and results of this study are summarized below:

- To identify and clearly define the stakeholders' needs

This was accomplished by conducting the introductory session where all of the stakeholder wants and needs were expressed. They were then translated into 124 "functions" and arranged into a logical functional analysis systems technique (F.A.S.T) diagram. Some of the functions were then described in terms of performance characteristics from the stakeholder perspective.

- To brainstorm and evaluate potential options for meeting the identified needs

Twenty six ideas were discussed during the workshop ranging from the construction of a new school for Colchester at a new location, to be determined, to combining the Colchester and Fultonvale students at the present Fultonvale location.

- To build consensus of various stakeholders of needs and best value options

Two options were carried forward into a concept drawing where detailed value and cost assessment was undertaken by the team members

- To clearly identify the project scope of options that represent best value for money and meet stakeholder needs prior to project approval

The analysis indicated that two options were viable

- *build a new school on the Fultonvale site and demolish the existing schools or*
- *to undertake a major modernization of the Fultonvale school including permanent and modular additions*

- To provide accurate and relevant project costing and architect block diagrams for the preferred project scope options

The project estimated capital and life cycle costs were identified for the conceptual design level with corresponding block diagrams created by the architect.

The capital cost estimate for the new build was $21.0 Million with a calculated nPV of $32.2 Million. The capital cost estimate major modernization of the existing Fultonvale School was $19.0 Million with a corresponding Net Present Value (nPV) (25 years) of $30.6 Million. NPV compares the value of a dollar today to the value of that same dollar in the future, taking inflation and returns into account. Note that this is a cost estimate at the conceptual phase and will be subject to refinements in subsequent phases of the project.

- To build consensus of various stakeholders around project scope

The project team evaluated both shortlisted scenarios with evaluation criteria derived by the project team. The evaluation score for the major modernization of the Fultonvale School was slightly higher than the new build scenario based on its overall greater satisfaction of the needs, school layout and the lower capital and nPV cost. The major concern of the major modernization option is the potential disruption to the students and teachers during construction. This issue could not be addressed at the workshop, in the

form of a mitigation plan, with the level of detail available to the project team, but should be carried forward in the design criteria.

The Value Scoping process allowed the stakeholders to undertake a rapid and comprehensive analysis of needs resulting in two viable options for the school complex. This process maximized the use of senior stakeholder's time which allowed their participation at the workshop. The outcomes of this approach allowed for some very open and frank discussions among the stakeholders including school administrations, parent representatives of the 3 schools, Elk Island Public School Regional District #14, Alberta Education and Alberta Infrastructure staff.

Context

Elk Island Public School District #14 operates three public schools in the southern portion of Strathcona County.

School facility audits are undertaken every five years. These audits examine the condition of the architectural, structural, mechanical and electrical systems of a facility in addition to site elements and barrier free requirements.

The table below identifies the cost of the total maintenance events for the next five year period, based on information from the facility audit reports. The Facility Condition Index (FCI) is calculated by dividing the total 5-year maintenance cost by the school's replacement value. FCI is generally used to classify a school's overall condition (i.e. <15% represents good condition, 15-40% represents fair condition and >40% represents poor condition).

The adjusted student enrolment data provided below represents total number of students within each of the facilities with adjustments made for kindergarten and special education students. The facility's utilization rate is calculated by dividing the adjusted student enrolment by the school's total net capacity.

The following table outlines the maintenance needs at these facilities, condition and utilization rate.

School	Maintenance 5 years	FCI	Adjusted Student enrolment	Utilization rate
Colchester	$1.9 Million	26.35%	204	67%
Fultonvale	$3.9 Million	40.01%	291	51%
Ministik	$1.0 Million	34.875	72	59%

Colchester was constructed in 1957 with a 36 m^2 addition in 1986. Fultonvale was constructed in 1975 with portable classrooms added in 1975, 1977 and 1980. The Ministik School was constructed in 1951 with an addition in 1952 and portable classrooms in 1975. The core of the Fultonvale and Colchester schools are physically sound masonry structures. All the schools require maintenance and upgrades that are identified in the condition assessment reports.

The proposed high voltage power line adjacent to the Anthony Henday expressway is the catalyst to consider the consolidation of the Colchester and Fultonvale schools. Presently Colchester provides Kindergarden to Grade 6 for the residents of their community and for the Goals 1 & 2 program for a wider

area. Students graduating from Colchester move to Fultonvale for Gr. 7- 9. Students from Ministik also move to Fultonvale for Gr. 7-9.

The construction of the power line is proceeding in the winter of 2012 and is scheduled for completion in the spring of 2013, hence there is a need for a quick resolution and transition strategy for the Colchester students and the receptor school; Fultonvale.

Value Scoping Sessions

The 3 day Value Scoping session was planned and organized according to the typical 7-step VE job plan as follows:

- Organization phase
- Information phase
- Function Analysis/ Functional Performance Specification (FA/FPS) and cost analysis phase
- Creativity phase
- Evaluation phase
- Development and presentation phase
- Implementation and follow up phase

Organization Phase

Organization was initiated with consolidation of project specific information and the distribution of this information and workshop schedule by the project manager to the consultant team. It was decided to hold the Value Scoping workshop at the Fultonvale Public School which is the central location, from January 9-11, 2012. This allowed for an on-site visit of the Fultonvale School and school grounds at the end of the January 9th session.

An initial teleconference was held with staff from Alberta Infrastructure and Alberta Education to finalize the agenda and logistics. The first teleconference, January 4th, 2012 was attended by:

Alberta Infrastructure	Mark Latimer	**Alberta Education**	Michael Ediger
	Estella Tong		Laura Udell
	John Lovell	**The Fletcher Group**	Tom Fletcher
	Brian Dejong	**Group2 Architects**	Doug Ramsey
	Lyle Markovich	**Tech Cost Consultants**	Curtis Cameron

Follow up teleconferences and emails between Mark Latimer and Tom Fletcher occurred up to the first workshop on January 9th, 2012.

.

The following personnel were selected to participate in various stages of the workshop. The team members provided a wide array of experience that was needed to assure that all of the needs of the stakeholders were documented.

Alberta Infrastructure	Mark Latimer	**Fultonvale Elementary/Junior School**	M.J. Nam (Principal)
	Estella Tong		C. Chorney (parent rep)
		Colchester School	Bill Suter (Principal)
			Jennifer Matyjanka (parent rep)
			Gabriel Chemello (parent rep) (part)
			Carey Pressacco (parent rep) (part)
Alberta Education	Michael Ediger	**Ministik School**	Evelyn Gaudet (Principal)
	Laura Udell		Tanya Clubine (parent rep)
	Mike Padnessa		
Elk Island Public School	Bruce Beliveau, Superintendent	**The Fletcher Group**	Tom Fletcher
	Lori Tootoosis – Friesen, Trustee	**Group2 architects**	Doug Ramsey
	Basil David (Director of Facilities)	**Tech Cost Consultants**	Curtis Cameron
	Stan Easton (Ass't Director of Facilities		Kevin Drake

Figure 1 - List of Participants

The Value Scoping workshop was facilitated by Tom Fletcher P. Eng., CVS.

The additional resources for the consultant project team were Doug Ramsey, Group2 Architects who provided the architectural expertise to the project team. Curtis Cameron and Kevin Drake from Tech Cost provided expertise for the cost scenarios.

Historical background information, RECAPP facility Evaluation reports (Colchester, Fultonvale & Ministik) and existing floor plans were provided to the consultant project team by Alberta Infrastructure. This was supplemented by general information obtained by a web search. Additional information, concerning the potential installation of the high voltage power lines in the vicinity of the Colchester school was also reviewed.

Background Information

The project team was provided with the following information

1. List of participants
2. Floor Plans for Colchester, Fultonvale and Ministik schools
3. RECAPP Facility Evaluation reports
4. Area Capacity and Utilization Report – Elk Island Public Schools

This information was supplemented by an internet literature search, which provided additional information concerning Strathcona County and the Elk Island Public School Regional Division #14.

Pre-workshop Activities

Project information and schedule was distributed to members of the consultant team 1 week prior to the workshop. The following websites were also referenced prior to the workshop to provide additional background information.

Reference Websites:

- ***http://www.strathcona.ab.ca/***
- ***http://www.eips.ca/***
- ***http://www.fultonvale.ca/***
- ***http://www.colchesterschool.ca/***
- ***http://www.ministikelementary.ca/***
- ***http://www.ags.gov.ab.ca***

Draft F.A.S.T Diagram

After reviewing the available information, a draft function analysis diagram (F.A.S.T) was prepared by The Fletcher Group. This activity provides valuable information to the VE facilitator and the VE team to ensure all major function categories (basic, support, technical, and constraint) are addressed from a technical and client perspective.

School Layout Review

Doug Ramsey , Group2 Architects had reviewed the existing floor plans for the 3 schools and prepared a conceptual plan using the Ministry guidelines for a new school with 700 students and another conceptual plan for a major modernization of the Fultonvale school. This information was discussed between Doug Ramsey and Tom Fletcher on January 8th at the Group2 office.

A preliminary site visit for the Colchester and Fultonvale Schools was also undertaken by Tom Fletcher on January 8th.

The cost consultant, Tech Cost also undertook some preliminary cost modelling in preparation for the workshop.

Information Phase

The purpose of the information phase is to disclose all of the information that is available to the project team members and provide the team members with the opportunity to ask any questions about the project scope or any of the material discussed.

Mark Latimer, from Alberta Infrastructure and Mike Ediger from Alberta Education who co-sponsored the Value Scoping Session, introduced the project to the team members including expected goals and outcomes for the session from the provincial perspective. Bruce Beliveau, superintendent, Elk Island Public Schools commented that there is a "window of opportunity" in the present circumstance to meet all of the needs of the students if there can be agreement on a preferred solution. All of the VA team members introduced themselves and detailed their interests and goals and success criteria for these sessions.

Team members included representatives from Alberta Infrastructure, Alberta Education, Elk Island Public Schools, and principals from Colchester, Fultonvale and Ministik, parent representatives and the technical support from The Fletcher Group, Group2 Architects and Tech Cost consultants.

The summary of "success" comments were

- Comprehensive understanding of the needs of the user and stakeholder community with the emphasis being the best solution for the students
- Retain and continue to build a sense of community for this area
- Understanding of the Colchester School / proposed High Voltage power line and its impact on the Colchester school. Representatives from Colchester emphasized the importance of a rapid but comprehensive solution
- Need to develop a 20-30 year solution
- Accommodation for broader needs and wrap around services
- Adequate space allocation for students and teachers in the "new" or "major modernization" scenario
- Best learning outcome for students in the transition period and long term

- Special needs children from the Goals 1& 2 accommodated as well as other special needs students
- Ability to coordinate with day care , pre and after school care
- To develop a solution within the Provincial government guidelines

Tom Fletcher presented some introductory slides outlining the seven step Value Scoping process. One of the strengths of this methodology is the structured approach to identify all of the functions that must be accomplished before proposing solutions.

The first day consisted of the information session where all of the documentation of the 3 schools was presented to the team members. . The detailed steps are listed below.

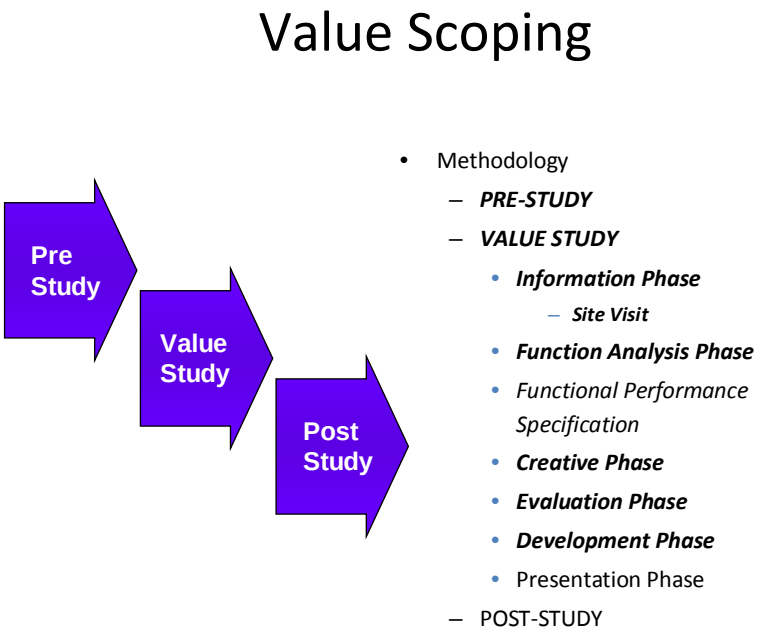


Figure 2 Value Scoping Methodology

The first day of the workshop concentrated on the information and function analysis phases. This gave all of the team members a good comprehensive understanding of "what" had to be done prior to developing solutions. The activities of first day were completed with a tour of all of the existing facilities at the Fultonvale School. M.J. Nam, principal of Fultonvale conducted the tour.

Members of the VA team had the opportunity to ask questions to clarify any project specific details or concerns

Existing conditions

Doug Ramsey, Group2 Architects described the structure and condition of the Colchester, Fultonvale and Ministik schools. The summaries as described in the Facility Evaluation reports are indicated below. The core of Fultonvale and Colchester are in satisfactory condition.

Colchester School

• Located at 23358 Township Road 520 in Sherwood Park with a grade structure of K-6.

• Constructed in 1957 with an associated area of 2,514.0 m2. A 36.0 m2 addition was constructed in 1986. Total area is 2,549.0 m2.

• The net student capacity of the school is 304. The 2010-11 adjusted student enrolment were 204 with a resulting utilization rate of 67%.

• The most recent facility evaluation was completed in October 2010. The information contained in the ReCAPP Facility Evaluation Report included:

- Replacement cost (fire replacement): $7,154,000
- Total maintenance events next 5 years: $1,885,327
- 5 year facility condition index (FCI): 26.35%

(0 to 15% - Good / >15 to 40% - Fair / >40% - Poor)

Fultonvale Elementary Junior High School

• Located at 52029 Range Road 224 in Sherwood Park with a grade structure of K-9.

• Constructed in 1975 with an associated area of 3,442.90 m2. Portables were added in 1975 (170.6 m2), 1977 (215.4 m2) and 1980 (708.15 m2). Total area is 4,537.0 m2.

• The net student capacity of the school is 511. The 2010-11 adjusted student enrolment were 291 with a resulting utilization rate of 51%.

• The most recent facility evaluation was completed in October 2010. The information contained in the ReCAPP Facility Evaluation Report included:

- Replacement cost (fire replacement): $9,663,000
- Total maintenance events next 5 years: $3,865,910
- 5 year facility condition index (FCI): 40.01%

Ministik School

• Located at 21246 Highway 14 in Sherwood Park with a grade structure of K-6.

• Constructed in 1951 with an associated area of 551.2 m2 and added to in 1952 (139.4 m2) and 1993 (303.5 m2). Portables added in 1975 (160.5 m2). Total area is 1,154m2.

• The net student capacity of the school is 121. The 2010-11 adjusted student enrolment were 72 with a resulting utilization rate of 59%.

• The most recent facility evaluation was completed in January 2011. The information contained in the ReCAPP Facility Evaluation Report included:

- Replacement cost (fire replacement): $2,790,000
- Total maintenance events next 5 years: $972,821
- 5 year facility condition index (FCI): 34.87

Scope

The project team developed the following mission statement which describes the critical elements of this project.

The mission is to;

To provide an innovative K-9 school experience to fulfil the academic and social needs and to prepare the students for success in life

When the mission is achieved the following benefits will also be achieved.

- ensure community identities
- transmit team, leadership, life and problem solving skills
- accommodate Colchester closure
- accommodate 700 students
- apply applicable standards

Project Risks

The following potential risks were identified that may have an impact on the project. Subsequent phases should attempt to monitor and mitigate these risks.

- Provincial funding
- Potential power line activation in 2013
- Colchester community acceptance of school closure
- 2 year + design and construction window
- Disruption for students and teachers during construction

Function Analysis

The **Function Analysis Phase** was conducted using two recognized techniques

a. Intuitive Analysis
b. Environmental Analysis

The result was the development of a comprehensive list of functions for the project. Each function was described in the VA/VE format using the "active verb" and "measurable noun" to describe what the function must do without specifying a particular solution. The functions were then organized into a logical sequence resulting in a functional tree or F.A.S.T. diagram. The benefits of this approach are the clear graphical description of the project and the ability to identify any "gaps" in the project in the concept phase of the assignment. The list of functions represents the major elements of this project. As the project progresses through the design phases, it is expected that some additional functions may be identified which can be included in the function diagram.

The environmental analysis in this context represents all of the entities that have some interaction with the present school facility. The interactors include the community, partners, Elk Island Public School Regional Division #14 etc. This relation is described in the form of functions that the facility "must" do. Note that the function analysis phase does not prescribe a particular solution. It is very important at this stage to be able to focus the group's attention on "all" of the functions that must be accomplished prior to developing any particular solutions. This prevents the group from developing solutions that will only meet part of the needs of the facility which ultimately results in having to conduct much iteration to satisfy all of the needs.

The following is a graphical representation of the factors that affect the design.

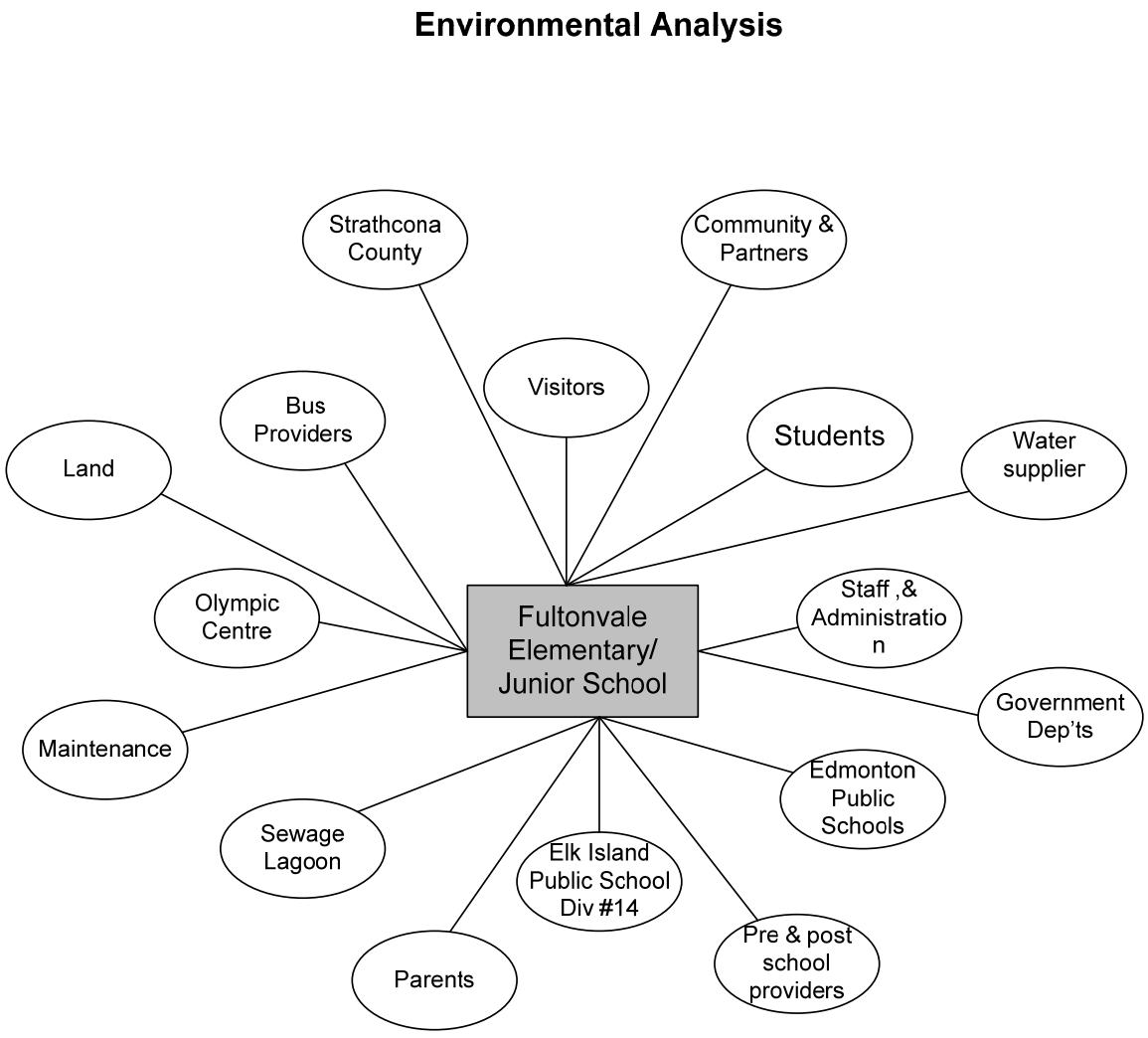


Figure 3- Environmental Analysis

Function Diagram – High Level

The following high level function diagram was created using the list of functions created from the function analysis session

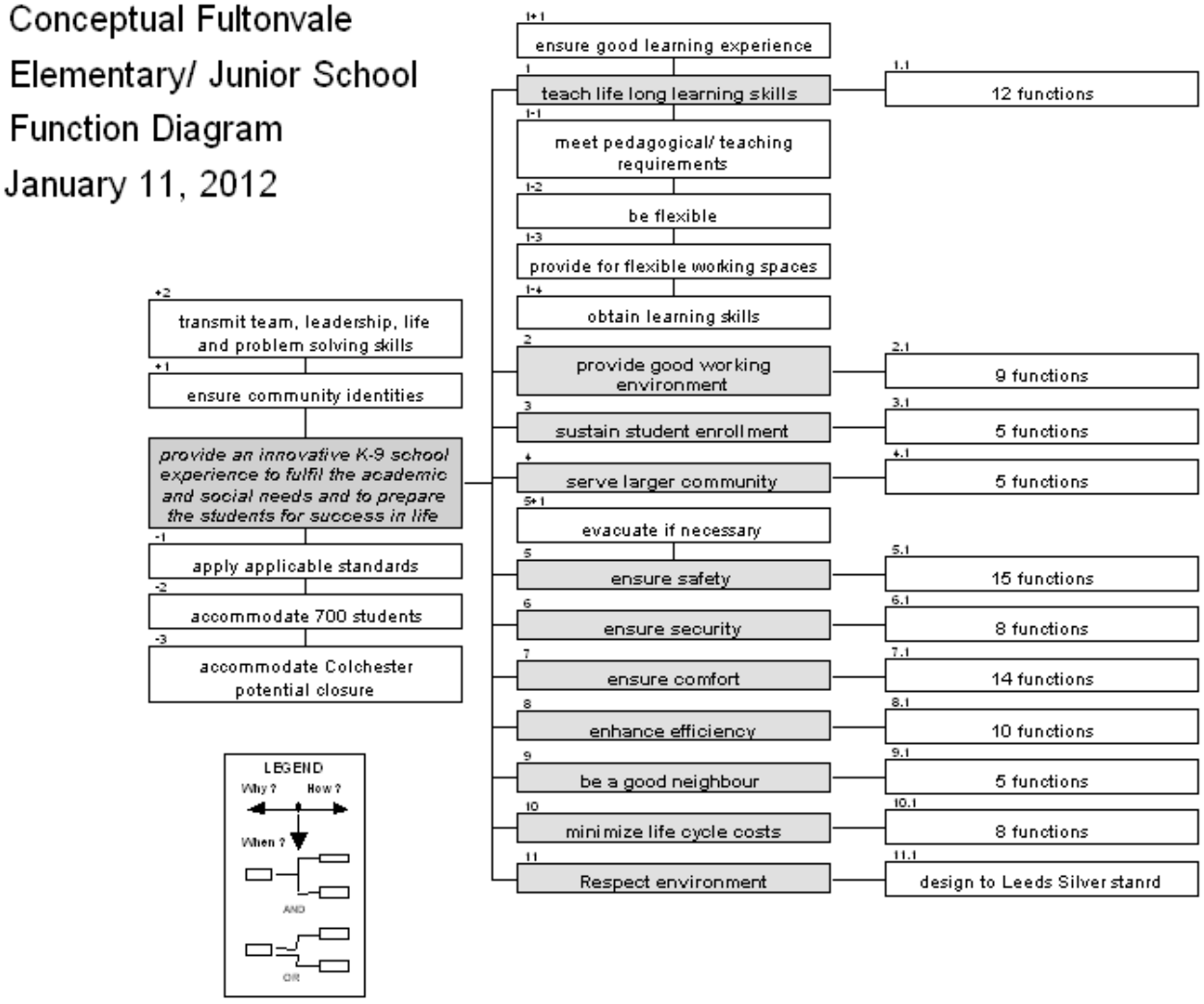


Figure 3 - Function Diagram – high level

In order to satisfy the mission or "how" the functions can be accomplished, eleven higher level functions must be accomplished namely:

1. **Teach Life Long Learning Skills**. The school facility must be able to supply an environment where life long learning skills can be taught. As a consequence, the facility can provide the teachers and

staff with the ability to meet pedagogical teaching requirements. It will also allow the teachers to be flexible in attaining these goals. The school provides a diverse curriculum including academic, CTS, gym, drama and outdoor education. The school is structured to meet the special needs of all of the students at this facility. It has a large specialized and integrated staff that can evaluate and monitor student needs at the facility. This is a basic function for the facility.

2. **Provide a good working environment**. The proposed design must provide a good working environment for staff, students and administration. This will include staff meeting and rest areas, classrooms that are ergonomically designed to meet the present and future needs of the students. These areas will meet the computer networking requirements of the students. They will also be designed to minimize extraneous noise yet provide the teacher with the ability to communicate with all students effectively. The construction activities will be scheduled in consultation with the school administration to limit noise in predefined sensitive noise locations. This is a technical and support function.
3. **Sustain Student Enrolment identifies** the need to provide social space and non curricular and recreational activities in addition to the basic requirement for academic learning. This supports the mission of the project to prepare students for success in life.
4. **Serve larger community;** The modernized facility should recognize the needs of the larger community to be able to access and utilize this facility in off school hours. This may include such functions a pre and post school daycare, public partnerships, joint programs with the Olympic Centre etc.These items should be considered in the design process.
5. The "**ensure safety**" function describes all of the functions necessary to ensure student and staff safety. The detailed functional diagram in Appendix A identifies a range of fifteen functional areas ranging from pick up/ drop off students, parking, evacuation procedures, fire control, and snow removal to separating age groups. All of these functions have procedures and standards that must be addressed in the later stages of this project. This can be accomplished by developing functional performance criteria or specifications prior to moving to the detailed design. Some of the students in the facility require special consideration and hence additional measures must be considered in the design process. This is also a basic function for this facility.
6. The "**ensure security**" function addresses eight higher level functions that concern items such as controlling access, detect intrusions, separating student and vehicle traffic and enclosing the perimeter of the property. The levels to which these are addressed will be developed in subsequent phases of this assignment.

7. The "**ensure comfort**" function addresses the issues concerning heating and air humidification and ventilation for good quality air. It also covers such functions such as noise control and multifunctional space for large meetings and lunch room space. There are special requirements to upgrade the facilities for universal access to the building and washrooms. Care must also be realized for any fluorescent lighting since some current systems increase the frequency of headaches. This is a support function.
8. **Enhance Efficiency** addresses the long term functions of parking and picking up students as well as appropriate access to the school building. Functions also addressed the need to optimize the layout to address travel times for the student, teachers and professional staff within the facility. In the short term, any construction must pay particular attention to disruption of the students since there is concern among the teachers and parents about excessive noise during the 2 year construction activities., especially for the Goals 1&2 program. This is a technical/ support function
9. The "**be a good neighbour**" function addresses the general aesthetic requirements of a school complex with respect to exterior finishes, landscaping, and overall maintenance. It also has outdoor sport facilities such as soccer fields that are shared with outside groups. The facility also provides meeting space for the wrap around associations. This is a support function.
10. **Minimize Life Cycle Costs** identifies the need to right size the school to conform to present standards, manage the asset (existing and future). For instance new schools do not have provision for basements nor cafeterias. Construction scheduling can also cause an increase in the project cost and schedule. This can be minimized if addressed in the constructability review prior to tender. This is a technical function as well as a constraint function.
11. **Respect Environment** functions under the present definition are restricted to issues such as following the principles of LEED. If adopted, this will be a technical as well as a constraint function.

The functions are described in the form of

- "Basic" functions for this project are functions 1, 5, 6 i.e. teach life long learning skills. If these functions are not addressed then the project cannot succeed
- Technical and Support functions are functions 2, 3, 4,7,8,9.
- Constraint function; function 10,11 are constraint functions

Creativity Phase

Once the function analysis was completed and the participants fully understood the many functions that were to be accomplished to satisfy the needs, they were asked to describe other ideas that could fulfill these needs as described in the functions. This section initiates the attempt to try to find solutions that can meet the needs of the described functions.

The creativity session was conducted by opening the session for ideas that might meet the functional needs previously identified. The goal of this phase of the project is to be able to suggest high level alternatives. Subsequent design phases will undertake a more detailed look at the more specific functions identified in the functional tree.

The factors concerning any renovation or upgrade were instructed to be

- 50 year solution with costs normalized to a 25 year life cycle
- New footprint to be compliant with current space guidelines of the Alberta Education and Alberta Infrastructure
- Alberta government guidelines require that vacancy rates at adjacent schools be considered prior to any construction at a new location

Twenty six ideas were generated by the project team that ranged from minor improvements to building a new school. The list of ideas is included in Appendix B

Evaluation Phase

All of the ideas proposed were sorted based on

- Is the idea within the scope of this project
- Is the idea feasible in terms of the RECAPP condition reports for major items and costs?
- Does this address the Colchester conflict with the proposed High Voltage power line
- Will it satisfy the needs identified in the function analysis?
- Capital cost?
- Overall life-cycle costs?

The original twenty seven ideas were reviewed by the project team members. Two scenarios emerged as credible options to meet the present and future needs. The list of ideas is shown in Appendix B

The two scenarios were to:

1. Build a new school on the Fultonvale School site followed by the demolition of the present structure
2. Undertake a major modernization, including permanent and modular additions to the existing Fultonvale school. The partial demolition of the site is detailed in Appendix C

The evaluation criteria developed by team members to evaluate each scenario is listed below:

	Evaluation Criteria for these options	New Build on site	Major Modernization of Fultonvale
	1 - negative impact		
	5 - neutral impact		
	10 - positive impact		
1	Disruption -short term, 2 year, due to construction	7	3
2	Accommodate Colchester family	10	10
3	Supportable -Treasury Guidelines	5	5
4	accommodate Fultonvale family	10	10
5	meet current learning strategies	10	10
6	programming opportunities	10	10
7	environmental stewardship	4	10
8	community access	8	10
9	operational efficiency	10	9
10	maintainability	10	10
11	adaptable (Interior/exterior)	10	10
12	long term footprint location	4	10
13	Parking- bus separation, scheduling	5	5
	Point Total- Equal Weighting	**103**	**112**
	Capital Cost Estimate - Tech Cost (rounded)	**$21.0 M**	**$19.0 M**
	nPV Value	**$32.2 M**	**$30.6 M**

Figure 4 – Evaluation Criteria

Development Phase

Option 1: Build a new school on the existing Fultonvale site.

This would require the use of one of the existing playgrounds for a 2 year period while the new school is under construction. Upon completion, the existing school would be demolished and the playground would have to be re-established. This option as well as Option #2 allows for demolition of the Colchester school.

Description

The new 700 Capacity K-9 School, Designed and Constructed with 700 capacity core, opening capacity will be 600. A new municipal waterline would be constructed in this option for a cost of $130k. Total area is:

Demolition 7088 m²	
New Core	4,723 m²
Modular	1,205 m²
Total Area	5,928 m²

This design is based on the Alberta Education design template for a new school.

Advantages:

- Meets the requirements for students by square metre allocation
- Complies with Ministry standards
- Less disruption to students during construction
- Most efficient space allocation by area
- New start for communities
- Cost avoidance by joining 2 schools (O&M)
- Leed silver compliant

Disadvantages

- New building will be located on existing playground area
- Must move and relocate playground
- Replaced playground will be closer to street
- Need permission from the County to build a new building envelop
- Demolition of viable asset (Colchester + Fultonvale)
- Not optimal footprint on site for access,
- Additional cost of road to school entrance
- Footprint near property line will limit ability to fight fires from all sides of building
- Need municipal water for sprinklers
- Need permission and permits from the County to relocate building footprint to new envelope on property site

Cost: Capital Cost $21.0 Million; nPV $32.2 Million

Option #2 – Facility Modernization & New Additions & Modular's

Designed and Constructed with 700 capacity core, opening capacity will be 600.
Total area is:

Demolition	3,645 m²	
Preservation	3,443 m²	3,443 m²
Gym Expansion		776 m²
Other Expansion		740 m²
Modular		1,205 m²
Total Area		6,164 m²

This design demolishes the outdated portable classrooms and replaces them with modern modular classrooms. The core of the building will be modernized but will retain most of the structural components and the exterior finishes of the building. The gym will be expanded and relocated to the north west corner of the building. The existing gym will be converted to an at grade ancillary space to facilitate universal access.

Advantages

- Modernize to a 1 storey facility
- Meets requirements for students by square metre allocation
- Complies with ministry standards
- Reuse viable asset – concrete block construction, more durable finish, less maintenance
- New start for communities
- Consider Leed compliance
- A new larger Gym will be incorporated as part of the permanent addition within current envelop. This will be at the same elevation as the other parts of the school
- Can expand eastward with modules
- Optimal footprint on site, no additional cost for access roads
- Cost avoidance by joining 2 schools (O&M)
- Design flexibility within standards – stakeholder preferred
- Distance to Olympic Centre remains the same
- Construction activities could be a valuable learning experience (Sutter)
- Retain good 360 degree access for fire fighting

Disadvantages

- Utilizes part of north east playground – must be reinstated
- More disruptive to students during construction
- Possible effect on baseball diamond operation
- Need for municipal sprinklers

Cost: Capital Cost estimate $ 19.0 Million; nPV (25 years) $30.6 Million

Summary

The project team was requested to evaluate potential options for the modernization of the Fultonvale Elementary Junior High School, Strathcona Park Alberta using – Value Scoping /Management methodology (SAVE International). The goal was to develop a preferred solution that would be acceptable to the students, parents, Elk Island Public School Regional Division #14. The proposed solution also needed to consider the provincial standards as determined by Alberta Education and Alberta Infrastructure.

The mission for this project was developed by the project team which included members from Regional Division #14, representatives from Alberta Education, and Alberta Infrastructure.

The schedule for this study allowed for a site visit of the present school facilities and a 3 day workshop conducted from; January 9-11, 2012.

The Value Analysis function analysis identified over 124 distinct functions that have to be considered to enhance the opportunity to come to a mutually agreeable solution. The list of functions and functional tree diagram can be used throughout the project to monitor conformance to the identified needs. This also indicates how the costs are distributed by function rather than by material item.

Eleven key function areas were identified from which an evaluation criterion was determined to evaluate possible solutions.

Two potential options were suggested namely;

1. New Build on the Fultonvale site
2. Major Modernization, including permanent and modular additions of the existing Fultonvale School

The project team evaluated both shortlisted scenarios with evaluation criteria derived by the project team. The evaluation score for the major modernization of the Fultonvale School was slightly higher than the new build scenario based on its overall greater satisfaction of the needs, school layout and the lower capital and nPV cost. The major concern of the major modernization option is the potential disruption to the students and teachers during construction. This issue could not be addressed at the workshop, in the

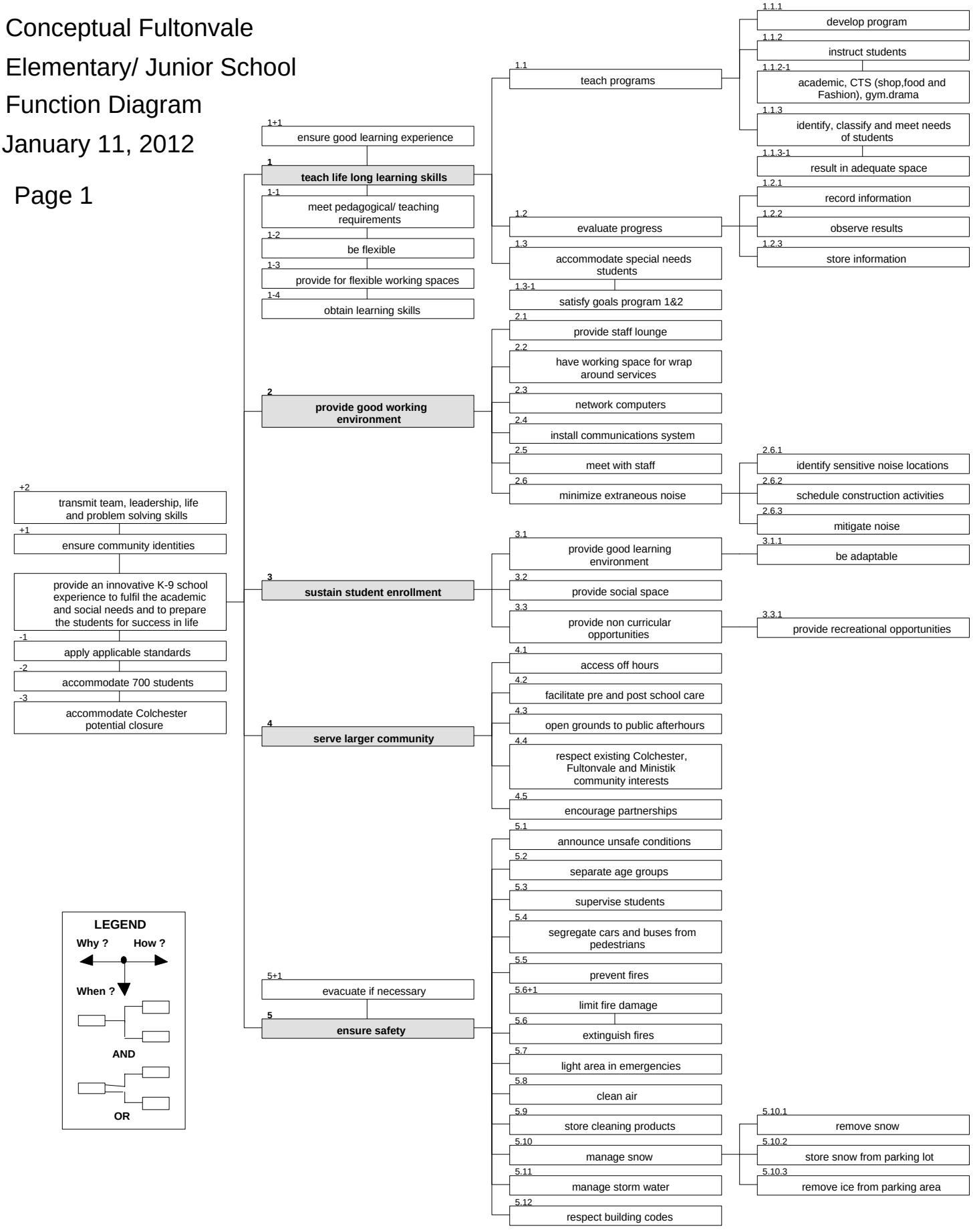
form of a mitigation plan, with the level of detail available to the project team, but should be carried forward in the design criteria.

This process also allowed the stakeholders to undertake a concentrated analysis. The benefits of this approach allowed for some very open and frank discussions to assist in the determination of a long term solution for the Fultonvale and Colchester communities.

Appendix A - Detailed Function Analysis Diagram

Conceptual Fultonvale Elementary/ Junior School Function Diagram

January 11, 2012



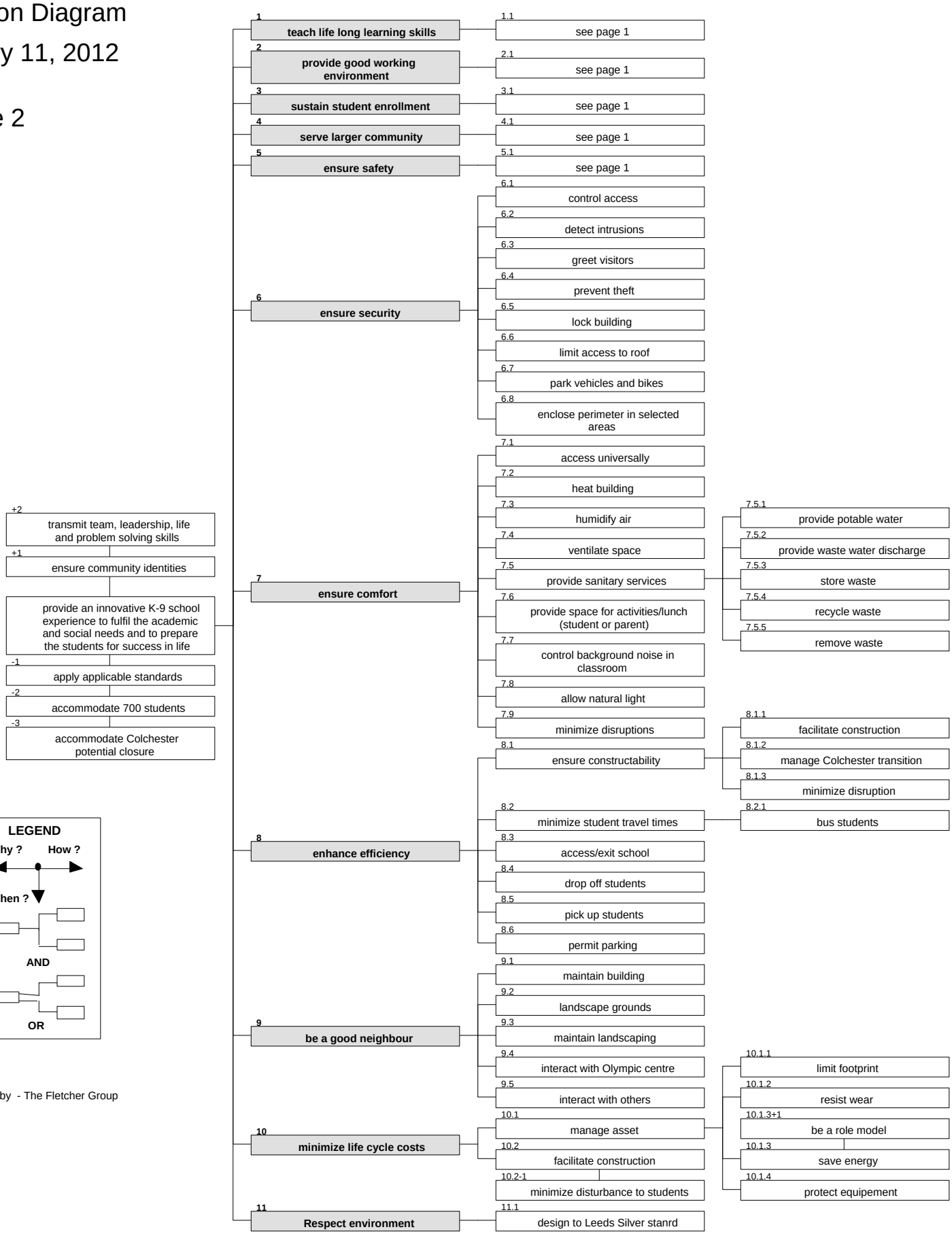
Prepared by - The Fletcher Group

Conceptual Fultonvale Elementary/ Junior School Function Diagram

January 11, 2012

Page 2

Appendix A



Prepared by - The Fletcher Group

Appendix B – List of Creative Ideas

Idea #	Description	Y/N	
1	replace Fultonvale with new school on site with Fultonvale & Colchester	Y	Base Case
2	Major modification to Fultonvale to accommodate Colchester	y	
3	New school for Colchester- new site	N	too many barriers,
4	Modernization to Fultonvale	N	
5	Modernization to Ministik	NA	
6	Incorporate Centre into overall plan- addition to centre	N	County of Strathcona,
7	Combine schools to increase feasibility of programs	see 1,2	
8	Build a new elementary school for Fultonvale and Colchester + use existing Fultonvale as jr high (133)	N	
9	Minister option to consolidate all school population + sell existing Colchester + Ministik	potential future considerations for planning purposes	
10	new elementary + jr high to Sherwood Park or Fort Sask.	N	
11	do nothing	N	
12	move Colchester temporarily to Fultonvale for Sept 2013	see 1,2	temporary conditions
13	use Colchester as temp space for Fultonvale modernization	schedule won't permit	
14	continue to use PODS, modify modernization to lbe now school design		
15	ensure flexible space part of design	see 1,2	
16	Rotate gym in modernization	N	
17	Replacement school 2 stories - to limit footprint	not required	
18	Scale phase 1 to existing enrollment	see 1,2	
19	explore swing/decant space at Olympic centre	see 1,2	
20	explore space at Ministik- 12 minutes, and or Colchester	transition strategy	
21	explore community centres	transition strategy	
22	partial decant, leave jr high at Fultonvale	transition strategy	
23	partial relocation of students at Fultonvale on site during construction	transition strategy	
24	bring new portables on site at Fultonvale	transition strategy	
25	new Colchester, do nothing at Fultonvale or Ministik	N,see #3	
26	Develop K-3 new, use existing core of Fultonvale for Gr 4-9	N	

Appendix C Block Diagrams

STANDARD CORE SCHOOL (700 CAPACITY) OPTION ONE OPENING AT 600 CAPACITY

VALUE SCOPING SESSION - EIPS REGIONAL DIVISION NO. 14

SCALE : not to scale

FEBRUARY 10, 2012

PROJECT FILE: 12 002

Group2 architecture engineering

FULTONVALE SCHOOL OPTION TWO - EXTENT OF DEMOLITION

VALUE SCOPING SESSION - EIPS REGIONAL DIVISION NO. 14

SCALE : not to scale

FEBRUARY 10, 2012

PROJECT FILE: 12 002

LEGEND

AREAS OF DEMOLITION

Group2 architecture engineering

LEGEND

- CIRCULATION
- LIBRARY
- CLASSROOMS
- ADMINISTRATION
- ANCILLARY
- WASHROOMS
- GYMNASIUM
- MECHANICAL/CUSTODIAL
- STORAGE
- SCIENCE
- INFO SERVICES
- CTS
- BREAKOUT
- KITCHEN

N

FULTONVALE SCHOOL OPTION TWO

VALUE SCOPING SESSION - EIPS REGIONAL DIVISION NO. 14

SCALE : not to scale

FEBRUARY 10, 2012

PROJECT FILE: 12 002

Group2 architecture engineering

Appendix D – Cost Benefit Analysis

Under separate cover

Province of Alberta

SCHOOL ACT

CLOSURE OF SCHOOLS REGULATION

Alberta Regulation 238/1997

With amendments up to and including Alberta Regulation 85/2010

Office Consolidation

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Note

All persons making use of this consolidation are reminded that it has no legislative sanction, that amendments have been embodied for convenience of reference only. The official Statutes and Regulations should be consulted for all purposes of interpreting and applying the law.

(Consolidated up to 85/2010)

ALBERTA REGULATION 238/97

School Act

CLOSURE OF SCHOOLS REGULATION

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Definitions

1 In this Regulation,

(a) "closure" means any action referred to in section 2;

(a.1) "Ministers" means, for the purposes of sections 6 and 7, the Ministers determined under section 16 of the *Government Organization Act* as the Ministers responsible for Part 7 of the *School Act*;

(b) "school year" means the 12-month period beginning on September 1 and ending on the following August 31.

AR 238/97 s1;223/2002;257/2003

Non-application of sections

1.1(1) Sections 4 to 7 do not apply to a closure that occurs

(a) in connection with the transfer by one board to another board or to the operator of a charter school of the ownership of real property on which a school building is located and the school building will continue to be used for the instruction or accommodation of students,

(b) as a result of the Minister's having directed the board to dispose of the school building pursuant to section 200(3) of the Act, or

(c) pursuant to section 2(b) if

(i) the school has more than one education program,

(ii) the students in the grades being closed are all in the same education program, and

(iii) the education program referred to in subclause (ii) is to be transferred to another school.

(2) Where a board plans to transfer an education program pursuant to subsection (1)(c)(iii), the board shall organize and convene an information meeting for the purpose of informing the parents of the students affected by the transfer of the transfer and the alternative arrangements for continuing the education program at another school.

AR 135/2003 s2;257/2003;170/2004

Exemption from requirements

1.2(1) The Minister may, on the written request of a board or on the Minister's initiative, exempt a board from the requirements of sections 4 to 7 in respect of a closure that occurs

(a) as a result of the board's inability to comply with section 57(2) of the Act, or

(b) for health or safety reasons.

(2) The Minister may, on the written request of a board, exempt the board from the requirements of sections 4 to 7 in respect of a closure if the Minister is satisfied that the board has consulted with the community regarding any change in grades and programs in one or more of the schools operated by the board.

AR 257/2003 s4;170/2004

Closure of schools, etc.

2 A board may

(a) close a school permanently or for a specified period of time,

(b) close entirely 3 or more consecutive grades in a school, or

(c) repealed AR 257/2003 s5,

(d) transfer all students from one school building to one or more other school buildings on a permanent basis.

AR 238/97 s2;257/2003

Policies and procedures for closure of schools

3 A board may develop and implement policies and procedures with respect to closure of schools that are not inconsistent with this Regulation.

AR 238/97 s3;257/2003

Notification of proposed closure

4(1) Where a board is considering the closure of a school, the board shall

(a) raise the matter by way of a motion at a regular meeting of the board, and

(b) in writing notify the parents of every child and student enrolled in the school who, in the opinion of the board, will be significantly affected by the closure of the school.

(2) A notice referred to in subsection (1)(b) shall set out the following:

(a) how the closure would affect the attendance area defined for that school;

(b) how the closure would affect the attendance at other schools;

(b.1) information on the board's long-range capital plan;

(c) the number of students who would need to be relocated as a result of the closure;

(d) the need for, and extent of, busing;

(e) program implications for other schools and for the students when they are attending other schools;

(f) the educational and financial impact of closing the school, including the effect on operational costs and capital implications;

(g) the educational and financial impact if the school were to remain open;

(h) and (i) repealed AR 257/2003 s7;

(j) the time and location of the public meeting referred to in section 5(1)(a).

(3) A notice referred to in subsection (1)(b) may set out the following:

(a) the capital needs of the schools that may have increased enrolment as a result of the closure, and

(b) the possible uses of the school building or space in the school building if

(i) the entire school is being closed, or

(ii) 3 or more consecutive grades in the school are being closed entirely.

AR 238/97 s4;257/2003;170/2004

Public meetings

5(1) Where a board has given notice of motion at a regular meeting of the board that it is considering the closure of a school, the board

(a) shall organize and convene a public meeting for the purpose of discussing the information provided to the parents under section 4,

(b) shall provide an opportunity for the council of the municipality in which the school is located to provide a statement to the board of the impact the closure may have on the community, and

(c) may hold other meetings with respect to the closure at times and places as the board may determine.

(2) The date and place of the public meeting referred to in subsection (1)(a) shall be

(a) posted in 5 or more conspicuous places in the area or areas of the school or schools affected by the closure, for a period of at least 14 days before the date of the public meeting, and

(b) advertised in a newspaper circulating within the area or areas of the school or schools affected by the proposed closure, on at least 2 occasions as close as is practicable to the date of the meeting.

(3) At least 2 trustees of the board shall attend the public meeting referred to in subsection (1)(a).

(4) A board shall ensure that minutes of all public meetings held under this section are prepared.

AR 238/97 s5;257/2003

Decision on closure

6(1) A board shall not make a final decision on the proposed closure until at least 3 weeks have passed since the date of the public meeting referred to in section 5(1)(a).

(2) A board shall give due consideration to any written submissions on the proposed closure that it receives after the public meeting referred to in section 5(1)(a).

(3) A board

(a) shall by resolution decide whether to close the school, and

(b) if the decision is to close the school, shall forthwith notify the Ministers in writing of the decision.

AR 238/97 s6;223/2002;257/2003

Closure within school year

7(1) All school closure procedures shall be initiated and completed within the school year in which the decision to close the school is made.

(2) Notwithstanding subsection (1), on the written request of the board, the Ministers may extend the school closure procedures beyond one school year.

AR 238/97 s7;257/2003

Expiry

8 For the purpose of ensuring that this Regulation is reviewed for ongoing relevancy and necessity, with the option that it may be re-passed in its present or an amended form following a review, this Regulation expires on August 31, 2012.

AR 238/97 s8;223/2002;257/2003;163/2008;85/2010

9 Repealed AR 223/2002 s5.