Chapter 2

Department of Education and Early Childhood Development and School Districts - School Infrastructure Planning

Contents

AUDITOR GENERAL OF NEW BRUNSWICK | VÉRIFICATEUR GÉNÉRAL DU NOUVEAU-BRUNSWICK

School Infrastructure Planning – Department of Education and Early Childhood Development and School Districts

Report of the Auditor General – Volume I, Chapter 2 - August 2020

Why Is This Important?

- Over 97,000 students depend on 294 schools throughout our province. Almost $1 billion was budgeted for school infrastructure over last decade.
- The Auditor General previously expressed concerns regarding deferred maintenance of New Brunswick schools.
- Aging school infrastructure will require significant investments to maintain. If funding gap continues, the Department may face tough choices to either lower the quality standards for educational facilities or possibly shut down schools.

Overall Conclusions

- The Department and school districts invest significant effort preparing the annual Capital Budget, yet funding decisions are not always evidence-based or objective.
- The major capital project assessment tool (for projects greater than $1 million) is a positive step toward evidence-based decision making. However, weaknesses in Department's design and application of this tool calls into question the objectivity of capital investment decisions.
- Lack of a comprehensive long-term plan and lack of a protected stream of predictable capital funding result in a reactionary approach.
- There is no unified prioritization process for all types of projects within the capital improvement program (projects less than $1 million).

What We Found

Insufficient school capital planning process

- No comprehensive province-wide long-term capital plan
- Department does not exercise effective central oversight of school infrastructure planning
- No comprehensive plan to address school deferred maintenance (around $280 million)
- Short-term and reactive planning leads to sub-optimal funding allocations while school conditions deteriorate

Override of recommended proposals

- Unexplained Cabinet approval of projects different than those prioritized and recommended by Department
- Department's recommended projects do not always match those generated by its project ranking tool

Inadequate capital funding prioritization process

- Deficiencies in the process prevents Department from consistently making evidence-based decisions
- Funding of school repair and maintenance projects identified by school districts is not based on the conditions of our schools or industry standards

Insufficient and poor-quality facility condition data

- Insufficient and poor-quality data used by school districts and the Department in planning capital improvement projects identified by school districts
- No centralized province-wide database of major building components

Key Findings and Observations Table

School Infrastructure Planning – Department of Education and Early Childhood Development and school districts

Paragraph	Key Findings and Observations
	Inadequate Capital Funding Prioritization Process
2.26	*School districts believe QBL analysis tool is an improvement over past practice*
2.27	*Lack of standardized QBL project submissions for major capital projects*
2.30	*QBL supporting documents for 2015-16 earlier years could not be easily obtained from the Department*
2.32	*School districts have little information on how QBL works in assigning scores to projects*
2.34	*Feedback school districts received on submitted projects is insufficient to inform planning for future major capital projects*
2.36	*Errors in Grand Bay Area School QBL score resulted in the project being improperly ranked*
2.37	*The QBL ranking for Hanwell K-8 School project did not match the one recommended by the Department*
2.38	*Improper QBL score calculation for new school projects*
2.43	*Tiered approach (outside of QBL parameters) put Hanwell K-8 and Moncton 6-8 schools as "must-dos" in 2019-2020*
2.44	*Tiered approach (outside of QBL parameters) used in 2018-2019 for École de Moncton land purchase*
2.45	*The change management process for QBL was informal and incomplete*
2.48	*Insufficient data validation and quality review process for QBL assessments*
2.51	*Several QBL indicators require improvement to increase the objectivity of capital investment decisions*
2.53	*Department's simplified method for forecasting student population could inappropriately affect QBL ranking*
2.57	*School districts are not in full compliance with policy 409 "Multi-year School Infrastructure Planning", and the Department does not enforce compliance*

Key Findings and Observations Table (Continued)

Paragraph	Key Findings and Observations
	Capital Improvement Program
2.60	*No standardized prioritization process for capital improvement projects across all school districts*
2.62	*Decision-making for capital improvement projects identified by school districts based on insufficient information*
2.63	*The Department's funding allocation for capital improvement projects is not based on the condition of the school buildings or industry standards*
2.66	*Student population and square footage of school facilities may not be the appropriate bases to allocate capital improvement funding*
2.67	*The prioritization process, rationale and risk assessment for capital improvement projects are not well documented at school districts*
2.68	*No clear and consistent definition of "special projects"*
2.70	*There is no unified prioritization approach for all types of capital improvement projects*
	Override of Recommended Proposals
2.73	*Several instances where the Department did not follow the QBL ranking*
2.76	*Cabinet has approved projects different than those put forward by the Department*
2.79	*Premier's Office approved Woodstock High School auditorium project outside of normal process*

Key Findings and Observations Table (Continued)

Paragraph	Key Findings and Observations
	Insufficient Capital Planning Process
2.84	*We believe the Department, as legislated owner of school facilities, is responsible for central oversight of school infrastructure planning*
2.86	*There is no comprehensive province wide long-term capital plan for schools*
2.90	*Many Canadian provinces have either multi-year infrastructure plans or support for school capital planning*
2.92	*P3 schools have a protected stream of funding, while provincially owned schools have to go through an annual budget cycle*
2.93	*The Department does not have a specific plan to address $282.7 million in significant deferred maintenance issues*
2.94	*Lack of long-term planning impacts the ability of school districts to implement proactive lifecycle management*
2.96	*Government's reactionary approach to capital project funding creates uncertainty in the education system*
2.96	*Bessborough and Hillcrest Schools are examples of uncertainty created by government change*
2.98	*Modular classrooms increased in recent years*
2.100	*Examples showed student enrolment projections were significantly lower than actual*
2.101	*The lack of long-term planning and province-wide approach to enrolment projection may have contributed to the increased use of modular classrooms*
	Insufficient and Poor-Quality Facility Condition Data
2.105	*There is no centralized province wide database of major school building components*
2.107	*We believe the Department, as asset owner, is responsible for developing and maintaining centralized capital asset database*
2.108	*Incomplete and unreliable data used in capital improvement project planning process for projects identified by school districts*
2.109	*Risk of knowledge loss due to lack of documentation at school districts*
2.110	*School districts do not adequately document school facility condition*
2.111	*Changing facility conditions not documented in visual inspections by district staff*

Recommendations and Responses

Recommendation	Department's response	Target date for implementation
2.29 We recommend the Department, in collaboration with school districts, develop a standardized major capital project submission form for school districts to collect and present major capital project information.	*The Department and the school districts constantly communicate throughout the year to maintain and manage the infrastructure portfolio for the public school system. The Department provides resources for districts to undertake studies and analyze infrastructure requirements to identify district capital programs and projects. The districts share the results with the Department. There is a standing list of unfunded provincial infrastructure projects from the previous year's submission which is reviewed and updated annually based on the District submissions, as per the Education Act and Policy 409. In accordance with Policy 409, the DEC is required to submit the district capital project requirements to the Minister by May 31 each year. The Department then undertakes the QBL process which is designed to use centrally held and verified data, rather than use unverifiable data provided by seven different school districts. During the process, the Department staff will reach out to the district staff on a case-by-case basis to clarify project details, if required. Article 2.28 of the audit refers to a departmental ad hoc approach based on comments from two out of seven districts that were not actually verified with the department, and then concludes that a lack of standardized submissions by the DECs puts the QBL scoring process at risk of subjective assessments. Because the QBL relies on centrally controlled data for assessment and the Department and District staff work collaboratively prior to the DEC submission on defining capital project scopes, the DEC submission format has no impact on the QBL scoring process. This being said, the Department will undertake a review of Policy 409 collaboratively with the districts in response to both recommendations 2.29 and 2.58 to ensure the policy is reflective of expected practices and provides appropriate guidance and support to the capital program process.*	*March 2022*

Recommendation	Department's response	Target date for implementation
2.31 We recommend the Department create a centralized repository for all historical and current QBL assessments and their supporting documents.	*The Department has a centralized repository for QBL assessments and a standard for documentation. The QBL process did not exist earlier than the 2015-16 process. The projects from the first year the QBL implementation had not been collected on a central drive. All QBL analysis and results since implementation are now on a common drive and easily accessible.*	*Complete*
2.49 We recommend the Department implement a formal change management process for the Quadruple Bottom Line Multi-Criteria Analysis. The process should include but not be limited to: • **Clear approval path depending on the significance of the change;** • **Consultation with all key stakeholders such as school districts changes; and** • **Formal approval and documentation of changes before they are applied.**	*The QBL was designed as a tool, in collaboration with the school districts, for Department staff to objectively and consistently prioritize five different types of Capital Projects. As outlined in exhibit 2.4, the QBL provides information to inform Cabinet on Capital Program budget discussions; the results of the QBL are considered confidential as advice to Cabinet. Unless the results are released by Government, the Department cannot discuss specific results publicly. There is a communication process to the DECs. After DEC elections, staff from the Department visit DECs and brief them on the Capital Program process and the QBL. As part of the QBL process, the indicators are reviewed annually based on lessons learned from the previous year. Each year, the Minister is briefed on the process prior to project analysis. Once approved, the staff gather the data and create a file for each project over a two-month period. A team is created to jointly assess all the project files over a two to three-day period to ensure consistency of assessment and scoring. This year, a formal process of QBL change management is being developed and applied involving the districts. The approval process for changes will be formally recorded and documented.*	*March 2021*

Recommendation	Department's response	Target date for implementation
2.50 We recommend the Department implement a data validation and quality review process for Quadruple Bottom Line Multi-Criteria Analysis.	*The Department acknowledges that lessons have been learned since the inception of the QBL process and that continuous improvement is necessary in any process. Checks and balances are in place to mitigate this potential risk of human error. As identified 2.36, there was an error in assessing the Grand Bay area school in 2017 for the 2018-19 capital program submission. In other years, the project scored consistently with the data variables between assessment years with demographic changes, building conditions, education programming changes, etc. A process is currently in place to ensure a more rigorous review process is applied.* *However, other comments in the AG report state or imply errors that require clarification, less they are taken out of context. In article 2.38, the report found a discrepancy in the application of Indicator 4. When the QBL was developed and applied the first year, the indicator was not applied to new schools because new schools have no facility condition to assess. The impact of this was not apparent until after the first application of the tool. As per the review process stated above, the QBL scoring was revisited and revised. Although a new school had no "Facility Condition", the schools in the catchment area of the new school did. Using an average of the facility condition score of these schools, the indicator was then applied to new schools. Unfortunately, the indicator documentation was not updated to reflect this change, so the report identified it as a discrepancy. A review of the application of Indicator 4 for all new school projects from the 2016-17 submission to 2019-20 reflect this consistent application. If one refers to Exhibit 2.9, it is evident how new schools initially scored low in the first year and subsequently scored higher. The Indicator 4 description was updated to reflect present practice since the report identified this documentation error.* *The two other discrepancies to clarify are the Tiering process and the 2019-20 capital program submission.* *At the time of the QBL development in 2013-14, the provincial school population had consistently decreased so the major infrastructure capital concerns were aging and underutilized schools. In 2017-18, the situation changed significantly. The rural to urban demographic shift was compounded by the influx of refugees and the impact of successful provincial efforts to increase immigration. The pressure on school space in specific areas was increasing. It was recognized that the QBL was not able to address this situation. It is approximately a four-year process from the Department submitting a New School project for*	*Complete; process used for 2020-21*

Recommendation	Department's response	Target date for implementation
	funding approval to a school being ready for occupancy. Subsequently the tiering process was developed. The tiering process is based on a threshold analysis of teaching platforms (classrooms, science labs, art and music rooms, vocational labs, gymnasiums). If the existing schools supporting the student population for the new school have an average deficiency of 15 percent or more of teaching platforms based on the education design guidelines, then the project is further assessed based on demographic projections. If demographic projections indicate a continual growth, the project is Tier 1. If the projections are flat or declining, the project is scored and ranked through the QBL. If there are more than one Tier 1 project they are ranked based on three factors: percentage of teaching platform deficiency; percentage increase in projected growth; and total population of students impacted. This tiering process mitigates the potential for significant overcrowding in schools. In article 2.45 the AG report indicates other schools with a significant lack of space due to the number of modular classrooms. This is a poor measure as the number of modulars do not reflect the actual pressures on conformance to the Education Guidelines for teaching platforms. *The 2019-20 Capital Budget submission discrepancy requires context. This was an election year. The Capital Budget submission was prepared in the summer and fall using the QBL with the required briefings to senior management as described earlier. The original submission preparation followed the past years process, assuming there would be a similar call letter for the Department's capital program requirements. A new government was elected, and the new minister received a briefing on the QBL process, the results, and the recommended Department submission. Article 2.43 refers to the direction the Department received from the new Government. The memo dated 16 November 2018, a copy of which was provided to the auditor, advised all departments to submit no new projects and to review all previously approved and funded projects under three categories: must do; can be deferred; and do not proceed. The Department identified all projects or phases of a project presently under construction as must do projects. Projects or phases of projects that were in the various stages of design were identified as "can be deferred" projects. The two exceptions proposed by the Department were École Moncton and Hanwell. These were identified as must do projects based on the Tier 1 criteria. All projects identified as "must do", including these two projects, were approved by Government. The "can be deferred" projects were deferred by Government.*	

Recommendation	Department's response	Target date for implementation
2.54 We recommend the Department use a rolling average method to predict the student enrolment trends.	*Since the inception of the QBL, the tool has, and will continue to be, evaluated and modified as part of continuous improvement process. One of the greatest challenges facing the capital program for schools is forecasting student populations. The act of building a new school often influences developers and families, resulting in an increase in population that is not predictable. Similarly, the creation or closure of a large local employer will shift demographics quickly over a couple of years. Neither the methodology used by the QBL for Indicator 2 nor the rolling average methodology proposed by the report provide an accurate prognosis – both are rearward looking. Drastic changes are flattened and therefore significant shifts in trends are identified after the fact. The Department is investigating the use of more effective predictive applications for medium to long-term demographic trends. The Department will use the rolling average methodology until a better predictive tool is available.*	*Complete. Further investigation to be completed by March 2021 on a better predictive tool.*

Recommendations and Responses (continued)

Recommendation	Department's response	Target date for implementation
2.55 We recommend the Department improve the Quadruple Bottom Line Multi-Criteria Analysis tool to: • **Address the weaknesses in the indicators listed in Appendix IV of the report and increase its overall objectivity; and** • **Incorporate a scoring mechanism to capture space deficiencies, instead of the tiering approach.**	*As part of continuous improvement to the QBL, the Department reviewed the recommendations identified by the report in Appendix IV. This review was done with the school districts as described in 2.49 above and the documentation is being revised accordingly. The results are:* - *Indicator 4: Facility age will continue to be a factor considered as it is noted as an industry standard (As quoted in Section 2.64, "assets that have the highest average age relative to their expected lives…"* - *Indicator 6: This indicator has been updated, as has Indicator 5 to avoid possibility of double counting* - *Indicator 9 measures have been revised; measure #2 was removed. The remaining measures within the indicator will not change.* - *Indicators 14 and 15 have been revised; statistics will be confirmed and validated. References to "significant" or "moderate" impacts have been removed.* *The tiering approach will remain. It only applies to projects that surpass a teaching platform deficiency threshold and have a trending population increase. The data used to determine teaching platform deficiencies, the population trending and the number of students impacted is objective and the results identify an urgent requirement for additional pedagogical infrastructure.*	*Complete*
2.56 We recommend the Department publicly report the annual major capital project rankings and scores based on the Quadruple Bottom Line Multi-Criteria Analysis.	*Government has committed to release the ranking results of the QBL. The details of the QBL process were released in the fall of 2019.*	*Complete*

Recommendation	Department's response	Target date for implementation
2.58 We recommend the Department re-evaluate the document submission requirements for school districts in Policy 409 *"Multi-year School Infrastructure Planning"* and enforce the policy.	*As discussed in the response to 2.29, the Department will undertake a review of Policy 409 collaboratively with the districts in response to both recommendations 2.29 and 2.58 to ensure the Policy is reflective of current practices and provides appropriate guidance and support to the capital program process.*	*March 2022*
2.71 We recommend the Department establish a clear definition of "special project" and apply it consistently to minimize potential for subjective interference in capital improvement funding allocation.	*The process for the planning of the Capital Improvement Program involves the status of major systems across the province, federal/provincial initiatives and district priorities. This program is not discreet, it is directly impacted by the Major Capital Program as well as the maintenance program. Although the program is only funded from one fiscal year to the next, projects may overlap over fiscal years, and unforeseen costs may be incurred, particularly when dealing with older facilities. As a result, these requirements, when they occur, are funded out of the Capital Improvement budget as a priority. This approach has been consistently applied. As per the report recommendation, a formal definition of a special project has been established in writing for future reference.*	*Complete*

Recommendation	Department's response	Target date for implementation
2.72 We recommend the Department, in consultation with school districts, develop consistent criteria for the provincial prioritization of capital improvement projects. In developing the criteria, building conditions, life cycle costs, and industry standards should be used.	*The Department has a defined process and criteria for the development of the priority list for the capital improvement projects. The description of the Capital Improvement Program in articles 2.16 to 2.22 and the analysis from 2.59 to 2.70 is not complete nor correct. The exhibit of 2.5 is correct. The Capital Improvement Program is managed as a balance between provincially prioritized pan-provincial projects and district priority projects.* *The province has identified the major common building systems or compliance requirements across the province and has developed industry standard inspection processes to maintain these requirements, in priority, through pan-provincial projects. The roofing program mentioned in 2.18 is one such program for the school roofing systems. Other systems include elevators, dust extractor systems, sprinkler systems, building control systems, water quality, and lighting, as well as building code compliance for radon and asbestos. The criteria used for the determination of requirements is industry-based and standard for all seven districts. The method of measurement is universal, and prioritization occurs at the provincial level. This accounts for approximately half of the Capital improvement allocation. The response to 2.71 above explains the funds that may be allocated for a special project, should the requirement arise.* *The allocation of the approximate 70/30 split of the remaining 50% of funding to the sectors is based on student population between sectors and complies with the section 44(1) of the Education Act. Although in article 2.66, the report challenges this application of equitable division and balance that the Department has established with the Districts and DECs, stating a view that is contrary to interpretation of the Education Act by the Department. To be clear, the Department has an objective that all schools in each education sector be in good condition. The Department relies on the professional staff at the school districts to identify district priority projects within their allocation and brief their DECs on the requirements. The district staff know the buildings. DEC submissions are reviewed by the Department before approval to ensure there are no anomalies in a submission. It is important to note that DECs are an elected body representing the school district and have a legal responsibility under the Education Act.* *Twice a year the Department host a formal two to three-day conference with all seven school districts to discuss a number of topics. The Capital Program and process is a standing item. Concerns, recommendations, provincial pilot projects, etc, are discussed and developed on a regular basis the district staff. The department will raise this recommendation with the school districts to determine if more criteria are required.*	*March 2021*

Recommendation	Department's response	Target date for implementation
2.103 We recommend the Department, in consultation with school districts, re-evaluate the student enrolment projection method and implement a province-wide student population forecasting approach.	*Since the inception of the QBL, the tool has, and will continue to be, evaluated and modified as part of continuous improvement process. One of the greatest challenges facing the capital program for schools is forecasting student populations. The act of building a new school often influences developers and families, resulting in an increase in population that is not predictable. Similarly, the creation or closure of a large local employer will shift demographics quickly over a couple of years. Neither the methodology used by the QBL for Indicator 2 nor the rolling average methodology proposed by the report provide an accurate prognosis – both are rearward looking. Drastic changes are flattened and therefore significant shifts in trends are identified after the fact. The Department is investigating the use of more effective predictive applications for medium to long-term demographic trends.*	*Further investigation to be completed by March 2021 on a better predictive tool.*

Recommendations and Responses (continued)

Recommendation	Department's response	Target date for implementation
2.104 We recommend the Department develop a long-term province-wide capital plan for school infrastructure. The plan should include items such as: • **Projects that are fully scoped, estimated and ready to be delivered in the short to medium term (3 to 5 years);** • **A broad long-term funding allocation based on an analysis of school facility data and projected budget plan; and** • **All key elements of the long-term infrastructure sustainability recommendation AGNB made in 2012:** o **the rationalization of assets (i.e. if not considered essential, remove from service);** o **a long-term approach to budgeting which includes life cycle maintenance;** o **a protected stream of a base level of funding**	*There is a long-term province-wide capital plan that is reviewed every year. The plan is adjusted based on the results of the annual capital budget process. Specific to the bullets in the recommendation:* • *Projects identified for the short to medium term are fully scoped, estimated and ready for funding approvals.* • *A broad long-term funding allocation is not within the authority of the department; however, the Department is prepared to action such a funding program.* • *With respect to all key elements of the long-term infrastructure sustainability recommendation AGNB made in 2012* o *The rationalization has successfully occurred and is incorporated in the QBL indicators. Since 2011, the number of schools in the province has decreased from 317 to 294.* o *As stated above, a long-term approach to budgeting is a government decision, not a departmental.* o *There is base line funding for maintenance for districts within the operational budget allocation for a school district. It is not protected; districts have the authority to reallocate funding within their budget to meet operational requirements. Districts may increase or decrease the baseline funding for maintenance depending on the circumstances during a fiscal year.* o *A 15 to 20-year planning horizon is adjusted every year, based on the results of the annual capital budget process.* o *As described in this AG report, new schools are only constructed when there is a clearly defined requirement as presented in the Tier process or QBL. New school projects, midlife upgrades, additions, rationalization projects and school replacement projects are first identified by the DEC as part of their obligation to determine the requirements for their constituents and submitted to the Minister. Subsequently the projects are analyzed and ranked using the QBL process, ensure the projects of*	*N/A*

Recommendation	Department's response	Target date for implementation
determined necessary to adequately maintain schools in service; ○ **a 20-year planning horizon;** ○ **a process whereby new schools are constructed only when there is a business case to support the need. This should include redirecting savings from rationalized assets (school closures) to the new school's life cycle maintenance costs; and** ○ **provide annual public performance reporting, which includes the 5-year project delivery plan, the actual facility condition of schools versus pre-established targets, explaining the reason for any significant variances.**	*greatest need provincially are identified and prioritized. **Note**. The recommendation to redirect savings from rationalized assets to the life cycle maintenance cost of the new school is not done. Following this recommendation would result in districts that have rationalized schools receiving more operational funding than districts with population increases that required new schools. This recommendation from the 2012 report appears to be contradictory to the centralization principle for allocation of resources being promoted in this AG report.* ○ *The concept of an annual report for the 294 schools at the provincial level is not supported by the budgeting process and the operational responsibilities of the DEC/district versus the Department. DECs are accountable to their constituents and conduct their review and approval of the capital program and operational budget in public forums. A five-year delivery plan requires a five-year budget; this is not the present government funding model.*	

Recommendation	Department's response	Target date for implementation
2.116 We recommend the Department, in consultation with school districts, develop and maintain a centralized asset inventory that contains details of all major facility components to support the Department's capital planning.	*There is an inventory of major critical components at both the provincial and district levels which are supported through provincial programs based on regulatory requirements and industry standards. These components include roofs, elevators, control systems, sprinkler systems, dust extraction systems, building controls systems as well as safety systems for radon, asbestos, water quality and energy efficiency programs for items such as lighting. Regardless, the expert consultant strongly recommended the department invest in a centralized inventory management system, a business line product of the company. In summary, the department does enforce inspection and data collection standards appropriate for the key facility systems. Facility systems are added or removed from the provincial level based on Building Code requirements, Health Canada/New Brunswick Public Health directives and Work Safe New Brunswick requirements. Other systems are added or removed such as T8/T124 light replacements, based on industry practice, in collaboration with DTI and the school districts as part of the discussions at the biannual district conference. For the next conference, the AG report will be discussed in detail.*	*Further action will be determined after consultation with the school districts.*
2.117 We recommend the Department develop and enforce data collection standards and requirements for the uniform collection and aggregation of facility data across all school districts.	*See 2.116 above*	*See 2.116 above*

Audit Introduction

2.1 Over 97,000 students depend on our school infrastructure to learn, play and grow on a daily basis. In our 2012 Report of the Auditor General, we emphasized the need for a comprehensive long-term infrastructure plan that will ensure the sustainability and safety of all essential infrastructure. We recognize there has been insufficient capital funding available to address all infrastructure needs within the education sector. Therefore, it is more crucial than ever for the decision makers in government to make evidence-based decisions when prioritizing school infrastructure projects.

Why we chose this topic

2.2 We chose to audit school infrastructure planning for the following reasons:

- condition of facilities has an impact not only on educational outcomes but on the well-being and safety of students and teachers;
- the Auditor General previously expressed concerns regarding deferred maintenance of New Brunswick schools. The 2011 Report stated that if the situation continues, additional unanticipated school closures like the 2010 mid-year school closure of Moncton High School and Polyvalente Roland-Pépin in Campbellton, will continue;
- the Auditor General also stated in her 2012 Report: "*Our Province needs a comprehensive long-term infrastructure plan that will ensure the sustainability and safety of all essential infrastructure, including highways, hospitals, schools, bridges, etc while respecting the fiscal challenges faced by the Province."* We wanted to see if the Department has applied this recommendation to schools; and
- there is a significant amount of capital funding allocated to build and maintain school infrastructure every year. The total capital budget for the last ten years was $976.5 million.

Audit Objective

2.3 The objective of this audit was to determine whether the Department of Education and Early Childhood Development (the Department) and school districts are making evidence-based decisions for prioritizing:

- **major capital projects** for school infrastructure (estimated cost greater than $1 million); and
- **capital improvement projects** for existing school infrastructure (estimated cost from $10,000 to $1 million).

Audit Scope and Approach

2.4 We examined the capital asset planning process, including the prioritization of major capital projects and capital improvement projects. The primary focus of this audit is at the Department. Particularly, we tested the Quadruple Bottom Line Multi-Criteria Analysis (QBL), a tool the Department has been using since 2014 to prioritize major capital projects, and the method the Department adopted to allocate the capital improvement program budget. A brief description of the QBL can be found in Appendix I. Four Public Private Partnership (P3) schools were not included in our scope, as capital asset planning for these schools is performed by private-sector consortiums who own the facilities.

2.5 In addition, we reviewed the quality of information used by the Department and school districts to make objective, evidence-based funding decisions. We interviewed staff from the Department and school districts and visited selected school sites. We selected two school districts as our sample to perform detailed audit work. We engaged an independent expert to assist in our audit work. Findings and recommendations from the expert's work are included in this chapter.

2.6 More details on the audit objectives, criteria, scope and approach used in completing our audit can be found in Appendix II and Appendix III.

Conclusions

2.7 We concluded:

- The Department and school districts invest significant efforts in the preparation of the annual capital budget, yet capital funding decisions are not always evidence-based or objective.
- The current reactive approach to lifecycle management of school facilities is caused by the lack of comprehensive long-term capital planning and lack of a protected stream of funding.
- The Quadruple Bottom Line Multi-Criteria Analysis (QBL) adopted in 2014 appears to be an improvement towards evidence-based decision making for major capital projects. However, weaknesses in its design and application negatively impacted the objectivity of the QBL.
- There is no unified prioritization process for all types of projects within capital improvement program.
- The Department's funding allocation for capital improvement projects identified by school districts is not based on the condition of school facilities or industry standards.
- Insufficient and poor-quality school facility data makes it difficult for the Department and school districts to plan and prioritize capital improvement projects identified by school districts.

2.8 If unaddressed, weaknesses identified in this report will increase the risk of:

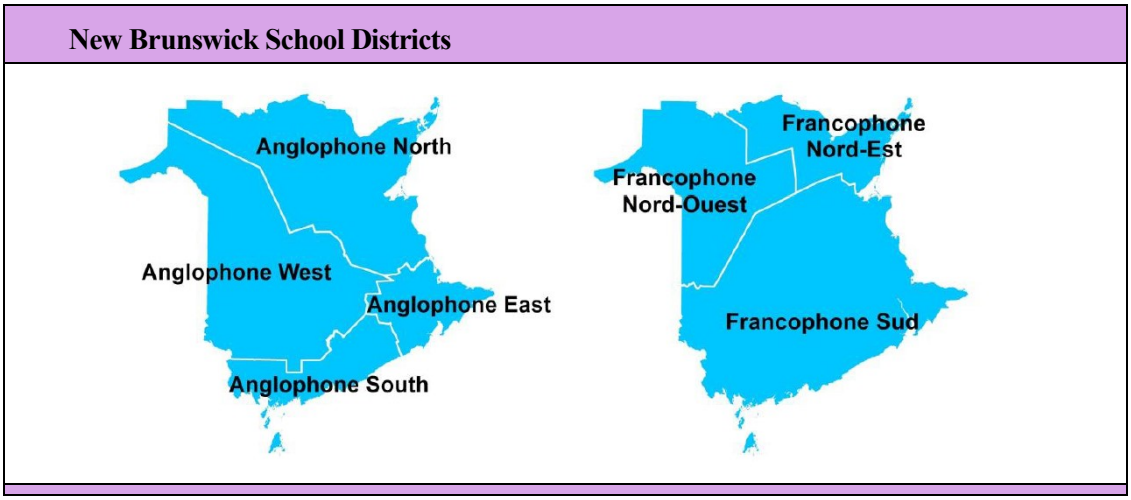
- inappropriate funding decisions;
- unplanned school shutdowns; and
- higher lifecycle cost of school assets.

Background Information

294 schools in New Brunswick with a total book value of $1.9 billion capital assets

2.9 The condition of a school has a direct impact on students' achievement[1]. Currently there are 294 schools in New Brunswick, including four Public Private Partnership schools. The total book value of capital assets used by these schools is $1.9 billion, with a net book value of $1 billion on the Province's financial statements as at 31 March 2019. Over 97,000 students from Kindergarten to Grade 12 are in schools each day. The Province has seven school districts, three Francophone and four Anglophone. Exhibit 2.1 shows the school districts for each sector.

Exhibit 2.1 – New Brunswick School Districts



Source: Le Guide du conseiller*, Conseils d'éducation de district, Fédération des conseils d'éducation du Nouveau-Brunswick*

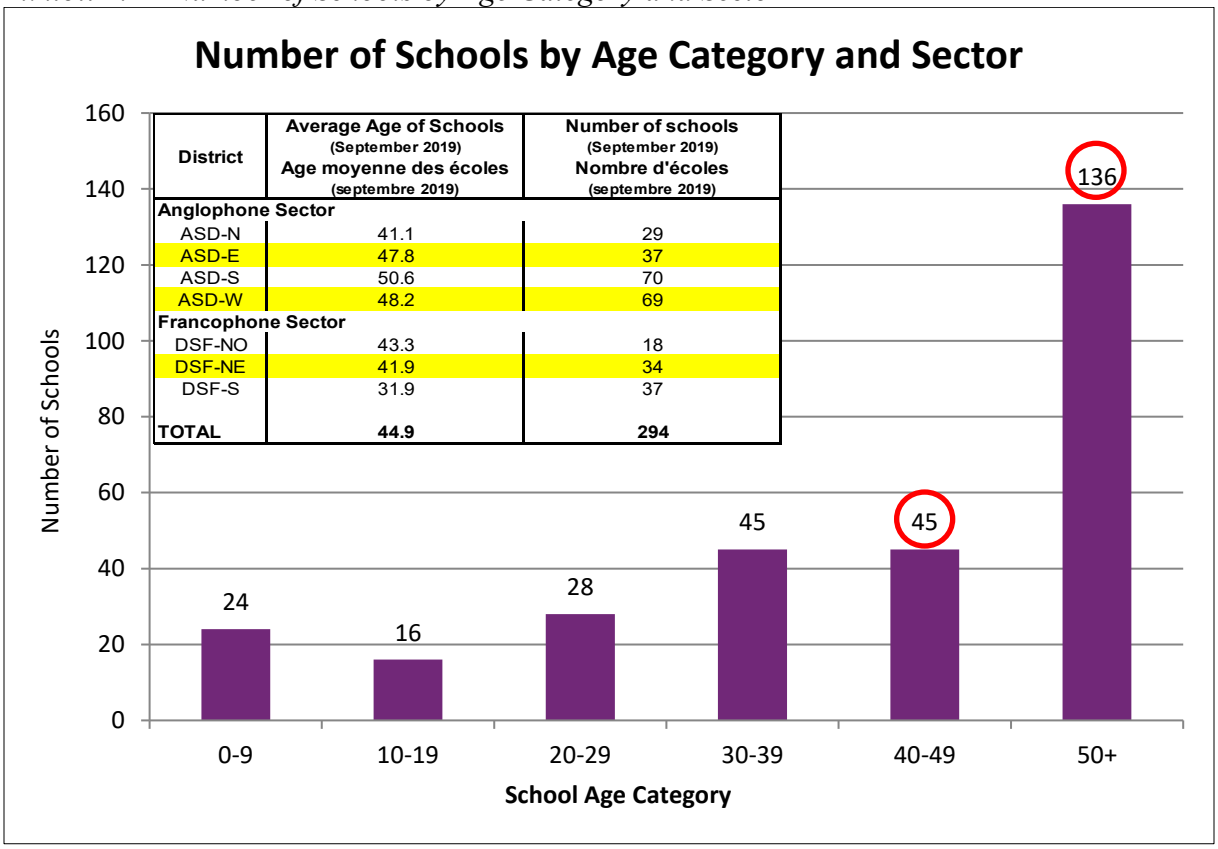
[1] A Framework for Efficient Condition Assessment of the Building Infrastructure, Shipra Singh Ahluwalia, University of Waterloo

60% of our schools are more than 40 years old

Significant investment in maintenance, renovation or replacement of New Brunswick schools required

2.10 The average age of school buildings in New Brunswick is almost 45 years and over 60% of school buildings are more than 40 years old. Exhibit 2.2 below shows a distribution of school buildings by age together with the number and average age of schools by school district. Statistics Canada estimates the service life of education buildings at about 40 years[2]. As of September 2019, New Brunswick had 181 schools age 40 years or older. Therefore, significant investment in maintenance, renovation or replacement of New Brunswick schools is likely to be required over the next several years.

Exhibit 2.2 - Number of Schools by Age Category and Sector



District	Average Age of Schools (September 2019) Age moyenne des écoles (septembre 2019)	Number of schools (September 2019) Nombre d'écoles (septembre 2019)
Anglophone Sector		
ASD-N	41.1	29
ASD-E	47.8	37
ASD-S	50.6	70
ASD-W	48.2	69
Francophone Sector		
DSF-NO	43.3	18
DSF-NE	41.9	34
DSF-S	31.9	37
TOTAL	**44.9**	**294**

Source: provided by the Department of Education and Early Childhood Development (unaudited)

[2] Measuring change in the age of education infrastructure, Statistic Canada https://www150.statcan.gc.ca/n1/pub/81-004-x/2009005/article/11049-eng.htm

The Department of Education and Early Childhood Development is the owner of most educational facilities

2.11 The Educational Facilities and Pupil Transportation Branch within the Department provides districts with support and expertise in the planning and management of educational facilities and pupil transportation. The objective of this Branch is "*to create a healthy and secure learning and working environment as well as the implementation of a safe and efficient pupil transportation service"*. Unlike other capital assets of the Province such as highways, bridges and government buildings which are owned by the Department of Transportation and Infrastructure (DTI), the Department of Education and Early Childhood Development (Department) owns all educational facilities except:

- private schools;
- schools owned by the Saint John Diocese;
- Ecole Sainte-Anne (owned by DTI); and
- Public Private Partnership schools (Leo Hayes High School in ASD-W, Northrop Frye School and Evergreen Park School in ASD-E, and Eleanor Graham Middle School in ASD-N).

2.12 There are two types of capital programs within the Department for school infrastructure:

- **Major capital program** (estimated project cost greater than $1 million). Projects in this program include:
  - new construction for increased population;
  - rationalization projects;
  - major renovations / additions; and
  - mid-life upgrades.
- **Capital improvement program** (estimated cost ranges from $10,000 to $1 million). This covers activities such as repairing electrical systems or fixing exterior walls.

Major capital program accounts for nearly 80% of total capital expenditures of the Department

2.13 The major capital program accounts for nearly 80% of total capital expenditures of the Department. Exhibit 2.3 shows the breakdown between these two programs in recent years.

Exhibit 2.3 – Capital Budget Breakdown Between Major Capital Program and Capital Improvement Program during the last 5 Years

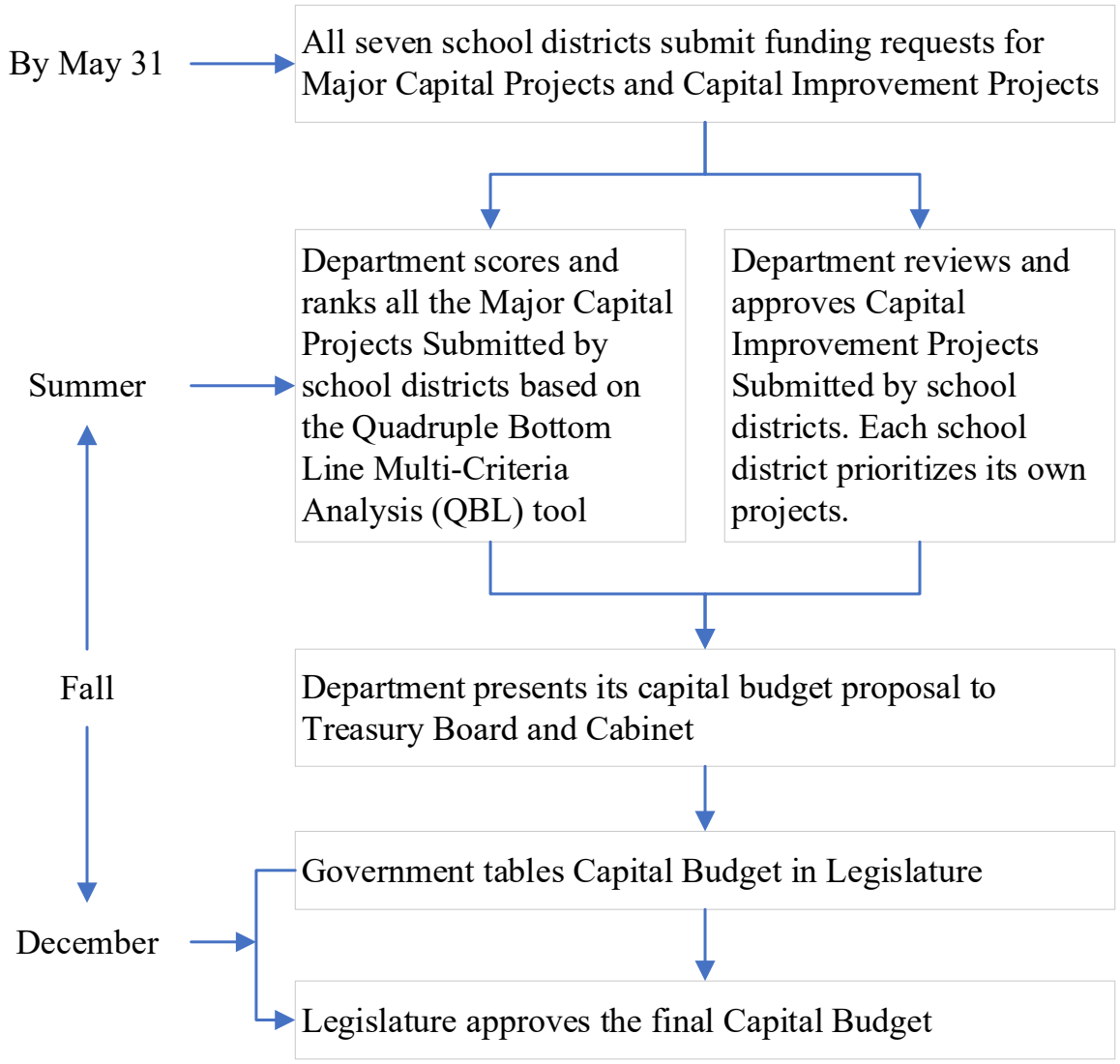
	$ (millions)				
	2015-16	**2016-17**	**2017-18**	**2018-19**	**2019-20**
Major capital program	$72.8	$88.6	$66.9	$87.5	$41.8
Capital improvement program	20.5	17.5	17.4	18.4	18.4
Other (lighting retrofit)	2.5	2.5	3.8	NA	NA
Total capital budget	**$95.8**	**$108.6**	**$88.1**	**$105.9**	**$60.2**

Source: created by AGNB based on information provided by the Department (unaudited)

The annual government capital budgeting process is very short-term focused, given the long-term nature of the capital assets involved (i.e. schools)

2.14 Exhibit 2.4 describes the typical annual capital budgeting process for major capital program. The Government of New Brunswick tables a Capital Budget on an annual basis. It should be noted District Education Councils have an important role in both the major capital and capital improvement programs. They are actively involved in project selection and recommendations to the Department. The annual government capital budgeting process is very short-term focused, which is contrary to the long-term nature of the capital assets involved (i.e. schools).

Exhibit 2.4 – Typical Annual Capital Budgeting Process for Major Capital Program



Source: created by AGNB with information provided by the Department

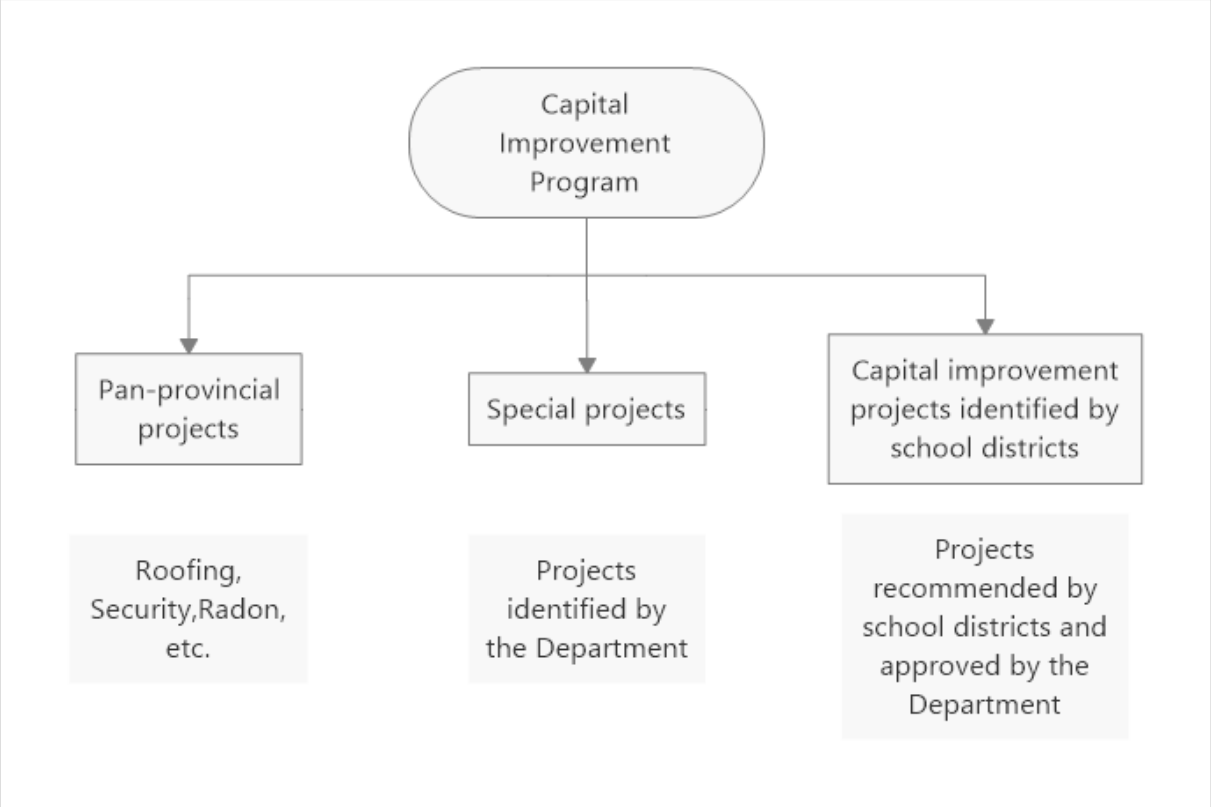
Capital Improvement Program

2.15 The capital improvement program mainly consists of three types of projects:

- special project,
- pan-provincial project; and
- project identified by school districts.

2.16 The description of each type of project can be found in Exhibit 2.5. The Department has allocated approximately $18.4 million of its total capital budget to this program. The breakdown of 2019-2020 capital improvement budget is listed in Exhibit 2.6. The three types of projects receive different levels of priority. Funds are first available to special projects (which are deemed necessary by the Department) and pan-provincial projects. Then, the Department allocates the rest of capital improvement budget using a formula based on student population and square footage of school buildings.

Exhibit 2.5 – Types of Project within Capital Improvement Program

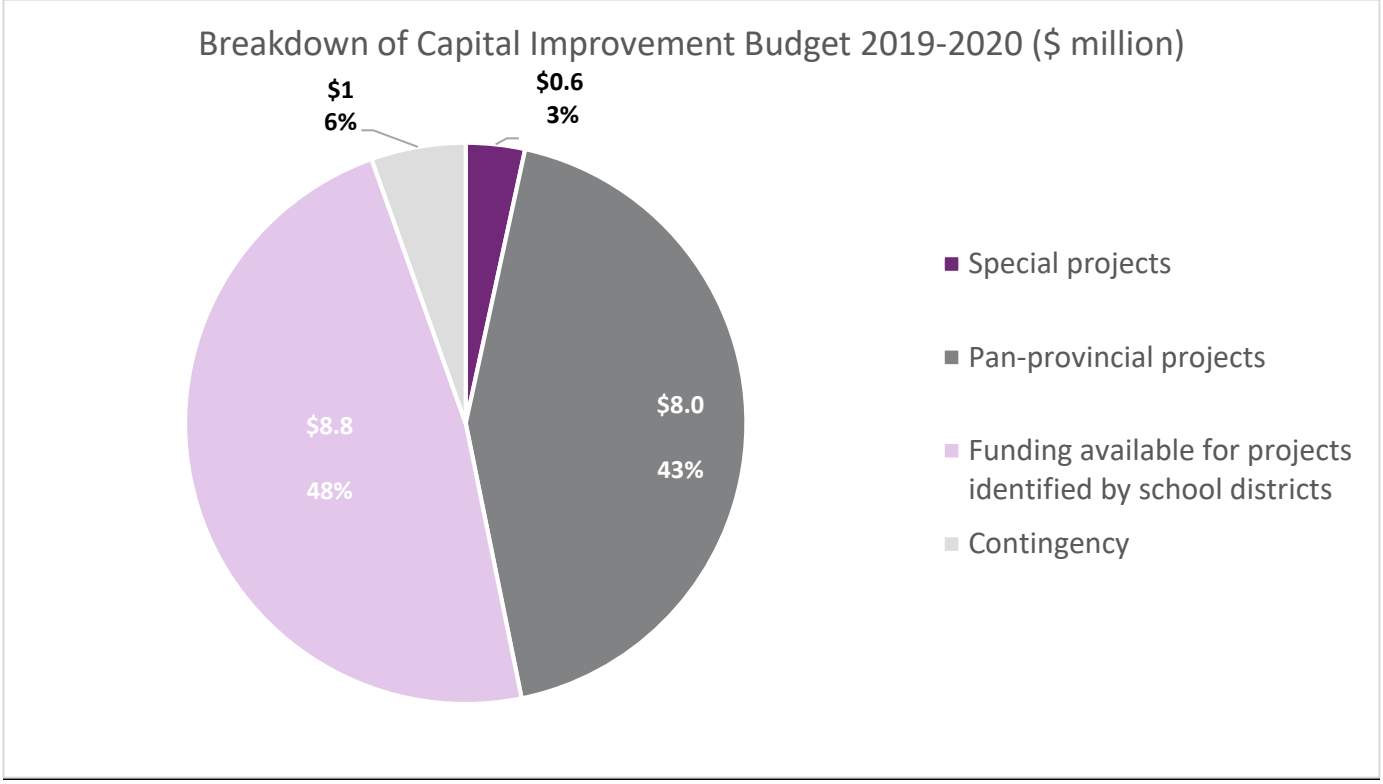


Source: created by AGNB with information provided by the Department

2.17 As shown in Exhibit 2.6 below, $8 million was allocated to pan-provincial projects in the 2019-2020 capital budget. Of this $8 million, $7.7 million was for the roofing program. This program started five years ago in 2014-2015. The Department has allocated approximately $36.8 million to this program since its inception. According to the Department, there were numerous urgent and unplanned roof repair requests from school districts. The contingency in the Department's capital budget had to be used to cover the costs of the requested work. The Department felt a pan-provincial roofing program would be appropriate to deal with the issues. It then asked the Department of Transportation and Infrastructure (DTI) to administer this program.

2.18 DTI assesses the conditions of roofs of school buildings and identifies roofing projects. DTI categorizes all roofing project into "high priority" and "low priority" with estimated costs. DTI then sends the list of projects to the Department of Education and Early Childhood Development. The Department groups the high priority projects by school districts and forwards a list to each school districts to confirm. Once they are confirmed, the Department sends a consolidated list to DTI to proceed. The Department has very little involvement in the whole process. For this reason, we decided not to include the roofing program in our audit scope.

Exhibit 2.6 – Breakdown of Capital Improvement Budget (2019-2020)



Source: created by AGNB with information provided by the Department (unaudited)

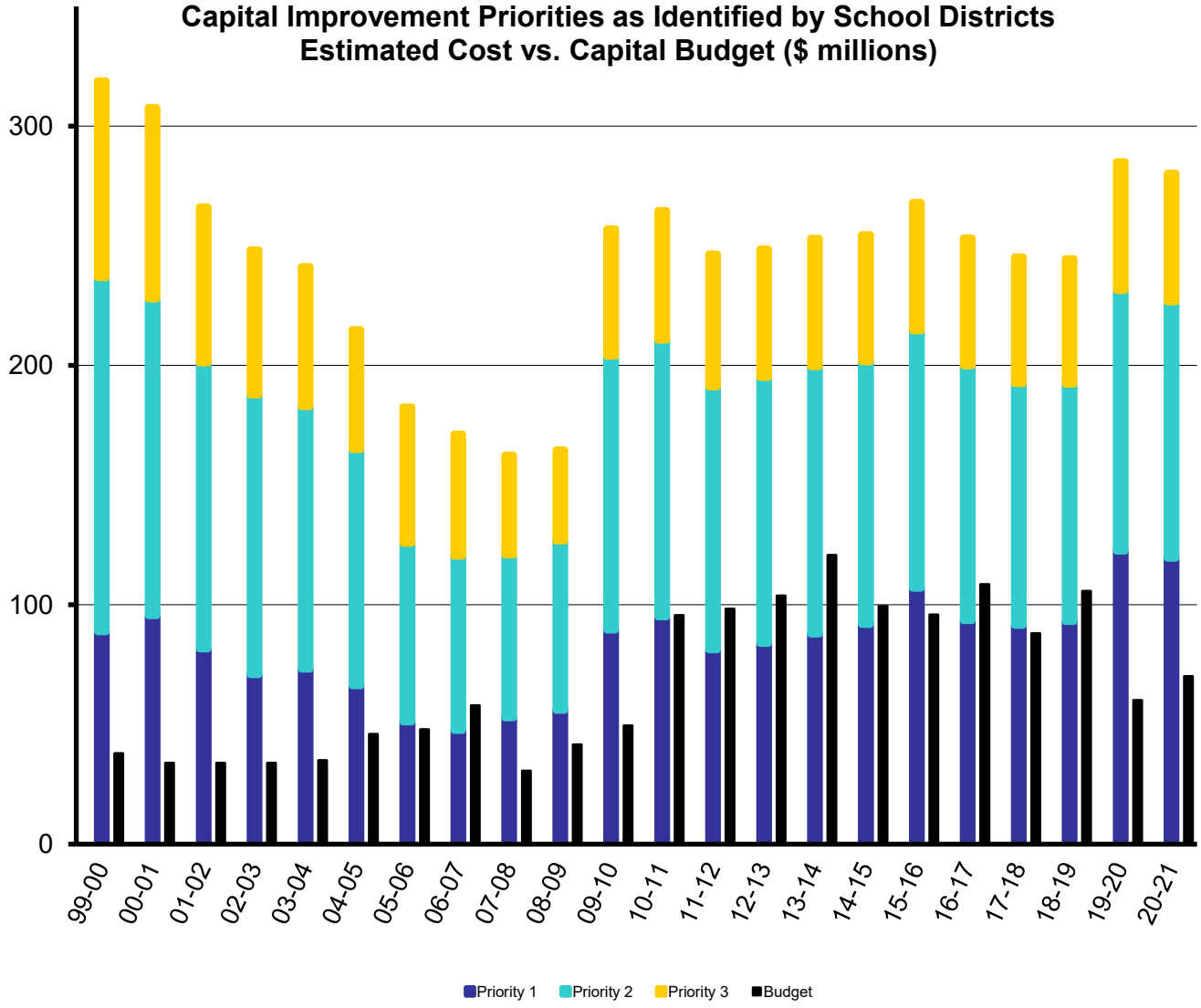
2.19 The Department administers the other two pan-provincial programs which are security ($0.2 million) and radon ($0.1 million). We interviewed the departmental staff and reviewed documents regarding the radon program. There is well documented Radon Testing Protocol. The goal of this program is clearly stated. The testing cycle is well defined. The data is centrally collected and stored by the Department.

2.20 Therefore, our findings primarily relate to the portion of the capital improvement program that is relevant to special projects identified by the Department ($0.6 million in 2019-2020) and capital improvement projects identified by school districts ($8.8 million in 2019-2020).

Total of all identified but not completed capital improvement projects was $282.7 million at September 2019

2.21 The Department maintains a central database for tracking all capital improvement projects identified by each school district. As of September 2019, the total estimated cost of projects identified but yet to be completed was $282.7 million. The Department categorized this as deferred maintenance. As shown in Exhibit 2.7, the total capital budget approved each year has been significantly lower than the estimated cost of identified capital improvement projects for the past 22 years.

Exhibit 2.7 - Estimated Cost of Capital Improvement Projects vs. Capital Budget ($ millions)



Source: created by AGNB with information provided by the Department (unaudited)

For the past 22 years, the annual total capital budget has barely covered Priority 1 projects

2.22 The Department provided school districts with a guideline to prioritize capital improvement projects into three categories as follows:

- Priority 1: Occupant Health & Safety/Facility Shutdown;
- Priority 2: Essential Work, such as upgrading an electrical system; and
- Priority 3: Important but not urgent, such as upgrading lighting.

For the past 22 years, even if the entire departmental capital budget had been allocated to capital improvement projects, it would have barely covered Priority 1 projects. This would leave very little funding available for school districts to address Priority 2 projects. If this funding gap continues, building conditions will deteriorate further and many Priority 2 projects will become Priority 1 that must be dealt with.

2.23 The following four sections contain our detailed findings and observations:

- inadequate capital funding prioritization process;
- override of recommended proposals;
- insufficient capital asset planning process; and
- insufficient and poor-quality facility condition data

Inadequate Capital Funding Prioritization Process

Major Capital Program

2.24 Major capital projects are any capital projects anticipated to cost over $1 million dollars. These projects are categorized into one of five project types as follows:

- **new schools** - projects submitted to accommodate growth and/or support cultural diversity;
- **school addition projects** - projects such as the construction of an auditorium, gymnasium, a new wing of classrooms, etc.;
- **rationalization** - projects designed to optimize the provision of infrastructure to meet pedagogical needs. These could include the construction of a new school or improvements to existing infrastructure to accommodate amalgamations;
- **complete school replacement** - projects where a new school is more cost-effective than refurbishment of existing assets due to high levels of deferred maintenance; and
- **mid-life upgrades** - projects to extend the useful life of schools through capital refurbishment.

2.25 All major capital projects are identified by school districts and must be submitted to the Department. The Department has used the Quadruple Bottom Line (QBL) assessment tool since 2014 to score and rank all projects submitted by school districts. Department personnel use the QBL ranking to create and submit a prioritized list of projects to senior management within the Department and then to the Minister of Education and Early Childhood Development for approval.

School districts believe QBL analysis tool is an improvement over past practice

2.26 The QBL analysis tool was designed by a third-party accounting firm for the Department in collaboration with school districts. School districts believe the QBL analysis tool is an improvement over the previous capital planning process, and that it has helped minimize political interference in funding decisions. Its introduction has provided greater confidence and trust in the capital planning process. School districts we interviewed also believe the Department generally applies the tool in an effort to make the prioritization process more objective.

Lack of standardized QBL project submissions for major capital projects

2.27 We found there is no standardized format for project submissions across all school districts. There are no requirements of how the school district must inform the Department other than to provide a prioritized list of projects the school districts would like to have completed. Details provided by school districts within their lists of submitted projects widely differed. Some school districts provided only the name of the project requested, while others included significant backup documentation and notes to support the project proposal.

2.28 One district indicated the Department contacts them regularly throughout the capital planning process to solicit feedback and gather additional details on proposed capital projects. Another district told us that there is some level of engagement, but not much above the occasional clarifying question. This ad-hoc approach presents a risk of relying on inconsistent information. Lack of standardized project submissions across all districts creates a risk the QBL scoring process is based on subjective assessments.

Recommendation

2.29 We recommend the Department, in collaboration with school districts, develop a standardized major capital project submission form for school districts to collect and present major capital project information.

QBL supporting documents for 2015-16 and earlier years could not be easily obtained from the Department

2.30 As part of our audit, we requested documents used by the Department to support 15 QBL assessments. There are 142 assessments performed by the Department in total. We noted supporting documents for 2015-16 and earlier were not readily available from the Department. A centralized repository of all historical and current QBL assessments would allow for standardized documentation of project details to facilitate validation and analysis of QBL scores.

Recommendation

2.31 We recommend the Department create a centralized repository for all historical and current QBL assessments and their supporting documents.

School districts have little information on how QBL works in assigning scores to projects

2.32 From our interviews with school district staff, we found there is little information available to them detailing how individual projects are assigned scores within the QBL analysis tool. There is a sense among school districts the level of feedback on major capital project submissions has decreased in recent years. The Department considers the actual project scores as confidential advice to Cabinet.

2.33 The Department informed us the ranking process was presented to school districts and which projects were ranked "high" vs "mid-range" vs "low" was discussed with district staff. Some districts have not taken the Department up on offers to present or discuss project rankings. The Department informed us it intends to make the QBL rankings and scores public. At the time we completed our report, the Department had yet to publicly report this information.

Feedback school districts received on submitted projects is insufficient to inform planning for future major capital projects

2.34 Feedback school districts received on submitted projects is insufficient to inform planning for future major capital project submissions. If districts knew how their major capital project submissions fared during the QBL assessment, they would be able to make informed decisions about re-submitting the same projects in future years or whether alternative projects should be considered to address strategic educational needs.

2.35 We also found QBL score calculation errors and discrepancies through our sample testing. For example, we found the total score for the Grand Bay Area School project changed significantly from year to year. The QBL score of this project increased 54 points in 2018-2019. In 2019-2020 it dropped 84 points, while project scope remained the same. These significant score variances did not prompt the

Department to conduct further investigation at the time to identify its causes.

Errors in Grand Bay Area School QBL score resulted in the project being improperly ranked

2.36 As a result, this project was recommended by the Department in its capital budget proposal as the top ranked project in 2018-19. However, Cabinet did not approve it. The Department informed us the score in 2018-19 was inflated due to a data input error. Had this error been discovered and corrected, the Grand Bay Area School project would have ranked third. Exhibit 2.8 shows the history of QBL scores for this project since 2016. The Anglophone South School District did not recommend this project to the Department in 2020-2021 budget cycle, hence the Department did not assess this project using QBL.

Exhibit 2.8 – QBL Scores of Grand Bay Project (2015-16 to 2019-20)

Year	Project type	QBL score	Score variance from prior year
2019-2020	Rationalization	194	-84
2018-2019	Rationalization	278	+54
2017-2018	Rationalization	224	+21
2016-2017	Rationalization	203	-27
2015-2016 (first year)	Rationalization	230	-

Source: created by AGNB based on information provided by the Department

The QBL ranking for Hanwell K-8 School project did not match the one recommended by the Department

2.37 Discrepancies related to the Hanwell K-8 School project were also noted. QBL documentation provided by the Department indicated the Hanwell K-8 School project scored 220 points in evaluation year 2019-2020. It ranked 3rd among 43 projects but the Department recommended it as the number one project in its capital budget proposal. Cabinet subsequently approved the project.

Improper QBL score calculation for new school projects

2.38 In one discrepancy, we found the Department calculated QBL indicator 4 "*Facility Condition*" for new school projects including New Moncton Metro, Nouvelle Moncton, Nouvelle Saint-Jean and Hanwell. According to the QBL indicator definition documented in the QBL analysis tool, this indicator is *"not applicable to new school construction to address growing demand."* In the case of Hanwell, the Department assigned 65 points to this indicator, while it should have been *"not applicable"* with a score of zero. Had this error been corrected, the total score of this project would have been 155 and it would have resulted in much lower ranking among the 43 projects. It should be noted that applying this indicator to the three other new school projects did not result in any of them being proposed by the Department.

2.39 In its response to our draft report in February 2020, the Department stated: *"Hanwell, amongst others, were assigned scores for FCI where they should not have been. That affected all "new school" request. Indictor 4 was mis-applied resulting in "new schools" being improperly scored ...".* It also stated: *"Albeit this was an error according to the definition, the same rationale was applied consistently to all new school projects including New Moncton Metro, Nouvelle Moncton, Nouvelle Saint-Jean and Hanwell. This was picked up in 20-21 and new school requests did not receive consideration under indicator 4".*

2.40 Further, the Department commented: "*Whether a score was assigned under this indicator for Hanwell or not would have had no bearing on recommendations that were made. Even though Hanwell was not the top scoring project, it was recommended to proceed due to the space deficiencies and modular classroom situation with Fredericton South Schools."*

2.41 However, in May 2020, the Department clarified its response in February stating: "*the "scoring mistake'' for Hanwell, it was not a mistake. The mistake is with respect to the indicator definition sheet which states that the indicator for Facility Condition is ''not applicable to new school construction to address growing demand''. The Indicator description was not changed since 2014. In the summer of 2015 while preparing the 16-17 submission, it was identified that new school projects were not receiving a balanced scoring compared to the other 4 types of projects*

(Midlife, Rationalisation, Replacement, Addition). Indicator 4 was the significant difference. The decision was made to use this indicator for new schools as well, using the average of Facility Condition score of the schools impacted by the new school project - i.e. those schools presently being attended by the students who would attend the new school. This is how the indicator has been used since (16-17, 17-18, 18-19 and 19-20). The original indicator description was not updated.

2.42 Due to contradicting responses from the Department as described above, we are unable to conclude on the objectivity and reliability of the Department's process for recommending new school projects to address growing demand. In this case, the Department applied the QBL scoring in a manner that is inconsistent with the approved methodology.

Tiered approach (outside of QBL parameters) put Hanwell K-8 and Moncton 6-8 schools as "must-dos" in 2019-2020

2.43 The other discrepancy we found was related to a "new" approach to assess school projects. The Department identified two projects as "must dos" – Hanwell K-8 and an increase of $10M for the Moncton 6-8 school project. Both were based on a tier one requirement -a significant lack of school space, according to a newly introduced tiered approach outside of the existing QBL parameters. The Department explained the original budget plan followed the QBL results. Following direction from government that capital spending was to be reduced, the Department revised the original budget and presented it to the Deputy Ministers and the Minister along with the QBL results for that year. The revised plan included top-ranking midlife upgrades, top-ranking new school, and an increased scope of Moncton 6-8 school project. A subsequent government memo gave further direction on the intent to cut the capital program through a new analysis of all projects using specific criteria. Only existing must-do projects could be submitted, and projects that could be deferred should be identified. As a next step, the Department further revised its budget submission resulting in nine previously approved projects being deferred along with pan provincial and strategic study programs. Only Hanwell K-8 and Moncton 6-8 were submitted as "must do" projects.

Tiered approach (outside of QBL parameters) used in 2018-2019 for École de Moncton land purchase

2.44 The Department already applied this new "tiered" approach in 2018-2019 for École de Moncton land purchase. École de Moncton was ranked 15th as per QBL. The Department re-ranked the project as 4th and recommended a strategic land acquisition only. Cabinet subsequently approved the project. As per the Department, it identified École de Moncton as a special case due to the projected population growth in the area.

The change management process for QBL was informal and incomplete

2.45 We found significant lack of school space exists in many other areas as well. There are nine schools in three different school districts which have at least six modular classrooms. We believe this "tiered" approach was a significant change to the QBL assessment methodology, as it introduced a completely new class of projects outside the existing QBL parameters. We would expect a comprehensive consultation with all stakeholders and a rigorous approval process to bring about such a major change in methodology, similar to when the QBL was created. We found this was not the case. The change management process was informal and incomplete. There was no evidence school districts were consulted and no formal ministerial approval of the new "*tiered"* approach.

2.46 The Department later added the definition of "Tier-1 and Tier-2 Project" in the QBL template in December 2019. According to the definition, *"Tier 1 projects will have top priority for funding and approvals. They are identified as those having significant space deficiencies when compared to EECD Planning Guidelines. Project rankings within Tier 1 are based upon the number of teaching platforms missing, demographic trends, and district priority"*. These projects are not subject to QBL assessment of the 15 indicators. We believe this tiered approach diminishes the objectivity of the QBL, as there is no quantitative assessment for Tier-1 projects. Tier-1 projects effectively by-pass the QBL scoring process.

2.47 In addition to the above-mentioned issues, we found, in another case tested, key information for prioritizing major capital projects was inconsistently documented and applied. The infrastructure statistics document indicated Saint John High School was built in 1986, while the condition assessment stated it was built in 1932 (with upgrades and revitalization projects in the 1980s). As the age of a building is currently being used in conjunction with the

facility condition indicator within the QBL, changing the age of a school can impact the project's overall QBL score.

Insufficient data validation and quality review process for QBL assessments

2.48 The discrepancies we found highlight deficiencies in the Department's change management, data validation and quality review processes for QBL assessments. If these remain unaddressed, similar discrepancies could occur and result in improper project rankings in the future and ultimately significant inappropriate capital spending decisions.

Recommendation

2.49 We recommend the Department implement a formal change management process for the Quadruple Bottom Line Multi-Criteria Analysis. The process should include but not be limited to:

- **Clear approval path depending on the significance of the change;**
- **Consultation with all key stakeholders such as school districts; and**
- **Formal approval and documentation of changes before they are applied.**

Recommendation

2.50 We recommend the Department implement a data validation and quality review process for the Quadruple Bottom Line Multi-Criteria Analysis.

Several QBL indicators require improvement to increase the objectivity of capital investment decisions

2.51 We found seven indicators within the QBL tool require improvement. For example, indicator 4 *"Facility condition / deferred maintenance"* augments the industry standard by factoring in both the age of a facility and *Facility Condition Index (FCI)*. Common industry practice suggests FCI should be the primary consideration. Including the building age would skew the results in favour of older buildings. Details of weaknesses in other indicators can be found in Appendix IV. As demonstrated in the appendix, these weaknesses if unaddressed, could undermine the objectivity of capital funding decisions and result in capital investments that are not based on the greatest need.

2.52 As stated in the QBL instructions, the scoring for indicator 2 *"demographic forecasts"* is based upon extrapolation of the past five year average annual change in student population. For example, in the Grand Bay Rationalization project assessment, the Department forecasted student population change for the affected project area using data from year one and year five only.

Student population trends over the intermediate years were not considered in the calculation. The result was a 3.16% decline.

Department's simplified method for forecasting student population could inappropriately affect QBL ranking

2.53 We do not believe this simplified method is the most accurate for forecasting student population. A rolling average, which takes into account population change in each of the 5 years, would be a better indicator. By switching to this method, the Department can ensure enrolment projections consider changes in data from each period. The rolling average approach also reduces the impact of outliers (e.g. anomalies in one period) and improves accuracy and reasonableness of forecasting. Had this calculation method been used, the enrolment trend would have resulted in a 4.15% decline over the same period. This could result in a different QBL score and potentially affect the ranking of projects. A full illustration of this method can be found in Appendix V.

Recommendation

2.54 We recommend the Department use a rolling average method to predict student enrolment trends.

Recommendation

2.55 We recommend the Department improve the Quadruple Bottom Line Multi-Criteria Analysis tool to:

- **Address the weaknesses in the indicators listed in Appendix IV of the report and increase its overall objectivity; and**
- **Incorporate a scoring mechanism to capture space deficiencies, instead of the tiering approach.**

Recommendation

2.56 We recommend the Department publicly report the annual major capital project rankings and scores based on the Quadruple Bottom Line Multi-Criteria Analysis.

School districts are not in full compliance with policy 409 "Multi-year School Infrastructure Planning", and the Department does not enforce compliance

2.57 We also found school districts are not in full compliance with Department Policy 409 "*Multi-year School Infrastructure Planning"*. This policy requires school districts to submit an annual Facilities Status Review for each school. This document contains all essential information regarding operational costs and general facility data. We found six out of seven school districts did not submit the required reports to comply with this requirement and that the Department is not enforcing compliance with its policy. The Department indicated this is not an issue, as it already has the data it needs to conduct QBL assessment. The Department could not explain why this requirement remains in the policy.

Recommendation

2.58 We recommend the Department re-evaluate the document submission requirements for school districts in Policy 409 "*Multi-year School Infrastructure Planning*" and enforce the policy.

Capital Improvement Program

2.59 As we described in paragraph 2.14 to 2.17, our findings related to the capital improvement program are only relevant to the special projects identified by the Department and capital improvement projects identified by school districts.

No standardized prioritization process for capital improvement projects across all school districts

2.60 There is no standardized prioritization process for school districts to evaluate capital improvement projects and develop evidence-based lists of project priorities for the Department. While there are informal processes in place, we found different criteria were applied across school districts. Also, processes were not formally documented for further review or evaluation by the Department or other key stakeholders such as parents' groups, teaching staff, and communities.

2.61 A standard and consistently applied prioritization process for capital improvement projects across all districts would ensure a comparable service standard is used in decision-making. If the prioritization process is not consistently applied there is a concern that capital funds are not being optimally allocated to address key risks to educational service delivery**.**

Decision-making for capital improvement projects identified by school districts based on insufficient information

2.62 Once capital improvement funds are allocated to school districts, choosing projects for completion is primarily based on the information available in the School Physical Plant Database (SPPD). The SPPD system is maintained by the Department and information including a description of each project and a budget estimate is uploaded by school districts. There are no minimum data requirements for listed projects. As a result, the amount of detail varies from one project to another. These projects neither have condition assessment data nor adequate explanation of the risks if the need is not addressed.

The Department's funding allocation for capital improvement projects is not based on the condition of the school buildings or industry standards

2.63 We found the capital improvement projects funding allocation method does not align with industry best practices. Currently, funding is allocated based on:

- first, 70% of funding is allocated to Anglophone sector and 30% to Francophone sector; and
- then funding to each sector is allocated based on a formula that considers the total square footage of school facilities and total population of students in each school district. This means that the larger the schools or the more students within a school district, the more funding the school district is likely to be allocated, regardless of building conditions.

2.64 Industry standards (International Infrastructure Management Manual) recommend that prioritization of asset rehabilitation activities should be based on the following criteria:

- assets that have a high consequence or risk of failure;
- assets that have a high utilization and subsequent impact on users;
- assets where the total value represents the greatest net value to the government;
- assets that have the highest average age relative to their expected lives; and
- assets where replacement with modern equivalent assets could yield substantive savings.

2.65 The Department indicated the 70%-30% allocation (based on student population) is required to comply with the equitable division of financial resources as per the *Education Act*. The *Education Act* states:

- *"44(1) The financial resources voted by the Legislative Assembly for school operations shall be divided by the Minister on an equitable basis between the two distinct education sectors established under subsection 4(1).*
- 44(2) The equitable division of financial resources under subsection (1) ***shall seek to assure to each of the education sectors established under subsection 4(1) an equivalent standard of education taking into account the needs and particular circumstances of each sector."***

Student population and square footage of school facilities may not be the appropriate bases to allocate capital improvement funding

2.66 We realize the Department must, as required by law, allocate capital improvement funding in an equitable manner as per section 44(1) of the *Education Act*. However, student population and square footage of school facilities may not be appropriate funding allocation factors to achieve an equitable division in this case. This allocation method does not consider the condition of school infrastructure. In our view, while taking needs into account, an *"equitable division"* of funding would be better supported if the objective of the Department was to have all schools in each education sector in good condition. This can be achieved by following industry standard asset management practices.

The prioritization process, rationale and risk assessment for capital improvement projects are not well documented at school districts

2.67 Once capital improvement funding is allocated to a school district, school districts prioritize projects based on needs. However, the prioritization process, rationale and risk assessment are not well documented. It is difficult to determine how life cycle cost and the condition of assets are considered in the funding allocation decision. For example, project A may be prioritized over project B based on the school district's general understanding of the risk associated with those projects. This may be easy to determine if comparing a ventilation repair to a parking lot rehabilitation. However, it becomes more difficult to judge when choosing between two high risk projects, such as fixing exterior walls or upgrading electrical systems.

No clear and consistent definition of "special projects"

2.68 Also, the current capital improvement project funding allocation model has greater potential for subjective interference. In the 2019-2020 capital improvement project funding allocation model we reviewed, three projects were identified as receiving approved funding before the overall capital improvement budget was allocated to school districts. The three projects were:

- A.J. Savoie School in Saint-Quentin ($210,000);
- Nashwaaksis Field House in Fredericton ($300,000); and
- Ecole Sainte-Anne in Fredericton ($114,000).

2.69 Effectively, these projects received higher priority than any capital improvement projects identified by school districts. As per the Department, these particular projects were either interdepartmental or health and safety related. However, there was no clear and consistent definition of special projects.

There is no unified prioritization approach for all types of capital improvement projects

2.70 Furthermore, we found there is no unified prioritization approach for all capital improvement projects. The prioritization processes for each of the three types of projects (pan-provincial, special projects identified by the Department and projects identified by school districts) are separated. Different prioritization criteria are used for each type of projects. It is impossible to assess the overall fairness and reasonableness of the prioritization across all capital improvement projects.

Recommendation

2.71 We recommend the Department establish a clear definition of "special project" and apply it consistently to minimize potential for subjective interference in the capital improvement funding allocation.

Recommendation

2.72 We recommend the Department, in consultation with school districts, develop consistent criteria for the provincial prioritization of capital improvement projects. In developing the criteria, building conditions, life cycle costs, and industry standards should be used.

Override of Recommended Proposals

Several instances where the Department did not follow the QBL ranking

2.73 Although the QBL model was adopted in 2014 by the Department to ensure objectivity of project prioritization, we found several instances where the Department did not follow the QBL ranking when preparing its budget submission to Treasury Board. When we enquired as to the reasons behind these deviations, we were informed the changes were made to address issues of overcrowding in some areas due to increased student enrolment. The QBL did not account for overall sudden growth at that time. The Department indicated it updated its QBL scoring method in September 2019 to reflect this practice.

2.74 The Department also pointed out *"The QBL Model is a living model that is updated and improved regularly. ... The point of the QBL is to make sure the projects that need to support healthy, safe and appropriate environments are prioritised. The QBL was modified. It is important to not be pedantic in application. Common sense must be applied."*

2.75 We selected and traced projects approved by Cabinet to the Department's capital budget proposals, and then to QBL rankings from fiscal years 2016 to 2020. The table in Exhibit 2.9 shows the results of our work. It is important to note this table is not a complete listing of all 142 projects ranked, submitted or approved in these years. It is only intended to illustrate instances where differences existed between QBL rankings, the Department proposal and final approval.

Exhibit 2.9 - Comparison between QBL result, the Department's proposal and final approval for selected projects (2016-2020)

AGNB selected projects	QBL ranking	Community	Project type as per QBL list	Estimated project cost ($, millions)	Projects in Department's budget proposal*	Approved capital projects
2019-2020						
Mathieu Martin (grade 9-12)	1	Dieppe	Mid-life upgrades	$36.5	Not proposed	N/A
Amirault (K-5)	2	Dieppe	Mid-life upgrades	7.0	Not proposed	N/A
Hanwell K-8 School	3	Hanwell	New School	34.0	Hanwell K-8 School	Hanwell K-8 School
2018-2019						
Grand Bay Area School (K-5)	1	Grand Bay-Westfield	Rationalization	17.0	Grand Bay Area School	Not approved
Bessborough School (K-8)	2	Moncton	Rationalization	33.0	Hanwell Area School	Not approved
Hanwell K-8 School	3	Hanwell	New School	32.0	Bessborough School	Bessborough School
École de Moncton (Ranked 15th)	15	Moncton	New School	29.5	École de Moncton (for land purchase only)	École de Moncton

Exhibit 2.9 - Comparison between QBL result, the Department's proposal and final approval for selected projects (2016-2020) (Continued)

AGNB selected projects	QBL ranking	Community	Project type as per QBL list	Estimated project cost ($, millions)	Projects in Department's budget proposal*	Approved capital projects
2017-2018						
Birchmount (K-5)	1	Moncton	Mid-life upgrades	0.05	Study – Birchmount Mid-life upgrades	Study – Birchmount Mid-life upgrades
Grand Bay Area School (K-5)	2	Grand Bay-Westfield	Rationalization	14.1	Grand Bay Area School	Not approved
Abbey Landry (K-5)	3	Memramcook	Addition	1.0	Abbey Landry	Not approved
Connaught St. school (K-5)	4	Fredericton	Addition	4.0	Connaught St. school	Connaught St. School
Hanwell K-8 School	5	Hanwell	New School	23.5	Hanwell K-8 School	Not approved
2016-2017						
Arc-en-Ciel (K-8)	1	Oromocto	Replacement	19.6	Arc-en-Ciel	Arc-en-Ciel
Salisbury Elementary	2	Salisbury	Addition	0.075	Salisbury Elementary Study	Salisbury Elementary
Connaught St. School (K-5)	3	Fredericton	Addition	0.05	Connaught St. School	Not approved
Bath Middle School	4	Bath	Addition	0.075	Bath Middle School Study	Bath Middle School

Exhibit 2.9 - Comparison between QBL result, the Department's proposal and final approval for selected projects (2016-2020) (Continued)

AGNB selected projects	QBL ranking	Community	Project type as per QBL list	Estimated project cost ($, millions)	Projects in Department's budget proposal*	Approved capital projects
Campbellton K-8	5	Campbellton	Rationalizatio	21.8	Campbellton K-8	Campbellton K-8
Moncton North (6-8)	6	Moncton	New School	27.9	Moncton North	Moncton North
2015-2016						
N/A – see explanation in 2.68 to 2.72				1.1	Woodstock High: Life Safety	Woodstock High: Life Safety
Salisbury Elementary	1	Salisbury	Mid-life upgrades	0.05	Salisbury Elementary	Not approved
Lower West Saint John Elementary	2	Saint John	Rationalization	21.6	Lower West Saint John Elementary	Lower West Saint John Elementary
École Marie-Gaétane (9-12)	3	Kedgwick	Rationalization	4.8	École Marie-Gaétane	École Marie-Gaétane
Connaught St. School (K-5)	4	Fredericton	Addition	2.5	Connaught St School	Not approved
Secondaire Assomption (9-12)	5	Rogersville	Rationalization	8.0	Secondaire Assomption	Secondaire Assumption

Exhibit 2.9 - Comparison between QBL result, the Department's proposal and final approval for selected projects (2016-2020) (Continued)

AGNB selected projects	**QBL ranking**	**Community**	**Project type as per QBL list**	**Estimated project cost ($, millions)**	**Projects in Department's budget proposal***	**Approved capital projects**
Grand Bay (K-5)	6	Grand Bay-Westfield	Rationalization	0.05	Study: Grand Bay Rationalization	Study: Grand Bay Rationalization
Miramichi East (K-5)	7	Miramichi	Rationalization	16.0	Miramichi East	Miramichi East
Fredericton High	8	Fredericton	Mid-life upgrades	9.8	Fredericton High	Fredericton High
Northrop Frye (K-5)	9	Moncton	New school	0.05	Northrop Frye Study	Northrop Frye P3
W.-A Losier (9-12)	10	Tracadie-Sheila	Mid-life upgrades	8.0	W.-A Losier	W.-A Losier
Harrison Trimble (9-12)	11	Moncton	Mid-life upgrades	6.4	Harrison Trimble	Harrison Trimble
JMA/SMS (5-12)	12	Salisbury	Mid-life upgrades	3.7	Not proposed	N/A
Leo Hayes (9-12)	13	Fredericton	New school	0.05	Leo Hayes Study	Leo Hayes P3
Dieppe M-8	14	Dieppe	New school	29.2	Dieppe M-8	Dieppe M-8
Moncton North (6-8)	15	Moncton	New school	16.3	Not proposed	N/A

Exhibit 2.9 - Comparison between QBL result, the Department's proposal and final approval for selected projects (2016-2020) (Continued)

AGNB selected projects	**QBL ranking**	**Community**	**Project type as per QBL list**	**Estimated project cost ($, millions)**	**Projects in Department's budget proposal***	**Approved capital projects**
Samuel de Champlain (K-12)	16	Saint John	Addition	1.3	Samuel de Champlain	Samuel de Champlain

***projects listed as per the order in the Department's submission to Cabinet*

Shading indicates difference between (1) QBL ranking and Department's budget submission to Cabinet, (2) Department budget submission and Cabinet approval

Source: created by AGNB based on information provided by the Department

Cabinet has approved projects different than those put forward by the Department

2.76 We found in certain instances projects approved by Cabinet were different than those proposed by the Department. According to the Department, no rationale was given for those differences.

2.77 As shown in Exhibit 2.9, project priorities can be changed by Cabinet without feedback to the Department regarding the rationale behind such changes. For example, in 2018-19 the Grand Bay Area School and Hanwell School projects were not approved by Cabinet, although they were ranked highest by the QBL model and recommended by the Department. This lack of feedback creates uncertainty in the Department's capital planning process. It also counters the Department's efforts to make evidence-based decisions.

2.78 Exhibit 2.9 also showed there are differences between the QBL ranking and the Department's proposal in several instances. The lack of alignment between the QBL ranking, the Department's proposal and Cabinet's capital budget approval make it difficult for us to conclude that evidence-based decisions are being made.

Premier's Office approved Woodstock High School auditorium project outside of normal process

2.79 We also found one major capital project did not go through the normal QBL process. The Town of Woodstock initiated a project to renovate and expand the existing Woodstock high school auditorium, as a municipal project for the community. The Department indicated the Office of the Premier approved it. This project was to be funded by the Town and the Regional Development Corporation. Contrary to most capital projects involving provincial properties, this project was managed by the Town instead of DTI.

2.80 As the project was being carried out, the Office of the Fire Marshal advised it could not proceed without a commitment that the school would have a sprinkler system installed. At the time, the school was grandfathered and was not code compliant. The Office of the Fire Marshal considered this project to be a major change in building use, thus requiring a sprinkler system to be installed. A phased approach over three years to upgrade the entire school building was deemed acceptable in order for the municipal project to proceed. This unexpected expense of installing a sprinkler system had to be funded in order for the municipal project to be completed and for the school to remain open.

2.81 This project costed the Province $1.5 million in total. The school district requested and was granted capital improvement funding of $200,000 in 2014-2015 to cover the first phase of the sprinkler system work, and the Regional Development Corporation committed $200,000 that year as well. Tender results were higher than the Town's consultants' cost estimates for the sprinkler system, leaving the project $1.1 million short on overall budget. This work needed to be carried out, as the Office of the Fire Marshal had authority to close the school if the necessary upgrades were not completed. The $1.1 million shortfall was eventually covered by the Department's budget for major capital projects in 2015-16.

2.82 The solution proposed by the Department and approved by Cabinet was to fund the outstanding work as a one-year major capital project. The Department indicated it would have resulted in other high priority improvement projects in the district being overlooked if the district had been forced to cover these overages. The negative impact on the district's capital improvement budget over two years would have been significant.

2.83 This resulted in the project being given priority treatment without having to compete with other major capital projects submitted and ranked through the QBL process. It may have deprived other high priority projects of necessary capital funding.

Exhibit 2.10 Woodstock High School (built in 1977)

Source: Google Map

Insufficient Capital Planning Process

We believe the Department, as legislated owner of school facilities, is responsible for central oversight of school infrastructure planning

2.84 The *Education Act* states:

- *"2(1) A District Education Council may,* ***with the approval of the Minister*** *and for the purpose of providing public education, establish schools within the school district for which the District Education Council is established."*
- "*45(1)* ***All school property is vested in the Minister****."*
- *"45(2) A District Education Council shall, at all times, have management, care and control of all school property in the school district for which the District Education Council is established, until such time as the school property is declared surplus by the District Education Council."*

2.85 While we realize the management, care and control of all school property resides with school districts and District Education Councils, we believe the Department, as the owner of all school property, is responsible for central oversight of school infrastructure planning.

There is no comprehensive province wide long-term capital plan for schools

2.86 The Department has never prepared a comprehensive provincial long-term capital plan for education capital assets across the Province. However, it prepares a 10-year cash flow projection annually based on the projects identified by school districts. A provincial long-term capital plan would provide a broad overview of school facilities across the Province. It would help school districts, the Department and the Province identify long-range facility needs to support education strategies.

2.87 The *"Asset Management for Sustainable Service Delivery: A BC Framework"* identified a comprehensive long-term capital plan would have key elements, including:

- *"assets owned and their condition;*
- *gaps between the current and desired levels of service;*
- *risks to service delivery;*
- *practices, projects, and programs required to meet organizational asset management objectives, manage risks, and achieve the desired level of service in the most cost-effective way;*
- *a timeline for implementation;*
- *resources required; and*
- *necessary future improvements to the plan".*[3]

2.88 Long-term capital planning would bring stability and predictability for stakeholders who are managing facilities and allow for optimized allocation of available capital funds over the long-term. School districts need long-term planning to know if projects are viable in the next 5, 10, or 20 years and make appropriate capital asset recommendations and decisions that support educational plans and objectives. Without a provincial long-term capital plan, school districts have no clear direction regarding what to expect in the long-term.

2.89 Although a capital plan is long-term in scope, industry best practice suggests this type of plan is continuously improved and regularly incorporate new information or changing requirement. The Department felt a long-term plan would not be effective, as Cabinet often rejects the Department's funding proposals. This should not prevent the Department from developing a long-term plan. We believe a long-term plan would help highlight the risks of deviation from the plan and enable decision makers to make informed decisions.

[3] Asset Management for Sustainable Service Delivery: A BC Framework, page 30

Many Canadian provinces have either multi-year infrastructure plans or support for school capital planning

2.90 British Columbia, Alberta, Ontario, Quebec and Newfoundland and Labrador all have multi-year infrastructure plans at the provincial level which would guide long-term capital planning for the education sector. For example, the Ontario's Ministry of Education has a comprehensive 10-year capital plan that is designed to meet its asset management priorities. It also standardized its asset inventory methodologies to comply with sector standards.[4] Ministries of Education in British Columbia, Alberta and Saskatchewan all have detailed capital plan instructions and clear requirements for their school divisions to develop long-range capital plans.

2.91 Because of the lack of long-term capital planning and insufficient funding, many repair and maintenance needs remain unaddressed while building conditions deteriorate. One district informed us that in both its 2017 infrastructure reviews conducted by external consultants, all facilities were found to be in poor condition[5].

P3 schools have a protected stream of funding, while provincially owned schools have to go through an annual budget cycle

2.92 In contrast, repair and maintenance payments included in the four Public Private Partnership school agreements between the Province and private-sector consortiums are protected due to long term signed agreements requiring the particular P3 consortium to maintain the conditions of school infrastructure to a certain standard. The payments, listed in Appendix VI, show the four P3 schools have been funded in excess of $3 million annually for Repairs and Maintenance in each of the last 5 years. The same types of funds for provincially owned schools have to go through an annual budget cycle. This could lead to a significant number of repair and maintenance projects left unaddressed, i.e. deferred maintenance.

[4] https://www.ontario.ca/document/building-better-lives-ontarios-long-term-infrastructure-plan-2017/technical-appendix-assessing-ontarios-existing-infrastructure

[5] *By definition, the FCI is defined as the ratio of current year required renewal cost to current building replacement value. Building condition is often defined in terms of the FCI as follows:(Good) 0 to 5 percent FCI, (Fair) 5 to 10 percent FCI (Poor) 10 to 30 percent FCI, (Critical) greater than 30 percent.*

The Department does not have a specific plan to address $282.7 million in significant deferred maintenance issues

2.93 Currently, the Department does not have a specific plan to address the significant deferred maintenance issue. The total cost of deferred maintenance has grown to $282.7 million as of September 2019. It will continue to grow if there is no significant effort made to tackle this issue. The budgeted amount for the capital improvement program (approximately $18.5 million in recent years) is arbitrary. It is not a true reflection of real needs based on facility conditions. Aging school infrastructure will require significant investments to maintain. If the existing funding gap continues in the foreseeable future, the Department may face tough choices to either lower the quality standards for educational facilities or possibly shut down schools.

Lack of long-term planning impacts the ability of school districts to implement proactive lifecycle management

2.94 This lack of long-term planning also impacts the ability of districts to implement proactive lifecycle management strategies designed to extend the life of facility components at the lowest total cost of ownership. A combination of short-term planning and reactive asset lifecycle management could result in sub-optimal funding allocations and decision paralysis, while condition of school facilities continue deteriorating.

2.95 School facilities require ongoing maintenance and major upgrades at various intervals to uphold asset condition and meet service expectations. When done strategically, maintenance and major upgrades can extend the life of facility components at a lower cost than replacement options. Without detailed maintenance and upgrade programs there is an elevated risk of unplanned school shutdown and a potential to increase total lifecycle costs of schools.

Government's reactionary approach to capital project funding creates uncertainty in the education system

Bessborough and Hillcrest Schools are examples of uncertainty created by government change

2.96 Other than the weaknesses we identified in the Department's long-term capital planning process, we also found instances where government's reactionary approach to capital project funding created significant uncertainty in the education system. For example, in 2015 the Anglophone school district East recommended the Department perform a mid-life upgrade to Bessborough school. The Department rejected the proposal based on a Building Condition Assessment Study, citing the estimated upgrade costs were more than 70% of building a new school. The school district performed a sustainability study in the following year. They carried out several rounds of public consultation with stakeholders including impacted parents and communities. The result of the study was to close Bessborough and Hillcrest schools and build a new one.

2.97 Based on the result of the sustainability study, the school district made a new proposal to the Department to close the above two schools and build a new one. It was approved by the Department and eventually the Legislature that funding of $1.5 million in fiscal 2018-19 was allocated to scoping a new school. Department staff along with Department of Transportation and Infrastructure personnel started conducting early scoping and conceptual design work. They also initiated the land purchasing process. However, this project was not approved after a change in government in 2018. As a result, the future of this project is uncertain at this point. This uncertainty leaves concerned students, parents and communities wondering what the future of their schools might be. It also makes it difficult for the school district to determine how to tackle serious maintenance issues at these two schools.

Exhibit 2.11 Bessborough School (built in 1959)

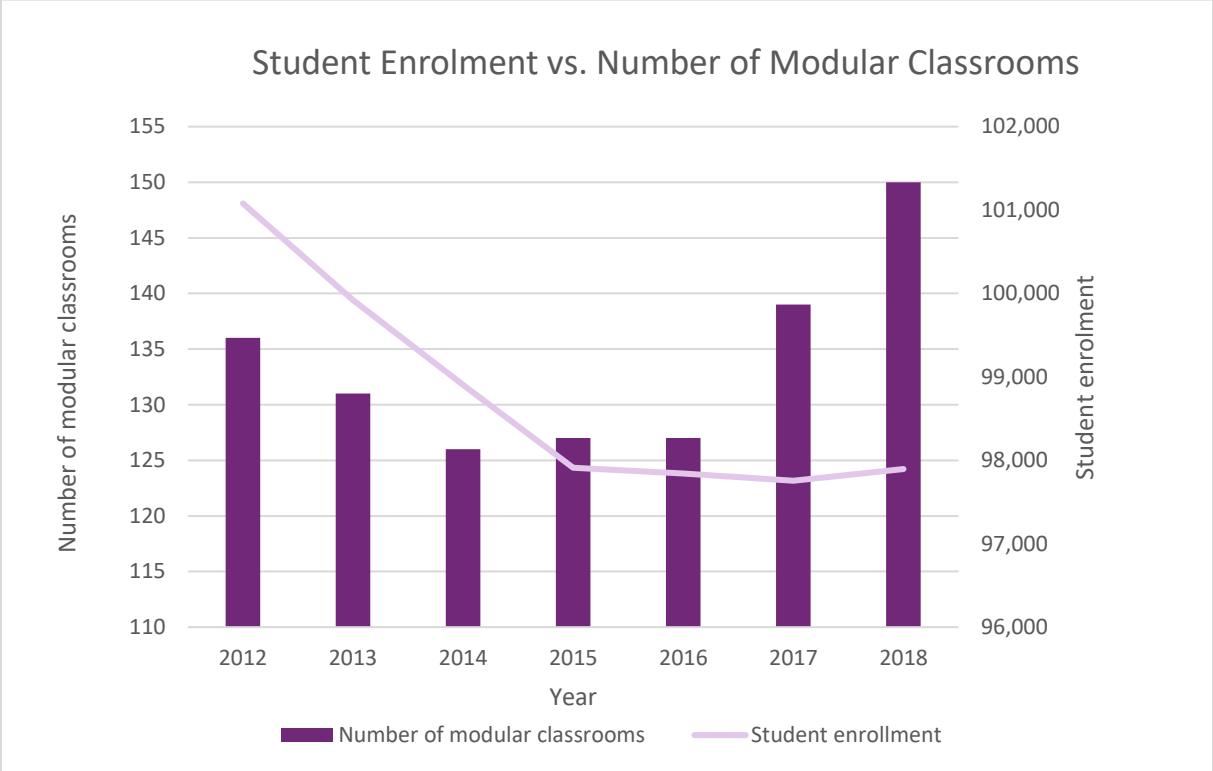
Source: https://acadienouvelle-6143.kxcdn.com/wp-content/uploads/2018/02/Capture-5.png

Modular classrooms increased in recent years

2.98 We believe the lack of long-term planning at least partially contributes to the rising number of modular classrooms in recent years. The Department believes if the government had approved projects in the years they were proposed, the number of portables would be significantly less. The major increase in portables also was due to the revision in French immersion and the enrolment growth due to Syrian refugees.

2.99 There were 150 modular classrooms in the Province as at 2018. This number has been steadily increasing over recent years, yet the overall student enrolment has declined. Exhibit 2.12 demonstrates this trend. Some districts have been experiencing continuous student enrolment growth, particularly in the urban centres of greater Moncton and Fredericton.

Exhibit 2.12 – Number of Modular Classrooms vs Provincial Student Enrollment

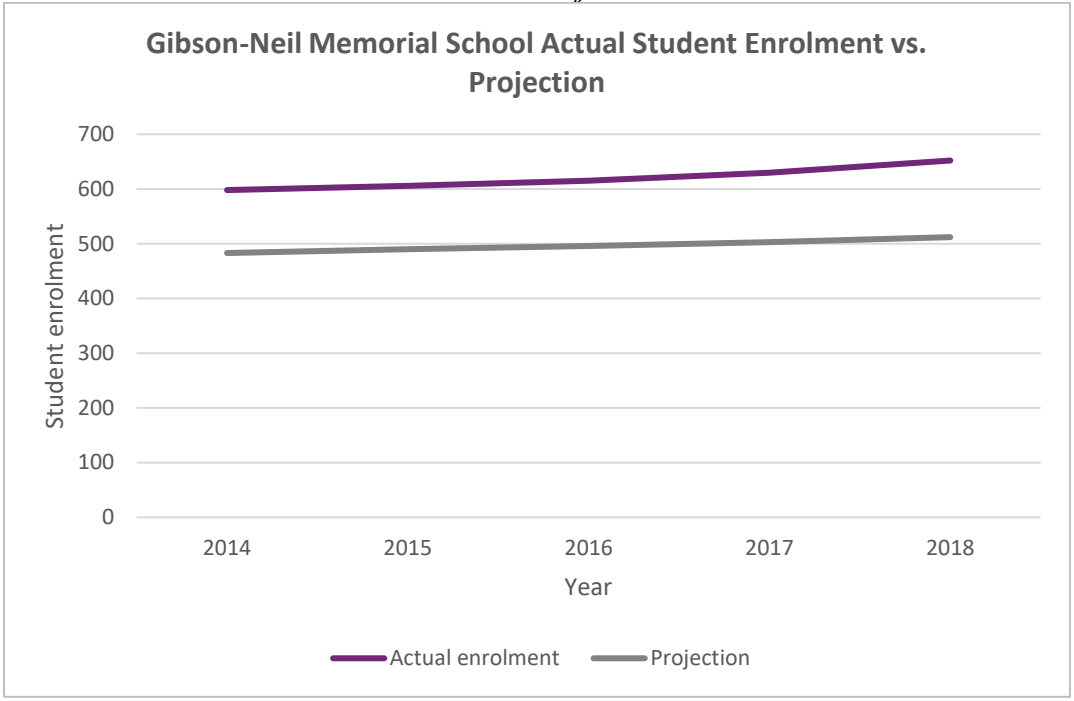


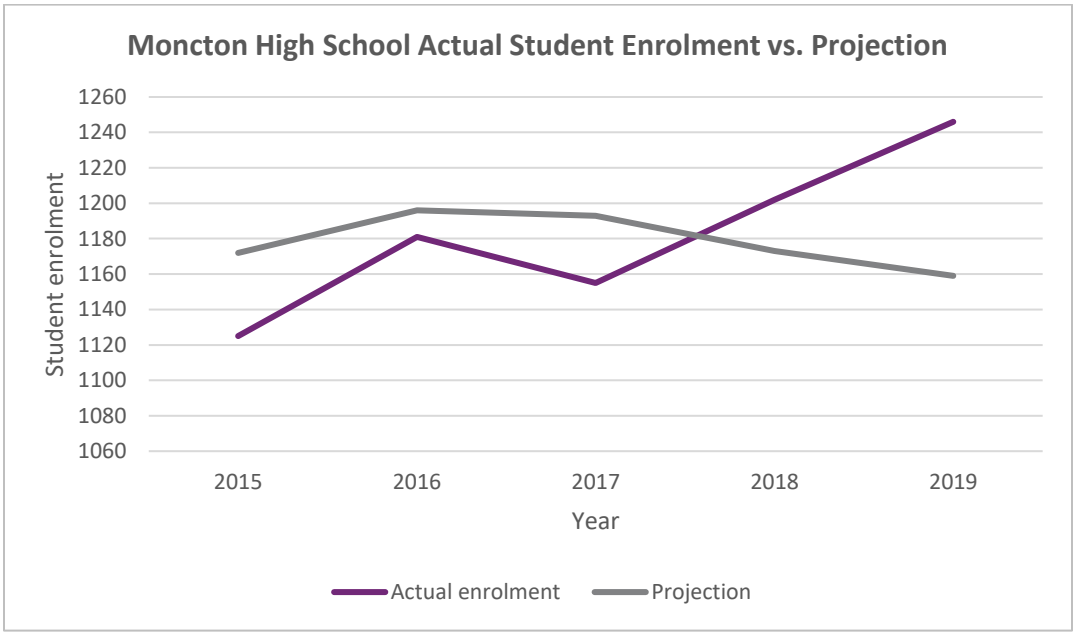
Source: chart created by AGNB with data provided by the Department (unaudited)

Examples showed student enrolment projections were significantly lower than actual

2.100 Gibson Neill Memorial Elementary School in Fredericton opened its doors in 2013, but already has seven mobile classrooms. The new Moncton High School opened in 2015 and it is already operating at full capacity. The school district has considered requesting modular classrooms. It is crucial to have a reasonably accurate student enrolment projection, so the Department can determine the proper size of a proposed school during the design phase. Exhibit 2.13 shows student population projections for both schools were significantly lower than the actual enrolments.

Exhibit 2.13 – Actual Student Enrolment vs. Projection





Source: chart created by AGNB with data provided by the Department (unaudited)

The lack of long-term planning and province-wide approach to enrolment projection may have contributed to the increased use of modular classrooms

2.101 The Department informed us it realizes the importance of changing demographics. It has been putting forward new school projects to address this issue. In 2014 the Department identified the need to implement *"a province-wide student population forecasting software solution (versus relying on historical trends)."*. The Department had not yet implemented this solution at the conclusion of our work. The lack of long-term planning and a province-wide approach to enrolment projections may have contributed to the increased use of modular classrooms.

2.102 The Department highlighted additional factors that contribute to the use of modular buildings, including:

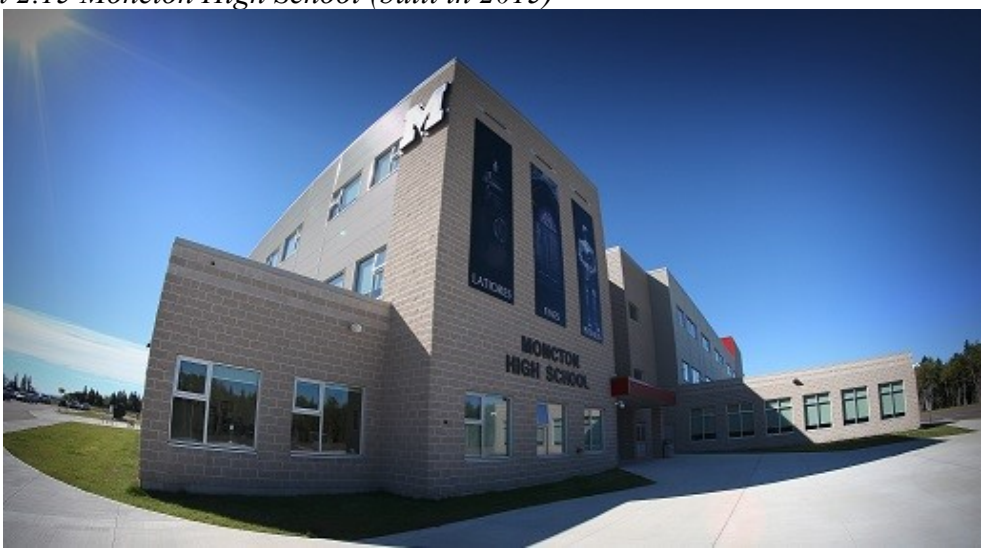
- class composition changes;
- support staff space requirements; and
- early childhood space requirements.

The Department also indicated that changing government direction impacts its ability to meet capacity requirements in schools.

Exhibit 2.14 Gibson-Neill Memorial School (built in 2013) Modular Classrooms

Source: Google Map

Exhibit 2.15 Moncton High School (built in 2015)



Source: https://secure1.nbed.nb.ca/sites/ASD-E/schools/monctonhigh/Pages/default.aspx

Recommendation

2.103 We recommend the Department, in consultation with school districts, re-evaluate student enrolment projection method and implement a province-wide student population forecasting approach.

Recommendation

2.104 We recommend the Department develop a long-term province-wide capital plan for school infrastructure. The plan should include items such as:

- **Projects that are fully scoped, estimated and ready to be delivered in the short to medium term (3 to 5 years);**
- **A broad long-term funding allocation based on an analysis of school facility data and projected budget plan; and**
- **All key elements of the long-term infrastructure sustainability recommendation AGNB made in 2012:**
  - **the rationalization of assets (i.e. if not considered essential, remove from service);**
  - **a long-term approach to budgeting which includes life cycle maintenance;**
  - **a protected stream of a base level of funding determined necessary to adequately maintain schools in service;**
  - **a 20-year planning horizon;**
  - **a process whereby new schools are constructed only when there is a business case to support the need. This should include redirecting savings from rationalized assets (school closures) to the new school's life cycle maintenance costs; and**
  - **provide annual public performance reporting, which includes the 5-year project delivery plan, the actual facility condition of school versus pre-established targets, explaining the reason for any significant variances.**

Insufficient and Poor Quality Facility Condition Data

There is no centralized province-wide database of major school building components

2.105 There is no central database providing a comprehensive listing of all school facilities and major facility components (roof, heating and ventilation, windows and doors, exterior walls, etc.). Instead, there are two separate databases containing limited data related to facility components. They are:

- School Physical Plant Database (SPPD) which lists pending and future capital needs. It is a primary tool used to develop capital improvement project requests, but not considered by school districts as an exhaustive list of all capital needs at schools.
- Maintenance Prevention & Control (MPC) is a system for minor repair work orders which includes some maintenance schedules. It contains listings of facility component data but is considered incomplete and has not been consistently updated to reflect the current asset inventory.

2.106 Although they contain useful information, the two databases are incomplete and do not capture all necessary facility information. It would be difficult to convert these into a centralized asset inventory with complete data for all school facilities in the Province.

We believe the Department, as asset owner, is responsible for developing and maintaining centralized capital asset database

2.107 School districts we interviewed expressed interest in a centralized asset inventory; however, they are concerned about the resources required to update and maintain such a database. Currently, there is no standard approach for school districts to follow to collect facility data across the Province. We believe the Department, as the asset owner, is responsible for taking the leadership role to develop and maintain a centralized asset database. School districts can be involved in assessing asset conditions and collecting facility data.

Incomplete and unreliable data used in capital improvement project planning process for projects identified by school districts

2.108 Certain elements of facility data exist at school districts. However, this is not sufficient or reliable enough to inform the capital improvement project planning processes. We found the following basic facility data regarding major asset components such as windows and doors, heating and ventilation systems, etc. was either unavailable or incomplete:

- in-service date;
- estimated useful life;
- purchase/historical cost; and
- replacement cost.

Risk of knowledge loss due to lack of documentation at school districts

2.109 The school districts we interviewed identified much of the information used to inform asset management decision-making is based on the undocumented knowledge of current facilities staff. There is a risk this knowledge will be lost if these individuals were to leave their current roles.

School districts do not adequately document school facility condition

2.110 We found school districts do not adequately document facility condition to inform asset management planning. Asset condition data will provide a better estimate of the remaining useful life of asset components compared to age-based estimates and can optimize rehabilitation and replacement planning.

Changing facility conditions not documented in visual inspections by district staff

2.111 Visual inspections are completed by facilities staff and sometimes sub-contractors, but school facility condition is not documented. Only deficiencies are identified. School districts can regularly monitor changing asset condition of facility components to inform capital planning processes. This can be achieved through a combination of cursory assessments that can be performed by facility staff in addition to a more in-depth assessments to determine the condition of technical facility components. A cursory condition assessment criterion may be as simple as a 1-5 rating, 1 being *"very good*" and 5 being *"very poor".*

2.112 School districts we interviewed indicated, when capital projects are completed, the Department provides them with insufficient details on facility components that have been installed or rehabilitated. Such details are required to support asset management planning and lifecycle cost analysis.

2.113 Accurate and reliable data on current school conditions allows the asset owner to determine the current state of repair of assets and inform lifecycle management strategies that result in the lowest total cost of ownership. Regular and consistent assessment of asset condition is critical to determining short, medium and long-term capital needs. Out-of-date or incomplete facility condition data may result in inconsistent and subjective asset management decisions.

2.114 The effectiveness of asset management planning to support evidence-based decisions is highly dependent on the availability, accuracy, and reliability of asset data. Without such data, there is a limit to the depth and breadth of analysis possible. Consequently, there is a risk of key stakeholders having a low level of confidence in the accuracy, reliability and fairness of asset management decision-making at the Department. To maintain the confidence of stakeholders and ensure proper asset management planning is based on accurate and reliable information, asset data must be gathered, managed, and stored systematically by the Department.

2.115 In collaboration with the province's school boards, the Ministry of Education of Quebec decided to implement an asset management system, as the Quebec school boards have been faced with such similar issues in New Brunswick as aging building stock, limited financial resources and the risks of knowledge loss.

Recommendation

2.116 We recommend the Department, in consultation with school districts, develop and maintain a centralized asset inventory that contains details of all major facility components to support the Department's capital planning.

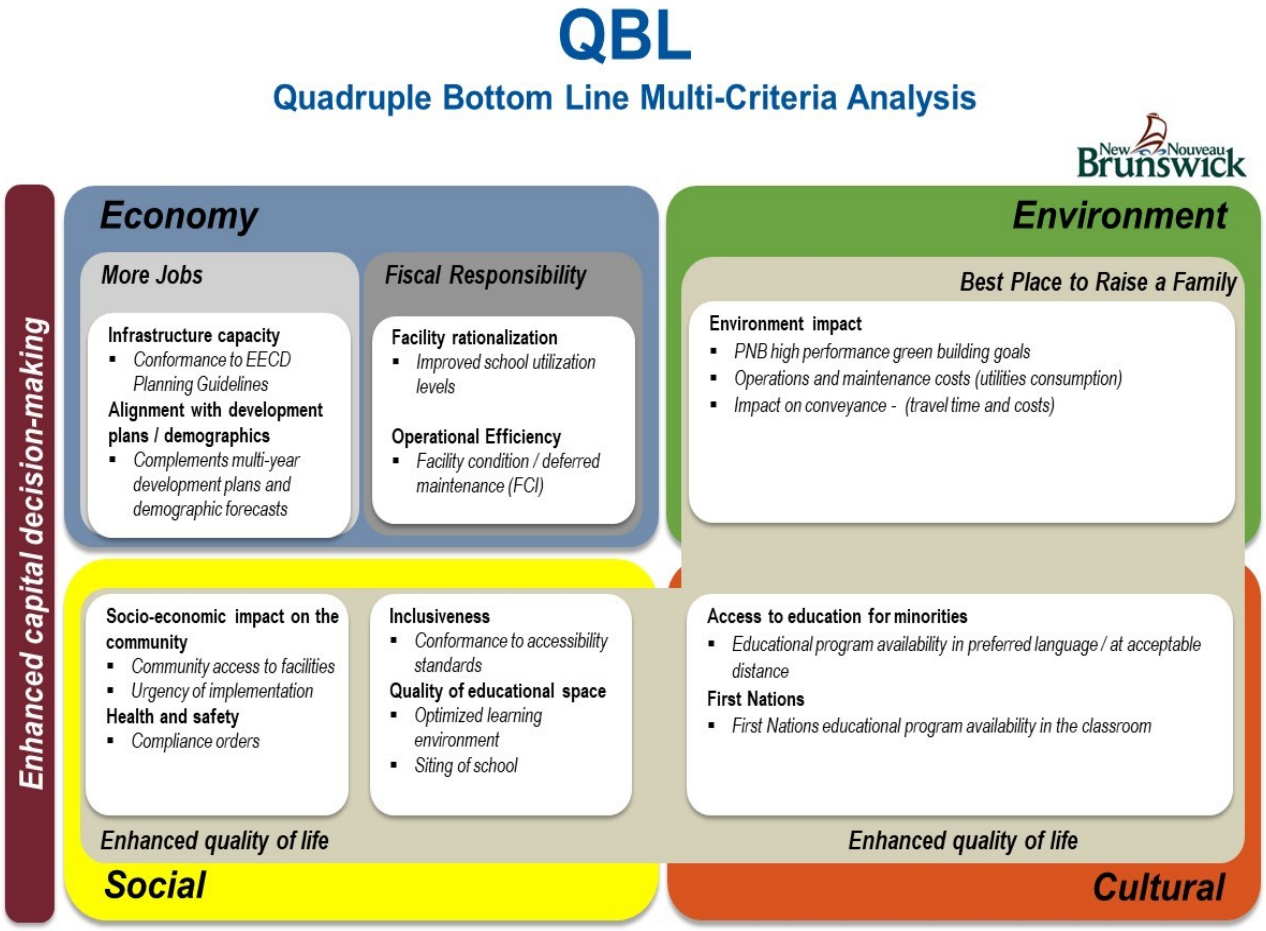
Recommendation

2.117 We recommend the Department develop and enforce data collection standards and requirements for the uniform collection and aggregation of facility data across all school districts.

Appendix I – A Brief Description of Quadruple Bottom Line Multi-Criteria Analysis (QBL)

There are two versions of QBL in this appendix. The first was the one we audited. The Department updated it in December 2019. We presented it in this appendix as a reference.

The version we audited:



Appendix I – A Brief Description of Quadruple Bottom Line Multi-Criteria Analysis (QBL) (continued)

Department Education and Early Childhood Development Enhanced Capital Decision Framework (Quadruple Bottom Line Multi-Criteria Analysis)	
Definitions	
Quadruple bottom line (QBL)	QBL is a methodology for assessing the impact of a project against key objectives, in this case those established by the province of New Brunswick. The EECD provincial QBL includes the following four quadrants: > Economic > Environment > Social > Cultural
Multi-criteria analysis (MCA)	A process by which projects are analysed against a common set of criteria with a weighted scoring system to consistently determine project priorities. Scoring for indicators should be reviewed annually.
Criteria	A significant impact or effect that supports EECD and/or provincial objectives relative to EECD major capital projects. Criteria should be applicable to the majority of major capital projects regardless of type.
Indicators	How the effect of criteria is determined or measured. Note – not all criteria will have measureable indicators / some may be subjective. All criteria will have at least one indicator.
Weight	Indicators are attributed a weighting factor with the sum total equaling 100 for all the indicators. The weighting factor for criteria is equal to the sum of the weighting factors for applicable indicators. Indicator weights were established through consultation with district and EECD representatives.
Indicator scores	When assessing a project, each indicator is scored on a scale of -5 to +5 (very negative to very positive) based on the project effect or impact on the respective indicator.
Weighted scores	Weighted scores are determined by multiplying the indicator weighting by the indicator score. The sum of the weighted indicator scoring is the final project score.
Project types	
New schools	Projects submitted to accommodate growth and/or support cultural diversity. These projects may include major additions where required to meet pedagogical demand.
Rationalization	Projects designed to optimize the provision of infrastructure to meet pedagogical needs. These could include the provision of a new school or improvements to existing infrastructure to accommodate amalgamations.
Replacements	Projects where a new school is more cost effective than refurbishment of existing assets due to high levels of deferred maintenance.
Mid-life upgrades	Projects to extend the useful life of signature schools through capital refurbishment.

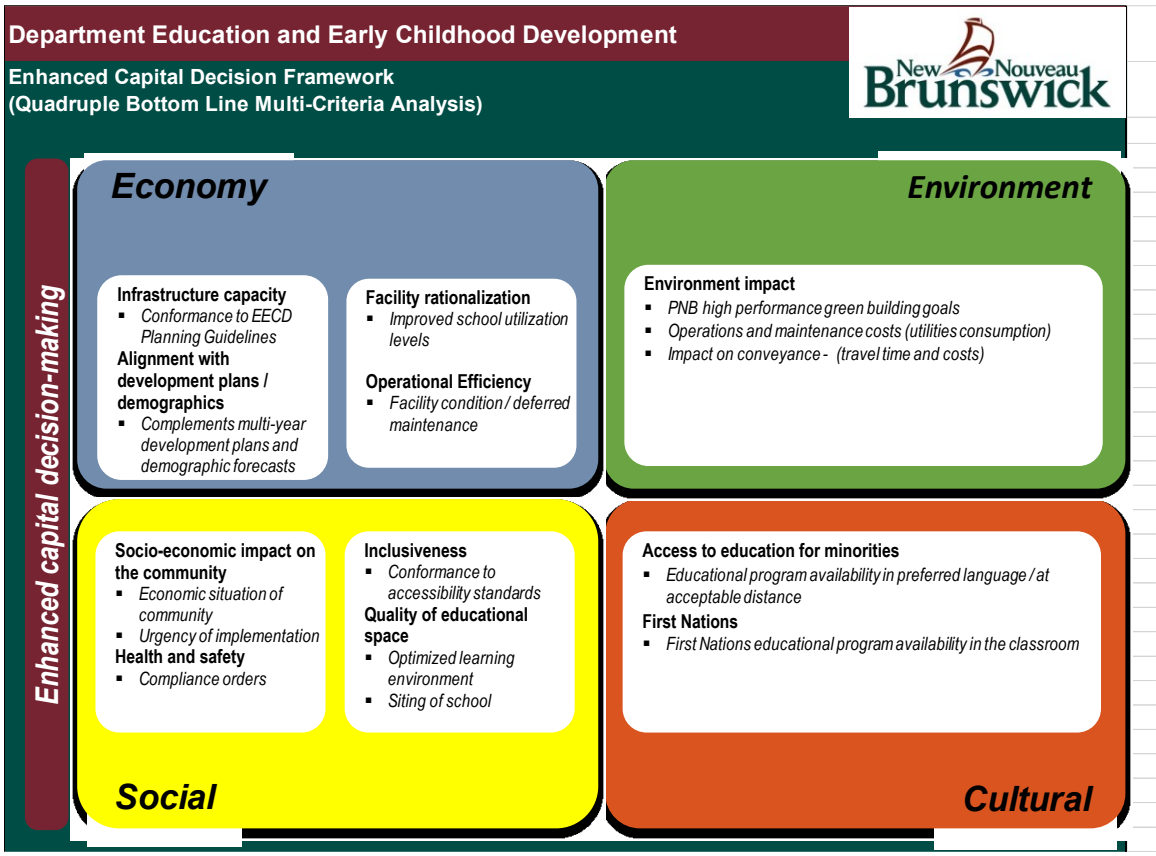
Appendix I – A Brief Description of Quadruple Bottom Line Multi-Criteria Analysis (QBL) (continued)

School Addition Project Example
Department Education and Early Childhood Development
Enhanced Capital Decision Framework
(Quadruple Bottom Line Multi-Criteria Analysis)
QBL MCA MERGED Anglo / Franco Draft Matrix Scoring Chart

QBL	Provincial Objective	Criteria	Indicator Weight	Indicators	Score	Scoring Comments	Weighted Score
Economy Indicator Weighting = 40	More Jobs Indicator Weighting = 20	Infrastructure capacity to meet educational program needs	15	Space / site conformance to EECD Planning Guidelines	5	0	75
		Alignment with regional / local development plans and demographics	5	Complements multi-year development plans / demographic forecasts	3		15
	Fiscal Responsibility Indicator Weighting = 20	Facility rationalization	7	Improved school utilization levels	0		0
		Operational Efficiency	13	Facility condition / deferred maintenance (FCI)	0		0
Environment Indicator Weighting = 16		Environment Impact	7	PNB high performance green building goals	3		21
			5	Operations and Maintenance costs (utilities consumption)	3		15
			4	Impact on conveyance - (travel time and costs)	0		0
Social Indicator Weighting = 36	Best Place to Raise a Family Indicator Weighting Indicator = 60	Socio-economic impact on the community	5	Community access to facilities (considering joint use partnerships)	0		0
			5	Urgency of implementation	0		0
		Health and safety	10	Compliance Orders from WorkSafe NB, Fire Marshall, Public Health, Elevator, etc	0		0
		Inclusiveness	5	Conformance to accessibility standards	0		0
		Quality of Educational Space	5	Optimized learning environment	3		15
			6	Siting of school (considering outdoor air quality, neighbouring uses, traffic, etc).	0		0
Cultural Indicator Weighting = 8		Access to education for minorities	6	Educational program availability in preferred language / at acceptable distance (in support of cultural diversity)	3		18
		First Nations	2	First Nations educational program availability in the classroom	0		0
			100			Total project score	159

Appendix I – A Brief Description of Quadruple Bottom Line Multi-Criteria Analysis (QBL) (continued)

The updated version completed by the Department in December 2019:



Appendix I – A Brief Description of Quadruple Bottom Line Multi-Criteria Analysis (QBL) (continued)

Department Education and Early Childhood Development **Enhanced Capital Decision Framework (Quadruple Bottom Line Multi-Criteria Analysis)**	
Definitions	
Quadruple bottom line (QBL)	QBL is a methodology for assessing the impact of a project against key objectives, in this case those established by the Department of Education and Early Childhood Development in partnership with the school districts. The EECD provincial QBL includes the following four quadrants: > Economic > Environment > Social > Cultural
Multi-criteria analysis (MCA)	A process by which projects are analysed against a common set of criteria with a weighted evaluation system to consistently determine project priorities. Indicators should be reviewed annually.
Tier-1 Project	Tier 1 projects will have top priority for funding and approvals. They are identified as those having significant space deficiences when compared to EECD Planning Guidelines. Project rankings within Tier 1 are based upon the number of teaching platforms missing, demographic trends, and district priority.
Tier-2 Project	Tier 2 projects are projects which do not have significant space deficiences when compared to EECD Planning Guidelines. Project rankings within Tier 2 are based upon assessment of the 15 QBL indicators.
Criteria	A significant impact or effect that supports EECD and/or provincial objectives relative to EECD major capital projects. Criteria should be applicable to the majority of major capital projects regardless of type.
Indicators	How the effect of criteria is determined or measured. All criteria will have at least one indicator. When assessing a project, each indicator is evaluated to determine the positive or negative impact on the criteria Indicators are attributed a weighting factor with the sum total equaling 100 for all the indicators. Indicator weights were established through consultation with school district and EECD representatives. Weighted assessment is determined by multiplying each indicator's weight by its assessment. The sum of the weighted assessments equates to total project assessment.
Project types	
New schools / Additions	Projects submitted to accommodate growth and/or support cultural diversity. These projects may include major additions where required to meet pedagogical demand.
Rationalization	Projects designed to optimize the provision of infrastructure to meet pedagogical needs. These could include the provision of a new school or improvements to existing infrastructure to accommodate amalgamations.
Replacements	Projects where a new school is more cost effective than refurbishment of existing assets due to high levels of deferred maintenance.
Mid-life upgrades	Projects intended to extend the useful life of a school through capital refurbishment.

Appendix I – A Brief Description of Quadruple Bottom Line Multi-Criteria Analysis (QBL) (continued)

Department Education and Early Childhood Development

Enhanced Capital Decision Framework
(Quadruple Bottom Line Multi-Criteria Analysis)

New Nouveau Brunswick

Tier one project? Y/N

QBL	Criteria	Indicators	Assessment	Comments	Weighted Assessment
Economy	Infrastructure capacity to meet educational program needs	Space / site conformance to EECD Planning Guidelines			
	Alignment with regional / local development plans and demographics	Complements multi-year development plans / demographic forecasts			
	Facility rationalization	Improved school utilization levels			
	Operational Efficiency	Facility condition / deferred maintenance			
Environment	Environment Impact	PNB high performance green building goals			
		Operations and Maintenance costs (utilities consumption)			
		Impact on conveyance - (travel time and costs)			
Social	Socio-economic impact on the community	Economic situation of community			
		Urgency of implementation			
	Health and safety	Compliance Orders from WorkSafe NB, Public Safety, Public Health, etc.			
	Inclusiveness	Conformance to accessibility standards			
	Quality of Educational Space	Optimized learning environment			
		Siting of school (considering outdoor air quality, neighbouring uses, traffic, etc).			
Cultural	Access to education for minorities	Educational program availability in preferred language / at acceptable distance (in support of cultural diversity)			
	First Nations	First Nations educational program availability in the classroom			
				Total Project Assessment	

Source: The Department

Appendix II – Audit Objectives and Criteria

The objective and criteria for our audit of the school infrastructure planning are presented below. The Department of Education and Early Childhood Development and all seven school districts reviewed and agreed with the objective and associated criteria.

Objective

To determine whether the Department of Education and Early Childhood Development and school districts are making evidence-based decisions for prioritizing:

- major capital projects for school infrastructure (greater than $1 million); and
- capital improvement projects for existing school infrastructure ($10,000 to $1 million).

Criteria

The Department should:

- Implement a provincial wide long-term capital plan for the provincial school system
- Establish criteria to prioritize capital asset needs and approve capital asset projects that meet priority needs and supported by evidence
- Establish lifecycle decision making process
- Have a plan to address the deferred maintenance issues
- Set goals and evaluate its capital plan against the goals (e.g., capacity utilization, physical condition of buildings, and reduction of deferred maintenance)
- Publicly report the conditions of school buildings

The school districts should:

- Consistently collect accurate and complete building condition information and monitor condition
- Prioritize major capital and capital improvement projects, based on evidence and consideration of life cycle costs
- Comply with the Multi-year School Infrastructure Planning Policy established by the Department

Source of Criteria: Developed by AGNB based on International Infrastructure Management Manual, similar audits conducted by other Auditor General Offices, and SORP 3 by CPA Canada

Appendix III – About the Audit

This independent assurance report was prepared by the Office of the Auditor General of New
Brunswick on the Department of Education and Early Childhood Development and the school districts on School Infrastructure Planning. Our responsibility was to provide objective information, advice, and assurance to assist the Legislative Assembly in its scrutiny of the Department of Education and Early Childhood Development and the school districts on school infrastructure planning practices.

All work in this audit was performed to a reasonable level of assurance in accordance with the
Canadian Standard on Assurance Engagements (CSAE) 3001 – Direct Engagements set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook – Assurance.

AGNB applies Canadian Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

In conducting the audit work, we have complied with the independence and other ethical requirements of the Rules of Professional Conduct of Chartered Professional Accountants of New Brunswick and the Code Professional Conduct of the Office of the Auditor General of New Brunswick. Both the Rules of Professional Conduct and the Code are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

In accordance with our regular audit process, we obtained the following from management:

- confirmation of management's responsibility for the subject under audit;
- acknowledgement of the suitability of the criteria used in the audit;
- confirmation that all known information that has been requested, or that could affect the findings or audit conclusion, has been provided; and
- confirmation that the findings in this report are factually based.

Period covered by the audit:

The audit covered the period between 2015 and 2019. This is the period to which the audit conclusion applies. However, to gain a more complete understanding of the subject matter of the audit, we also examined certain matters that preceded the starting date of the audit.

Date of the report:

We obtained sufficient and appropriate audit evidence on which to base our conclusion on August 17, 2020 in Fredericton, New Brunswick.

Appendix IV – Detailed listing of QBL Indicators requiring improvement

Indicator 4 (Facility Condition – FCI) uses industry standard Facility Condition Index determine a score. Worse condition results in higher score. However, the QBL augments the industry standard by factoring in the age of the asset. This unique methodology improperly limits the facilities that are not too old but with worst condition to achieve highest score.

Indicator 6 (Utilities Consumption) automatically awards new school projects with a maximum score, regardless of the total utilities cost. The indicator states "Projects which reduce utilities consumption will score higher with this indicator". While this indicator may be attempting to address advancements in efficiencies and design by awarding a maximum score, this presents a possible double counting with Indicator 5 (High performance and green building goals) which awards new schools a maximum score based on the assumption that the latest energy efficiency designs would be used in the new school.

Indicator 9 (Urgency of Implementation) deals with the level of urgency required for the project's completion. The project score is determined by an assessment of the wait time (since the project was first submitted by the district to the Department), or by the need for additional education space (determined by the ratio of mobiles to classrooms). This indicator ranks projects higher when the wait time has been longer or the ratio of mobile units to classrooms is higher. Within interviews with the Department, staff explained that any project that is prioritized by the school district as their number one project automatically receives a score of 3 regardless of the criteria of the project. This supersedes the indicator definition and improperly scores projects based on subjective measures.

Indicator 14 and 15 (cultural indicators) is designed to protect each linguistic group, its cultural identity and community. Projects will be assessed on the extent of improvement in educational program availability for minority communities. However, minority statistics are not confirmed or validated during the QBL assessment unless specifically addressed by the school district or previously known to the Department.

First Nation program availability is not assessed through the QBL in a quantitative manner. Definitions of "significant" or "moderate" impact are not provided thus resulting in a subjective assessment of the impact the project would have on first nation students.

Appendix V – QBL Indicator 2 - Complements multi-year development plans / demographic forecasts

Upon the conclusion of our presentation of findings and discussion of the report with the EECD, additional information related to the use of enrollment trend data was brought to our attention. This appendix serves as a summary of that discussion and the introduction of a finding on how they can improve Indicator 2 within the QBL assessment tool using improved mathematical formulas.

QBL Indicator 2 is designed to score student enrolment growth trends that allows for "improved alignment of the infrastructure to multi-year community development plans and rural/urban demographic forecasts." By including this metric, the province can better plan for major capital projects based on changes in enrolment trends. The indicator is designed to use a 5-year average enrolment trend and provide a score based on that trend and project type.

From the discussion with the EECD, it was determined that the department was using the following formula to calculate enrolment over the 5-year assessment period.

$$\frac{\left[\frac{(Year\ 5 - Year\ 1)}{Year\ 1}\right]}{5}$$

This above methodology produces the total average change in enrolment and incorporates the annual average based on the total change into the QBL score.

Difficulties arise in the calculation method as it does not account for changes in enrolment for any years in-between year 5 and year 1 as identified in the example below.

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	EECD Methodology
Grand Bay Primary School	103	110	102	111	117	
Morna Heights School	106	102	97	78	68	
Inglewood School	82	64	62	52	79	
Total	291	276	261	241	264	(264-291)/291)/5 = **-1.86%**

We believe a simple moving average method is more appropriate:

$$\frac{\Sigma\frac{(Year\ 2 - Year\ 1)}{Year\ 1} + \frac{(Year\ 3 - Year\ 2)}{Year\ 2} + \cdots + \frac{(Year\ N - Year\ N-1)}{Year\ N-1}}{N-1}$$

By switching to this new method, the EECD can ensure that enrolment projections consider change in data from each period. The simple moving average approach also reduces the impact of outliers (e.g. anomaly in one period), improves accuracy and reasonableness in forecasting, and improves equity in decision making. However, should the EECD not incorporate the suggested method, there is a risk that projects may receive inaccurate scores within the QBL.

The example on next page displays the difference in the calculated enrolment trend between the EECD's methodology and the proposed simple moving average approach.

Appendix V – QBL Indicator 2 - Complements multi-year development plans / demographic forecasts (continued)

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	EECD Methodology	Simple Moving Average
Inglewood School	82	64	62	52	79	**-0.73%**	**2.68%**

Using the QBL scoring matrix below, the Inglewood School would receive a 0 score for enrolment trends using the current methodology. However, by using the suggested moving average approach, the school would receive a score of 3 (or -3 if proposed project was a rationalization). Where this indicator has a weighting of 5 points, this would cause a 15-point swing to the overall project score.

Forecasted student population change (decline is negative)	New school or Addition	Rationalization	Replacement (for deferred maintenance)	Mid-life upgrade
Significant decline (-4.1% or greater)	-5	5	-5	-5
Moderate decline (-2.0% to -4.0%)	-3	3	-3	-3
Neutral (+1.9% to -1.9%)	0	0	0	0
Moderate growth (2% to 4.0%)	3	-3	3	3
Significant growth (4.1% or greater)	5	-5	5	5

Appendix VI – Repair and Maintenance Payments to Public Private Partnership Schools from 2015 to 2019

School	Repair & Maintenance Payment (thousand $)				
	2015	2016	2017	2018	2019
Evergreen	$336	$340	$344	$348	$353
Leo Hayes	532	538	544	550	556
Northrup Frye	1,116	1,125	1,146	1,171	1,188
Eleanor Graham	1,116	1,113	1,134	1,163	1,180
Total	$3,100	$3,116	$3,168	$3,232	$3,277