



Assembly of First Nations

First Nations Education Infrastructure

Capital and Operations and Maintenance

Needs Assessment

Issued: August 31, 2026

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1.0 Introduction

1.1 Assembly of First Nations

The Assembly of First Nations (AFN) is a national advocacy organization that works to advance the collective aspirations of First Nations individuals and communities across Canada on matters of national or international nature and concern. The role of the National Chief and the AFN is to advocate on behalf of First Nations as directed by First Nations-in-Assembly, including facilitating and coordinating national and regional discussions and dialogue, advocacy efforts and campaigns, legal and policy analysis, and communicating with governments [1]. The AFN is dedicated to advancing the aspirations and priorities of First Nations through study, response, and advocacy on a range of policy matters [2].

1.2 Study Scope

In July 2019, First Nations-in-Assembly resolved to support Resolution 34/2019, *First Nations Education Infrastructure Review*, which supports policy or program changes to First Nations education infrastructure. Furthermore, the Resolution indicates that this review would be led by the AFN, the Chiefs Committee on Education (CCOE), and the National Indian Education Council (NIEC). Alongside the ongoing Education Transformation process, the AFN Languages and Learning Sector has been working to conduct research and develop a set of recommendations for the NIEC and CCOE regarding First Nations education infrastructure policy and issues. As part of these recommendations, it was encouraged that AFN undertake an education infrastructure review on a national scale.

First Nations Engineering Services Ltd. (FNESL) was retained in December 2019 to complete a National First Nations Education Infrastructure Capital Needs Assessment over a 15-year planning period. This project provides essential research to equip the AFN, CCOE, NIEC and other stakeholders in identifying existing and anticipated education infrastructure needs on reserve across Canada.

In April 2021, FNESL was retained to update the assessment to account for changes to Indigenous Services Canada's School Space Accommodation Standards. For this iteration, it was determined that a 20-year planning period would be more suitable in order to facilitate integration of the report findings with the broader infrastructure planning initiative underway by AFN, the National First Nations Infrastructure Assessment, which utilizes a 20-year planning period.

This report builds on these previous studies, updating the cost once again to account for the revised School Space Accommodation Standards published by ISC in April 2023. The revisions allow for more space and added flexibility for culturally appropriate and land-based education programs. This increased flexibility is not reflected in the broad-scale roll-up of this study, as it is standardized for nearly 400 schools across Canada. Thus, every First Nation must pursue a feasibility study/preliminary design exercise in determining the required gross floor area for their individual programs.

This project consists of a review of existing documentation (such as ACRS data, historical O&M information, and nominal roll data) and current cost information (such as RSMeans cost data adjusted to 2025) to determine trends and summarize existing infrastructure and funding. The infrastructure needs for schools and teacherages in First Nations across the country has been



determined for the following phases: immediate, years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20. Capital needs for both schools and teacherages are considered. The particular context and needs of remote First Nations are also discussed.

The objectives of this study are to:

- Complete capital costing of all schools on reserve in Canada (immediate, 5, 10, 15, 20-year periods), assuming the same grades that are currently serviced continue to be used
- Complete capital costing of all teacherages on reserve in Canada (immediate, 5, 10, 15, 20-year periods)
- Summarize capital cost needs for education infrastructure for all First Nations in Canada over the 20-year planning period
- Discuss the unique education infrastructure challenges facing northern & remote First Nations
- Update the estimated annual O&M Requirements for First Nations Education Infrastructure (Schools and Teacherages)
- Discuss cost multipliers related to remoteness, comparing those developed for previous education infrastructure studies with those used in the Closing the Infrastructure Gap by 2030 (CTIG) study.

1.3 Existing Schools

For this study, Indigenous Services Canada (ISC) compiled and shared data for First Nations on-reserve school facilities, which excluded federal schools, private schools, schools in self-governing First Nations communities, and schools whose education programming is delivered by the province. With these exclusions, 409 schools remain, which have been assessed for this study. Of these, 12 have a nominal roll of zero and are therefore assumed to be non-operational. An additional 2 schools are provincially funded and have been excluded, leaving a total of 395 schools.

1.4 Existing Teacherages

Based on the anonymized data provided by ISC for this study, there are 1222 teacherages on reserve in Canada. Some First Nations have only one teacherage, and one has as many as fifty-two (52) teacherages. This accounts for a total of 175,507.35 m² of teacherage space. Our analysis focuses on the amount of teacherage space needed per First Nation with existing teacherages, using a random "Band Number" identifier to determine which First Nation they belong to.



2.0 Data Collection & Analysis

2.1 Sources of Information

Various sources of information were used in preparation for this report. The following documents were provided by Assembly of First Nations for review:

1. Integrated Capital Management System (ICMS) and Nominal Roll Information Summary, compiled by ISC for all First Nations in Canada (including data from Asset Condition Reporting System (ACRS) inspections), December 2025
2. 2000 to 2024 Registered Indian Population data from ISC records, by age and residency

Other significant sources of information accessed for this study include:

1. ISC School Space Accommodation Standards (SSAS)- April 1, 2023
2. ISC 2023 School Space Accommodation Standards (SSAS) Calculator (Excel format)
3. Previous reports developed by AFN with FNESL:
 - a. AFN First Nations Education Infrastructure Operation and Maintenance Needs Assessment (2022)
 - b. AFN First Nations Education Infrastructure Capital Needs Assessment (2021)
4. 2021 RSMeans Facilities Maintenance & Repair Costs adjusted to 2025 Dollars
5. Statistics Canada Construction Cost Index Data (2020-2025)

2.1.1

Data Collection and Compilation

The following information was accessed from the various data sources outlined above:

School Size	-	The gross floor area of each school operated by the First Nation. Information available in the latest version of the ACRS report
Building Age	-	Building age of each school operated by the First Nation. Information available in the latest version of the ACRS report (2025 minus year school was constructed)
Building Condition / Years Remaining	-	Building condition and years of life remaining for each school operated by the First Nation. Information available in the latest version of the ACRS report
School Grades	-	The grades served for each school operated by the First Nation. Information available from nominal roll information supplied by ISC
Enrolment	-	Enrolment for each school operated by the First Nation. Information available from most recent enrolment data supplied by ISC

Some assumptions were required due to the lack of specific information on the average student enrolment growth rate, the average distribution of the student body across grades, the average proportion of special needs students, and the identification of schools requiring additional gym



allowance. Discussion regarding relevant background information that informed these assumptions is described in sections 2.2 to 2.5.

2.2 Enrolment Growth Rate

Similar to the previous AFN education infrastructure needs studies, this Capital and O&M Needs Assessment Study required an estimated enrolment growth rate to apply to nominal rolls across First Nations schools in Canada in order to determine the required school floor area at various stages over the planning period. To determine what a reasonable “enrolment growth rate” would be, ISC data for the Registered Indian Population from 2000 to 2024 has been reviewed. Trends in overall population growth were assessed for the total Registered Indian population as well as the population On Reserve / Crown land. Trends in the population of student-aged youth (estimated as 5 to 19) have also been observed. Further, a Cohort Survival Projection was developed for the total on reserve population using cohort survival model software, Spectrum DemProj v6, as a basis for developing draft enrolment projections.

The most recent available (2024) on reserve population, adjusted for late reporting of births, was used as the population in the initial year for the cohort survival projection. There are six variables associated with the computerized cohort survival model: migration rates, fertility rates, life expectancy, life model tables, age specific fertility rates, and sex ratio of males and females at birth. Using the DemProj program with these variables, an analysis was performed to project the total population, for each year, over the planning period. Values to be used for each variable in the software were determined by assessing Canadian averages and adjusting to account for observed trends in the Registered Indian Population, as documented in the Statistics Canada report *Projections of the Aboriginal Population and Households in Canada, 2011 to 2036*.

The result of the cohort survival projection was that the total On Reserve/Crown Land population is expected to grow from 549,669 in 2024 (this value has been adjusted to account for late reporting of births) to 982,694 in 2045. This projection represents an Average Annual Growth Rate (AAGR) of 3.53%. This projection is greater than the *Projections of the Aboriginal Population and Households in Canada, 2011 to 2036* (Scenario 3, Constant Fertility), which projected the First Nation Population to have an average annual growth rate of 1.8% over the planning period. The population growth rate projected in this study is consistent with First Nation Population growth when not constrained by housing availability on reserve and changes in the Indian Act related to the restoration of Indian status to women who were historically stripped of and denied status, and the transfer of Indian status to their children.

The results of the cohort survival projection also indicate the projected population in each 5-year age cohort over the planning interval. The DemProj results indicate that by 2045, there are expected to be 227,794 youth aged 5 to 19 residing on reserve. This represents an average annual growth of 1.75% in this youth age cohort from the 2019 population of 5 to 19-year-olds of 144,927.

Based on this analysis, this Education Infrastructure Capital Needs Assessment Study assumes an “average enrolment growth rate” of 1.75% per year for all schools.

2.3 Distribution of Enrolment Across Grades

The School Space Accommodation Standards uses inputs such as the number of kindergartens, primary, junior secondary, and senior secondary students to determine school floor area



requirements. In order to assign projected enrolment to grades, it is necessary to understand the typical distribution of students across age cohorts. Previous reports analyzed the population data for all First Nations youth on reserve to understand and be able to approximate how the student body at each school may be distributed across grades.

The on-reserve population aged 5 to 19 was reviewed for this analysis. In some years, such as 1998 and 1999, there are slightly more 5 to 9-year-olds than 10 to 14-year-olds, and the number of 11 to 15-year-olds was lower than that of the other two cohorts. In other years, such as 2009 and 2010, the distribution is reversed, in that among 5 to 19-year-olds there are slightly more 15 to 19-year-olds than 10 to 14-year-olds, with the least amount of 5 to 9-year-olds.

In addition to assessing each year's youth cohort distribution, FNESL also considered the average distribution across the 1998 – 2019 data range. On average across all 22 years reviewed, of the on-reserve youth aged 5 to 19, 34.2% are 5 to 9 years old, 33.7% are 10 to 14 years old, and 32.1% are 15 to 19 years old.

As the year-over-year variance precludes confidently predicting the distribution across grades, and as the average distribution is well-balanced among these youth-aged cohorts, it is reasonable to assume that projected enrolment may be evenly distributed among school grades.

2.4 Number of Special Needs Students

To use the School Space Accommodation Standards to calculate the required floor area for a projected school enrolment, it is also necessary to estimate how many special needs students there will be at each school, as this is an input into the SSAS calculations. For this high-level needs assessment study, we have assumed a uniform proportion of students with special education needs, which was applied to all schools.

The analysis completed as part of the 2021 AFN Education Infrastructure Capital Needs study has been confirmed over time in consultation with First Nation Education Authorities, supporting that 30% is a reasonable value to estimate special needs numbers for a high-level needs assessment such as this one. The previous approach to this analysis is included below. The following data and findings helped to confirm what proportion to assume:

- The research which is available on First Nations communities strongly suggests that disabilities and special needs are high on reserve, in fact considerably higher than in the population at large (at least double, in some places 3 to 5 times the average) [3]
- Among the entire Canadian population aged 15 to 24 years, the prevalence of disability was determined to be 13.1% in 2017 [4]
- In 2017, 32% of First Nations people living off reserve had one or more disabilities that limited them in their daily activities [5]
- In 2017, the percentage of First Nations people with disabilities living off reserve varied among provinces and territories, from as low as 20.9% in the Northwest Territories to as high as 45.0% in Nova Scotia [5]
- "In Ontario, the provincial average of special needs children is approximately 10%. In First Nations, it is tripled" [6]



- The percentage of the “high cost” population for First Nations was 16.4% versus 7.1% for the provincial jurisdiction [7]
- From the study *Mi’kmaq Students with Special Education Needs in Nova Scotia*, 35% of MiKmaq Kina’Matewey students were identified by school personnel or special needs specialists to have additional learning needs (versus an estimated 17% of Nova Scotia students in the public school system) [3]
- In New Brunswick, approximately 1600 children on-reserve attend provincial schools, and over 31% of them access provincial special education [7]
- “Approximately 30 per cent of [Manitoba First Nations School System] students meet the criteria for high costs special education needs. This doesn’t take into account the needs of those students that would meet the low costs criteria” [8]
- In the 2005/2006 Special Education Program (SEP) final report for the BC region, it was indicated that approximately 24% of the First Nations schools’ population had been identified as High-Cost special education students [9]
- The *Special Education Program Evaluation Form* was sent to all First Nations Schools with SEP funding in British Columbia in the 2006/2007 school year, and 106 band-operated schools returned completed evaluations. Of 5608 responding students, approximately 29.8% were identified as having special education needs. Of these, 936 had been formally assessed and identified as special needs students, and 737 had been informally assessed and judged by principals and teachers to fit the learning and social emotional characteristics of special needs students [9]
- A summary of high-cost special needs students from 2002/2003 to 2006/2007 among First Nations students across Canada found that the average proportion of HCSE students was 10.2% of total students across all regions [3]
- Data from 2004 of special education needs among BC First Nations students showed that high-cost students accounted for almost exactly one third of the total special needs student numbers (647 high-cost special education needs, 1273 low-cost special needs) [3]

From this data, and in accordance with the institutional knowledge and experience of the Assembly of First Nations and various Regional First Nations advocacy bodies, we have included in this study that 30% of all First Nations students on reserve are assumed to have special education needs.

2.5 Extra Gym Allowance

Another variable that affects the floor area calculation for a given school is whether the First Nation is a remote zone 3 or 4 community that does not have another emergency shelter and is therefore eligible for an additional gym allowance. Recent Tier 1 school review data submitted to ISC suggests that more than 50% of Zone 3 or 4 schools submitted received an extra gym allowance. Therefore, this study assumes that 50% of all Zone 3 and 4 schools would be eligible for the extra gym allowance [10].

3.0 Summary of Existing Assets

3.1 Schools

Based on a review of asset and nominal roll data supplied by ISC (December 2024), there are 409 First Nations schools on reserves throughout Canada, which together currently accommodate 77,443 students. This number excludes all federal and private schools, as well as schools in self-governing First Nations communities, and schools whose education programming is delivered by the province. It is also important to note that 11 of the 409 schools are assumed to be closed based on having a nominal roll of zero. An additional 2 schools are provincially funded and have been excluded. In total, 395 schools have been included in this study.

These schools can be categorized according to the four zones, which indicate the remoteness of the community in relation to the distance from the nearest service center. The nearest service center is defined as the nearest community where a First Nations school can access government services, banks and suppliers. Using the above definition of a service center, First Nations schools are classified geographically into the following zones:

- Zone 1 is when the First Nation is located within 50 km of the nearest service center with year-round road access.
- Zone 2 is when the First Nation is located between 50 and 350 km from the nearest service center with year-round road access.
- Zone 3 is when the First Nation is located over 350 km from the nearest service center with year-round road access.
- Zone 4 is when the First Nation has no year-round road access to a service center and, as a result, experiences a higher cost of transportation, administration, supplies, O&M, etc.

Of the school assets in the database prepared by ISC, there are 114 First Nation schools located in Zone 1, 185 in Zone 2, 12 in Zone 3, and 84 in Zone 4. This information is presented in Figure 3.1 below.

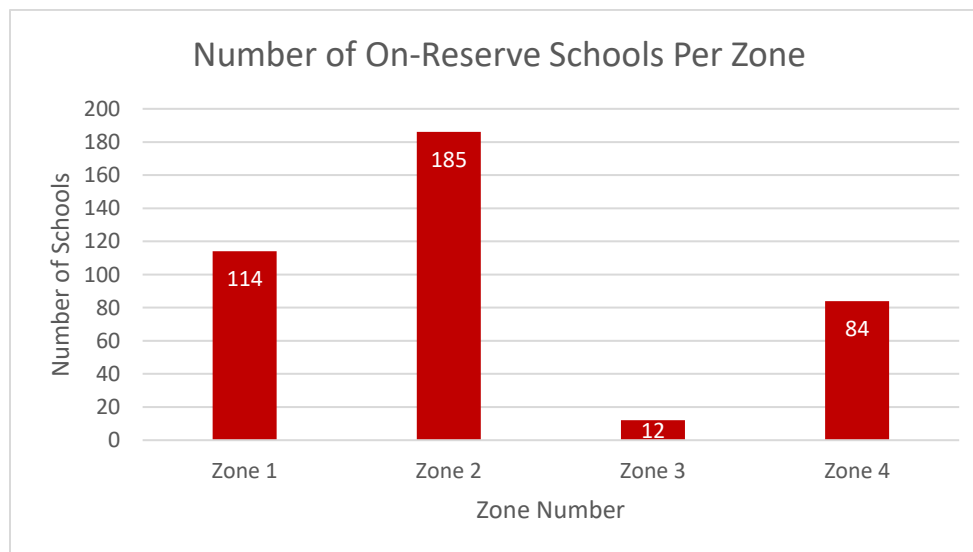


Figure 3.1 Number of On-Reserve Schools per Zone

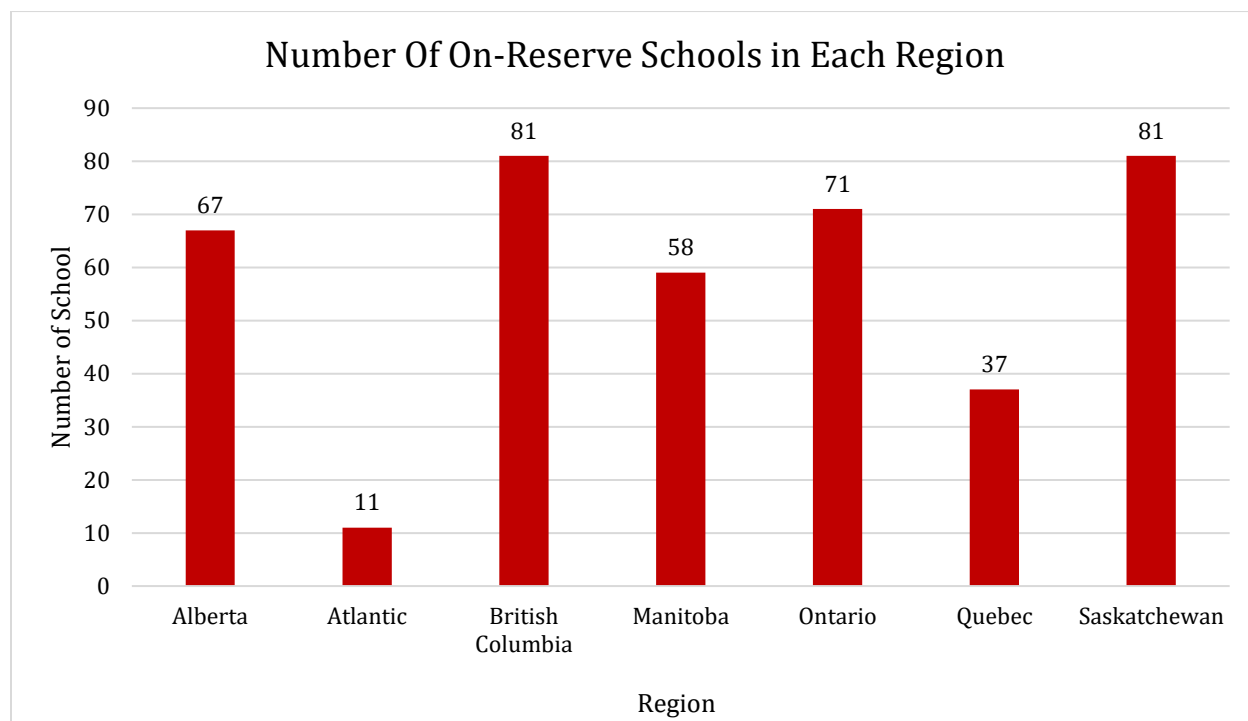


Figure 3.2 Number of On-Reserve Schools per Region

The above graph represents the number of schools in each region. There are 67 schools in Alberta, 11 schools in Atlantic, 81 Schools in British Columbia, 58 Schools in Manitoba, 71 in Ontario, 37 schools in Quebec, and 81 schools in Saskatchewan. British Columbia and Saskatchewan have the greatest number of schools, while the Atlantic region has the smallest number of schools.

The overall average number of students per First Nations school is 176. This average varies from zone to zone, as follows:

- Zone 1 schools have, on average, 160 students per school
- Zone 2 schools have, on average, 212 students per school
- Zone 3 schools have, on average, 170 students per school
- Zone 4 schools have, on average, 246 students per school

As can be observed from the statistics above, Zone 1 has the lowest average number of students per school, while Zone 4 has the greatest average number of students per school. This information is summarized in Figure 3.2 below.

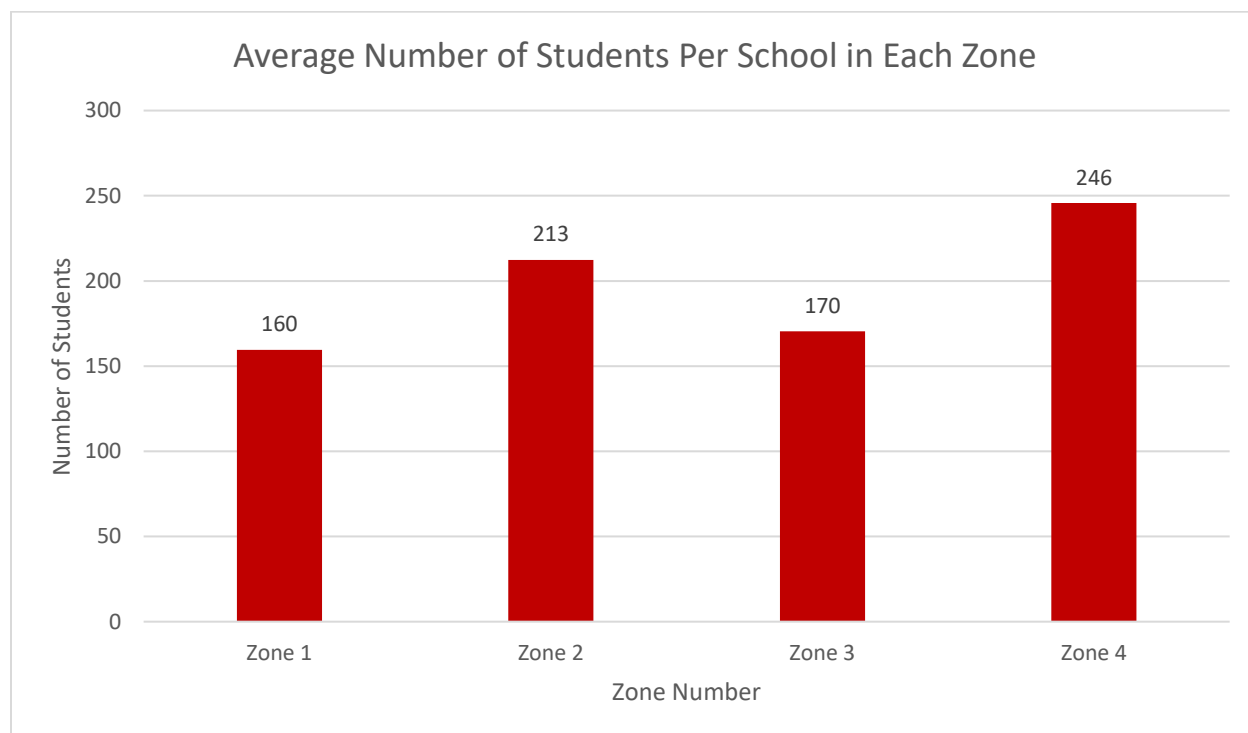


Figure 3.3 Average Number of Students per School per Zone

The average number of students per school in each region is as follows

- Ontario schools have an average of 179 students per school.
- British Columbia schools have an average of 61 students per school.
- Saskatchewan schools have an average of 250 students per school.
- Manitoba schools have an average of 371 students per school.
- Alberta schools have an average of 206 students per school.
- Quebec schools have an average of 190 students per school.
- Atlantic schools have an average of 173 students per school.

As observed from the graph below, British Columbia has the lowest average number of students per school, and Manitoba has the highest average number of students per school.

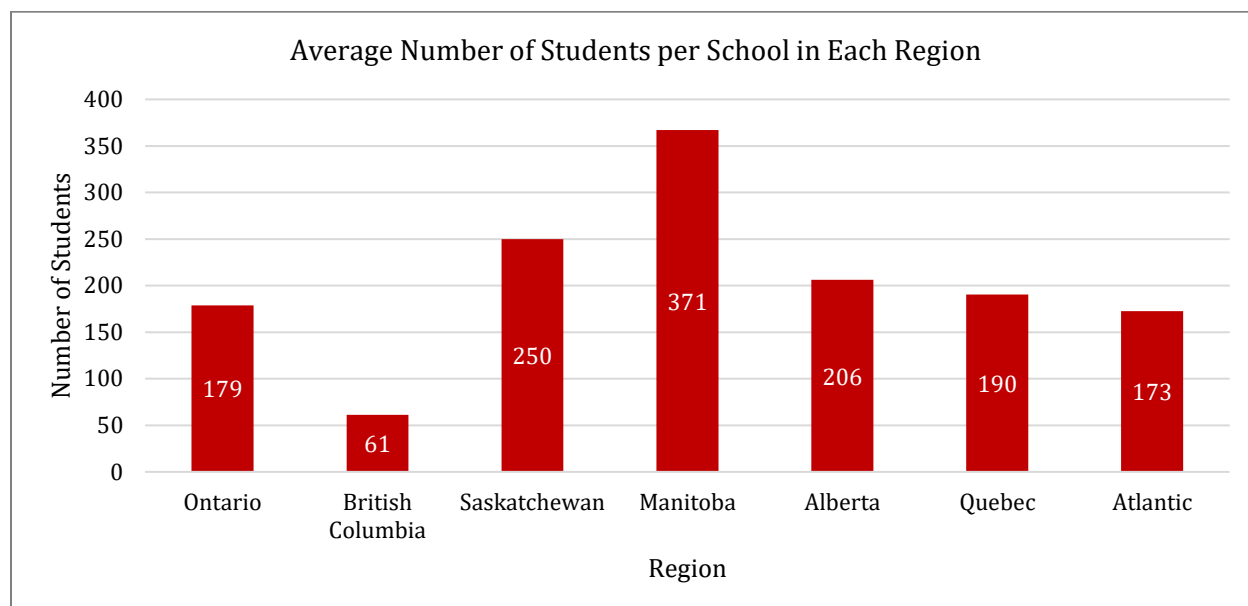


Figure 3.4 Average Number of Students Per School in Each Region

Of the 395 schools included in this study, 44 schools have portables, with an average of 2 portables (per school with one or more portables). The average construction year of portable education structures is 2006, making the average portable approximately 19 to 20 years old at the time of writing. The average General Condition Rating (GCR) of portables according to the latest ACRS inspection is 7.06. The average O&M rating for the portable assets was Fair.

The average year of construction of on-reserve First Nations schools was found to be 1997. The average year of construction in Zone 1 for First Nations schools is 1995, Zone 2 is 1997, Zone 3 is 1995, and Zone 4 is 2000. On average, the schools that are in Zone 1 and Zone 3 have the lowest average construction year, and the schools that are in Zone 4 have the highest average construction year. This information is depicted in Figure 3.3 below.

When interpreting the chart, the lower lines represent the range of construction year in the oldest 25% of schools, the blue bar represents the distribution of the 25% of schools below the median age, the red bar represents the distribution of the 25% of schools above the median age, and the upper line represents the distribution of age in the newest 25% of schools. The line where the blue and red bars meet is the median year of construction.

For example, 50% of Zone 1 schools were constructed between 1988 and 2004 with the median construction year is 1996, while the oldest 25% were built between 1940 and 1988, and newest 25% constructed between 2004 and 2024. Looking at all four zones, it can be seen that many schools were constructed between roughly 1996 and 2010, as seen in the red bars.

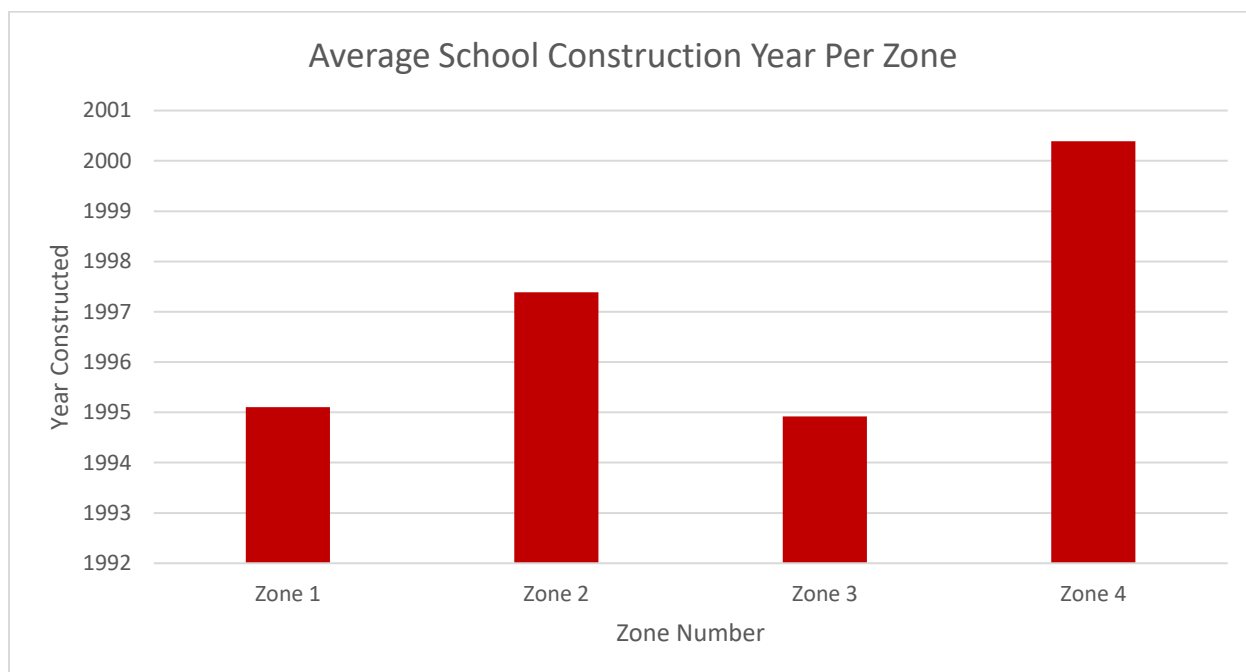


Figure 3.5 Average School Construction Year Per Zone

According to the most recent ACRS inspection information, the average estimated remaining life of all schools is 24.7 years. In Zone 1, the average estimated life remaining is 24.8 years, in Zone 2 it is 24.5 years, Zone 3 it is 27.2 years, and in Zone 4 it is 24.8 years. The school buildings in Zone 2 have the lowest average estimated life remaining, while the schools in Zone 3 have the highest average estimated life remaining. This information is depicted in Figure 3.4 below.

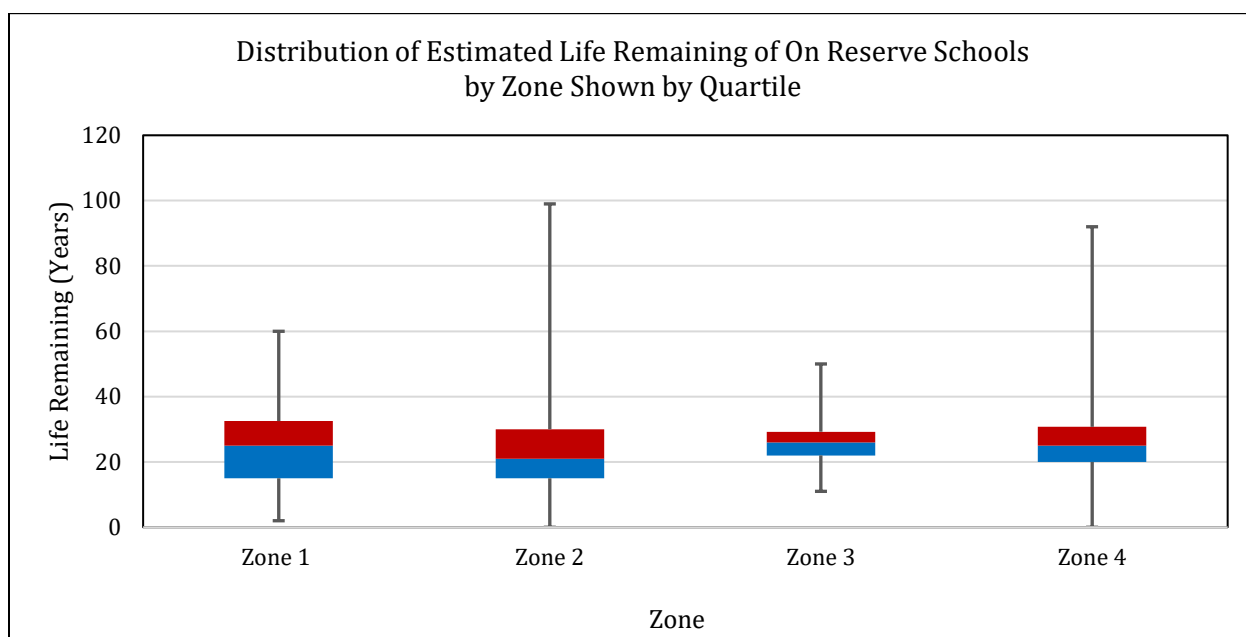


Figure 3.6 Distribution of Estimated Life Remaining of On Reserve School by Zone shown by Quartile

The above box and whisker plot shows the distribution of estimated remaining life of the schools across various regions. For example, in Ontario, the oldest 25% of the schools have between 5 and 20 years of remaining life, which is represented by the lower whisker line. 25% of schools below the median are represented by the blue bar and have about 20 to 25 years of remaining useful life. The line between the blue and red bars depicts the median, which is 25 years. 25% of the schools over the median remaining life have between 25 to 35 years of remaining life and are represented by the red bar. The upper whisker line denotes the newest 25% of schools, which have between 35 to 50 years of estimated remaining life.

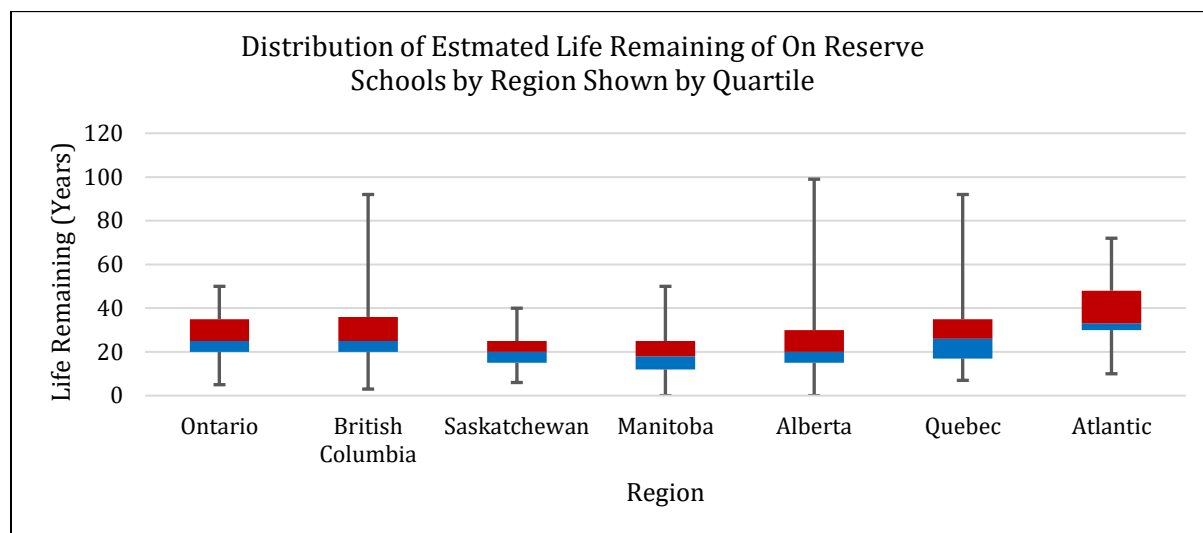


Figure 3.7 Distribution of Estimated Life Remaining of On Reserve School by Region shown by Quartile

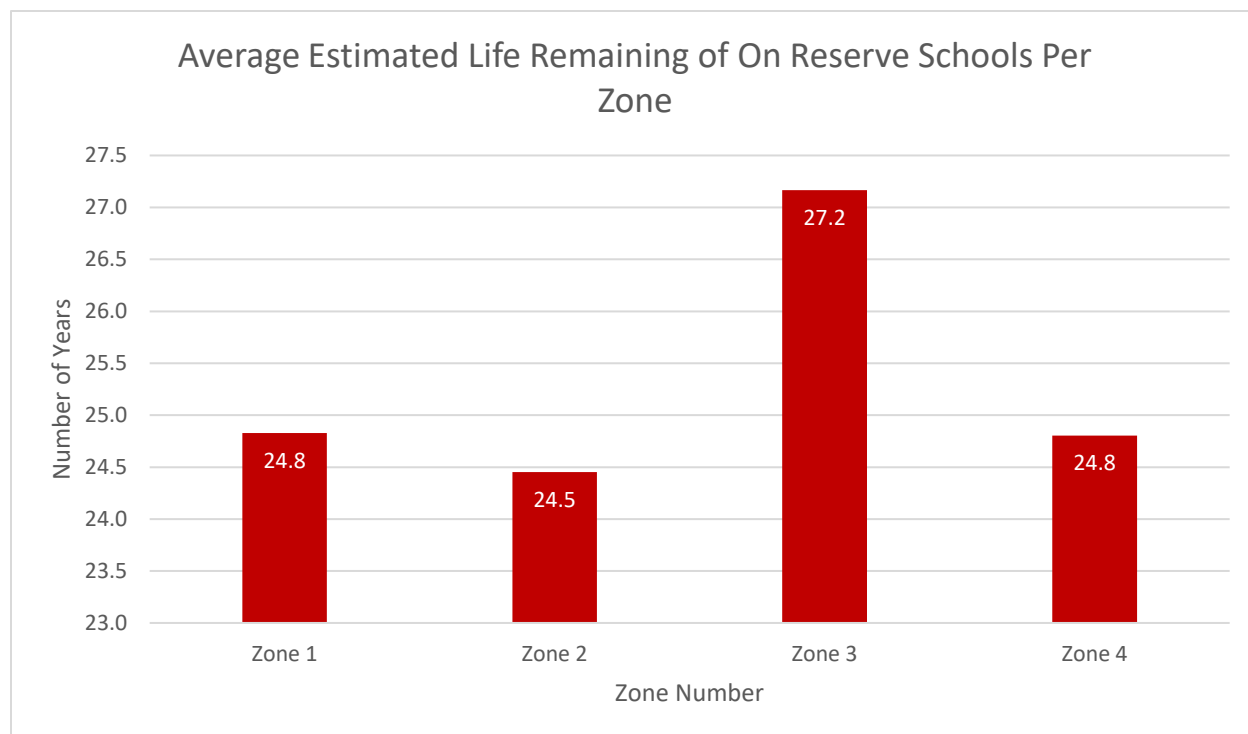


Figure 3.8 Distribution of Estimated Life Remaining of On Reserve School by Zone



The overall average General Condition Rating for on-reserve schools in all zones was determined to be 6.77 (which corresponds to a “Fair” rating). Each of the four zones also independently had an average school GCR rating of “Fair”, as follows:

- Zone 1 schools had an average GCR of 6.8
- Zone 2 schools had an average GCR of 6.75
- Zone 3 schools had an average GCR of 6.83
- Zone 4 schools had an average GCR of 6.78

As reported in ACRS inspection reports, the most frequent GCR rating in Zone 1 (the mode) is 7, which occurred 38 times out of 114 schools. The most frequent GCR rating in Zone 2 is 7, which occurred 47 times out of 186 schools. The most frequent GCR rating in Zone 3 is 7, which occurred 5 times out of 12 schools. Lastly, the most frequent GCR rating in Zone 4 is also 7, which occurred 29 times out of 84 schools. This data is depicted in Figure 3.5 below.

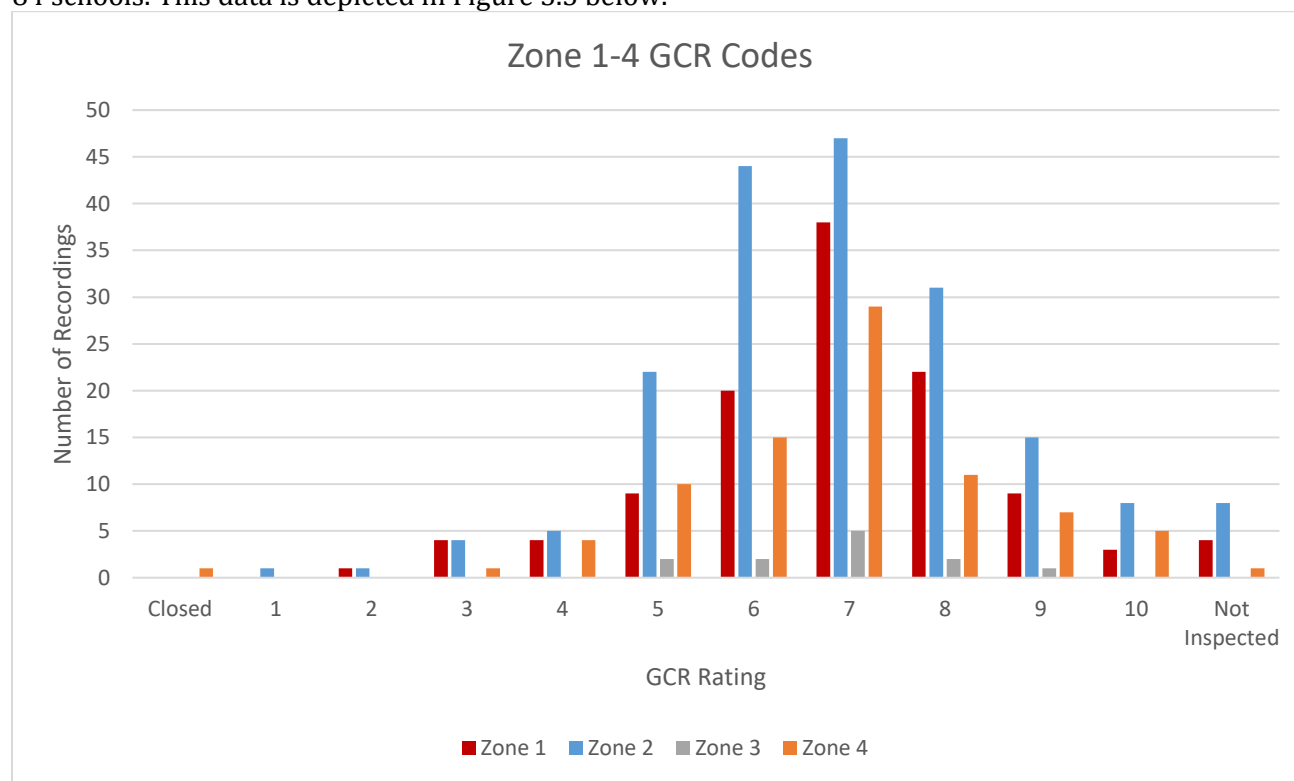


Figure 3.9 GCR for Schools Per Zone

The following graph shows the distribution of GCR ratings of schools across various regions. Most schools received ratings between 6-8.

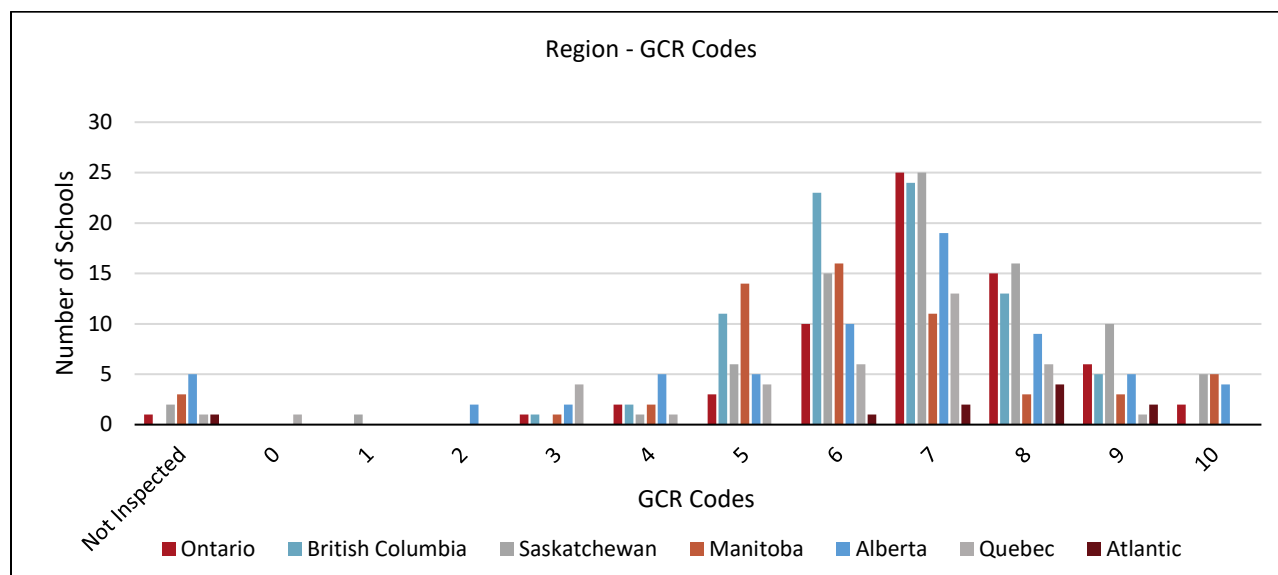


Figure 3.10 GCR for Schools Per Zone

Most school assets also included a rating of how well Operations & Maintenance activities were performed. Of all 395 schools, 8 were not inspected, 29 received an O&M rating of Poor, 214 received an O&M rating of Fair, and 111 received an O&M rating of Good. Additionally, 31 schools did not have any O&M rating or code reported. Three schools are classified as non-operational despite reported student enrollment, likely due to inspection cycle timing at the time of data generation. In all Zones, the most common rating for O&M was Fair. This data is depicted in Figure 3.6 below.

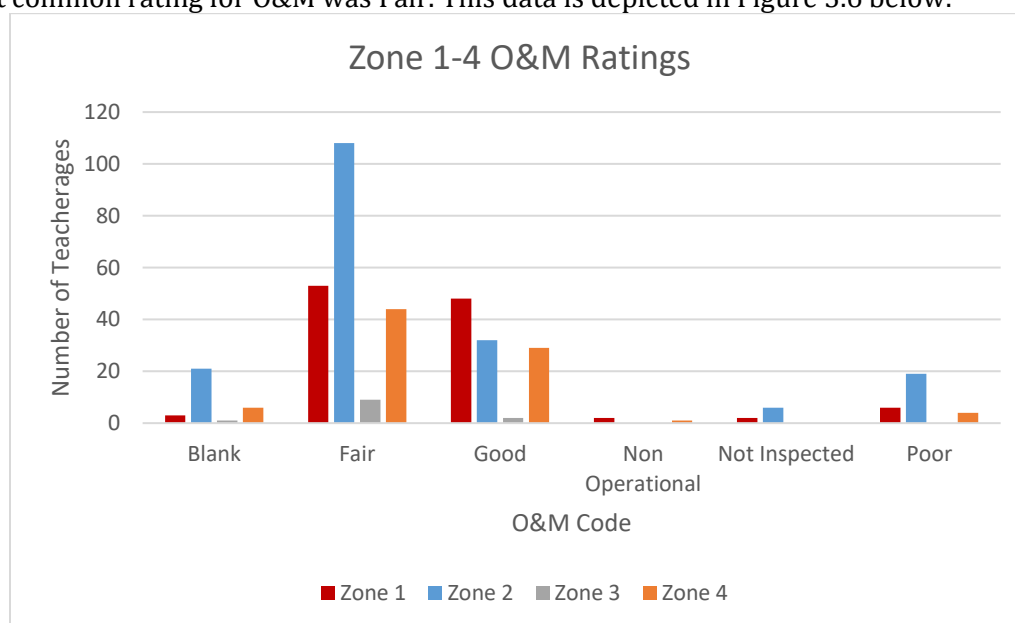


Figure 3.11 O&M Ratings for Schools Per Zone

The distribution of O&M ratings for schools across regions is shown below. Most schools across all regions were rated fair or good.

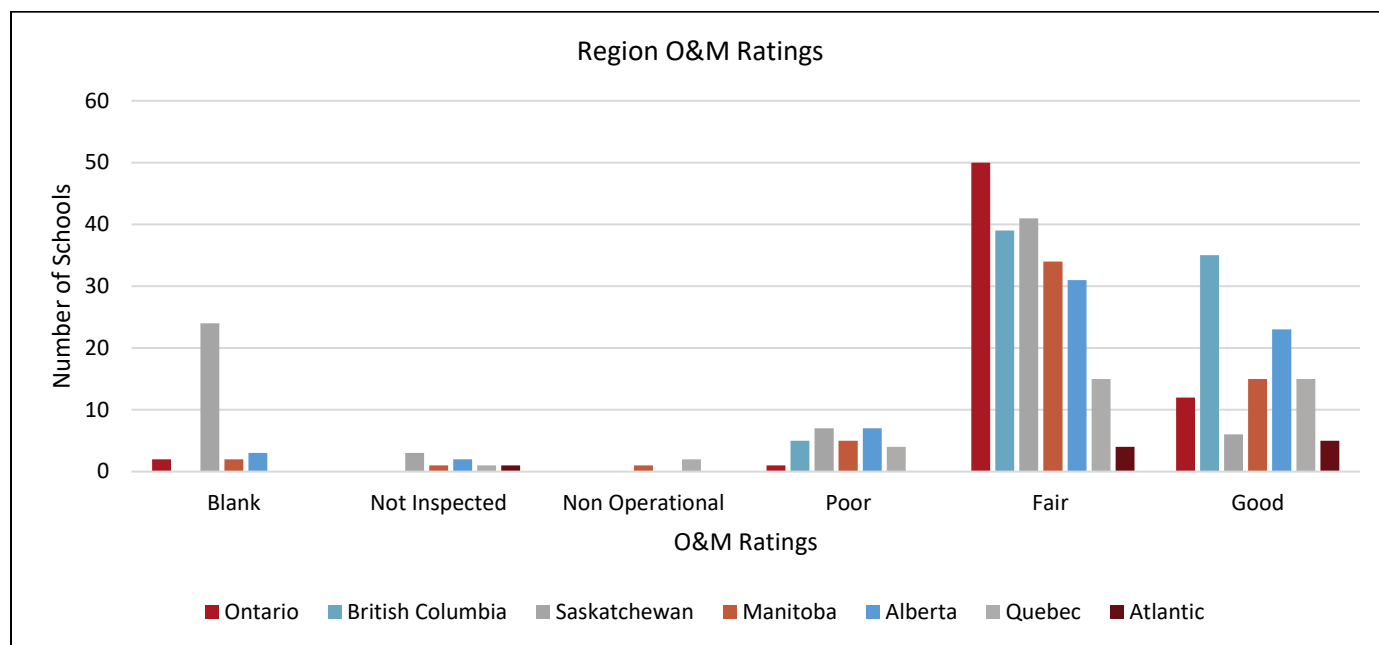


Figure 3.12 O&M Ratings for Schools Per Zone

3.2 Teacherages

Based on a review of asset and nominal roll data supplied by ISC, there are 1227 First Nations teacherages on 150 reserves throughout Canada, which together accommodate teachers for a combined student body of 46,667 students. These teacherages can also be categorized according to the four zones, which indicate the remoteness of the community in relation to the distance from the nearest service center. Of the teacherage assets in the database prepared by ISC, there are 3 Zone 1 communities that have teacherages, 67 Zone 2 communities that have teacherages, 10 Zone 3 communities that have teacherages, and 70 Zone 4 communities that have teacherages. There are 16 teacherages in Zone 1, 551 teacherages in Zone 2, 66 teacherages in Zone 3, and 594 teacherages in Zone 4. This information is presented in Figure 3.13.

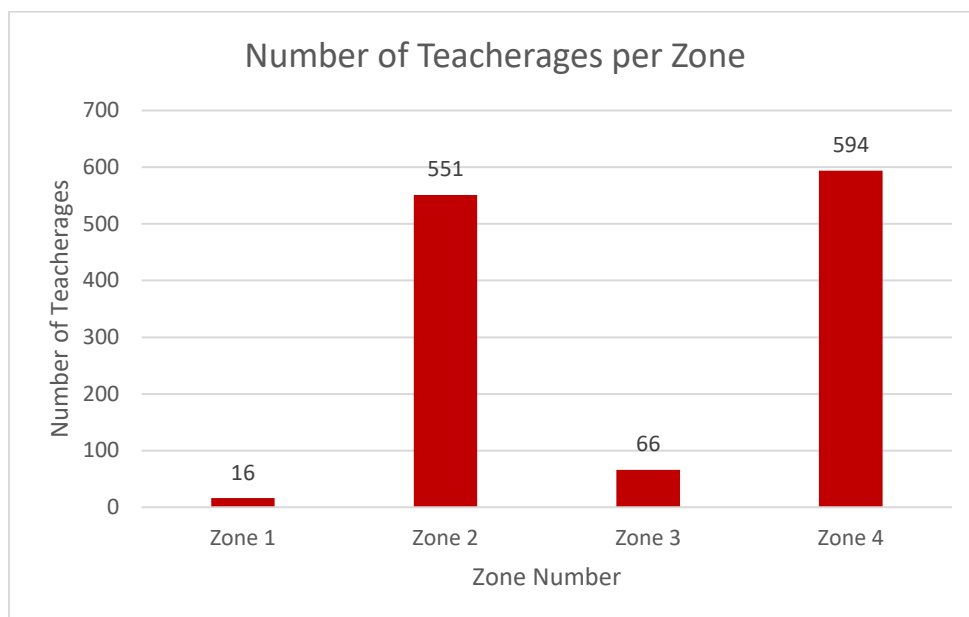


Figure 3.13 Number of Teacherages per Zone

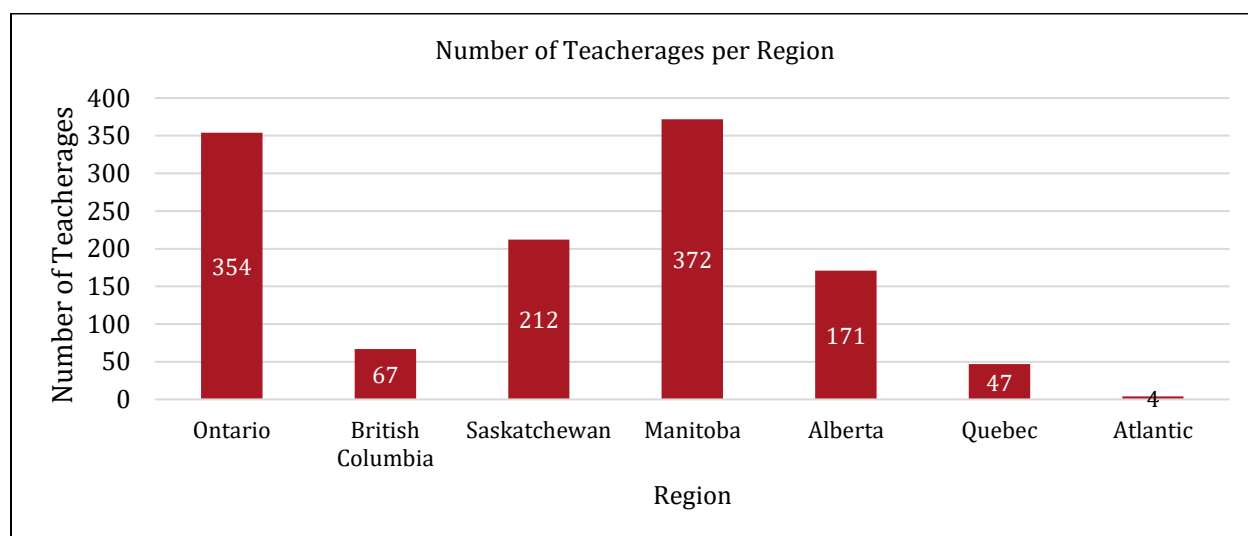


Figure 3.14 Number of Teacherages per Region

The above graph illustrates the number of teacherages across various regions. Manitoba has the greatest number of teacherages while Atlantic has the smallest number of teacherages.

The average number of students in a community per teacherage is 38. This average varies from zone to zone, as follows:

- Zone 1 has an average of 14 students per teacherage
- Zone 2 has an average of 43 students per teacherage
- Zone 3 has an average of 31 students per teacherage
- Zone 4 has an average of 35 students per teacherage

As can be observed from the statistics above, Zone 1 has the lowest average number of students per teacherage, while Zone 2 has the greatest average number of students per teacherage. This information is also summarized in Figure 3.17 below.

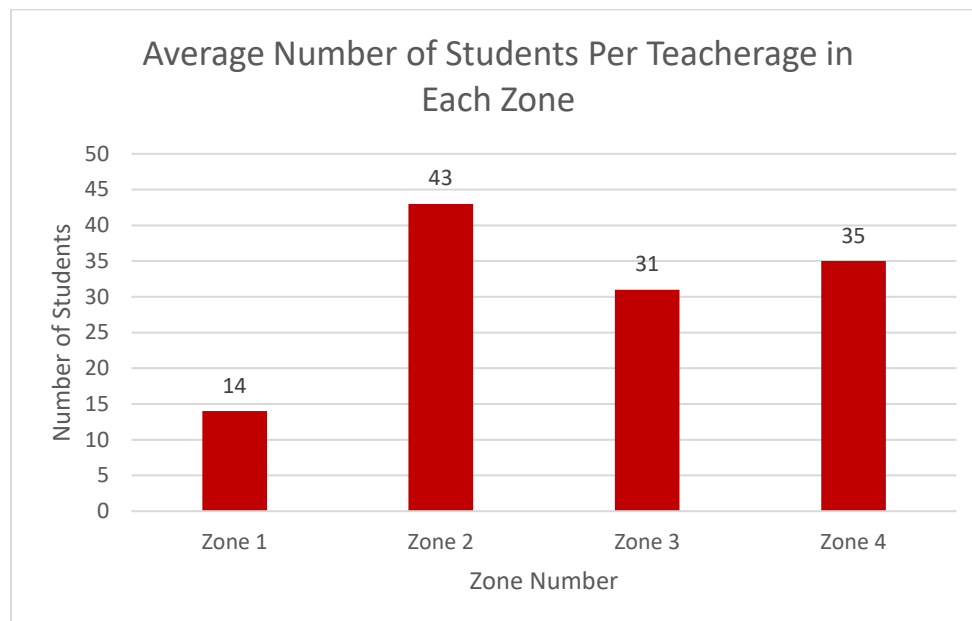


Figure 3.15: Average Number of Students per Teacherage in Each Zone

The average year of construction of First Nations teacherages was found to be 1993. The average year of construction in Zone 1 for First Nations teacherages is 1998, Zone 2 is 2002, Zone 3 is 1970, and Zone 4 is 1987. On average, the teacherages that are in Zone 3 have the lowest construction year, and the teacherages that are in Zone 2 have the highest construction year. This information is depicted in Figure 3.18 below.

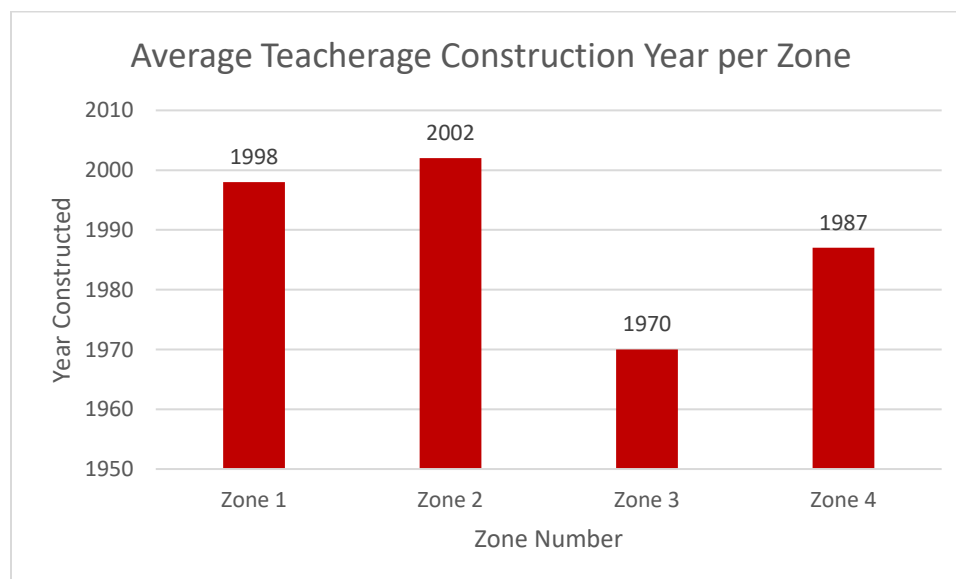


Figure 3.16: Average Teacherage Construction Year per Zone



When interpreting the chart, the lower lines represent the range of construction year in the oldest 25% of teacherages, the blue bar represents the distribution of the 25% of teacherages below the median age, the red bar represents the distribution of the 25% of teacherages above the median age, and the upper line represents the distribution of age in the newest 25% of teacherages. The line where the blue and red bars meet is the median year of construction.

The table below represents the distribution of the construction year by zone and by quartile. For example, in zone 1, the oldest 25% of teacherages were constructed between 1975 and 1993. The 25% teacherages below the median were built between 1993 and 1999. 1999 is the year of median construction. 25% of teacherages above the median construction year were built between 1999 and 2004. The newest 25% of the teacherages were built between 2004 and 2019.

Table 3.1: Distribution of Construction Year of Teacherages by Zone by Quartile

Metrics	Zone 1	Zone 2	Zone 3	Zone 4
<i>Min</i>	1975	1965	1969	1947
<i>Q1(25%)</i>	1993	1991	1994	1992
<i>Median</i>	1999	2000	2000	1999
<i>Q3(75%)</i>	2004	2015	2008	2011
<i>Max</i>	2019	2025	2023	2024

Table 3.2 below depicts the distribution of teacherage construction years by region and by quartile. For example, in Ontario the oldest 25% of teacherages falls between 1963 and 1991. The 25% of teacherages below the median construction year falls between 1991 and 1998. 1998 is the median year of construction. 25% of teacherages above the median construction year, were constructed between 1998 and 2011. The newest 25 % of teacherages were built between 2011 and 2025.

Table 3.2: Distribution of Construction Year of Teacherages by Region by Quartile

Metrics	Ontario	British Columbia	Saskatchewan	Manitoba	Alberta	Quebec	Atlantic
<i>Min</i>	1963	1973	1947	1970	1975	1965	2003
<i>Q1(25%)</i>	1991	1983	1991	1995	1995	1991	2003
<i>Median</i>	1998	1988	1997	2002	2001	2000	2003
<i>Q3(75%)</i>	2011	1997	2005	2019	2014	2016	2003
<i>Max</i>	2025	2018	2020	2025	2025	2023	2003

According to the latest ACRS inspection data, the overall average estimated remaining life of all teacherages is 19.3 years. In Zone 1, the average estimated life remaining is 16.9 years, in Zone 2 it is 19.8 years, Zone 3 it is 21 years, and in Zone 4 it is 18.8 years. The teacherage buildings in Zone 1 have the lowest average estimated life remaining, while the teacherages in Zone 3 have the highest average estimated life remaining. This information is depicted in Figure 3.21 below.

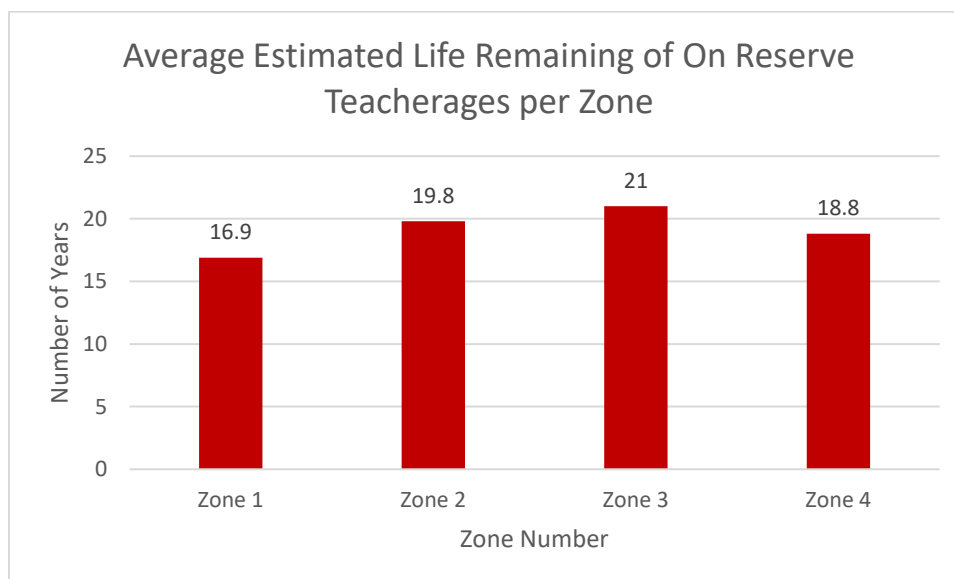


Figure 3.17: Average Estimated Life Remaining of On Reserve Teacherages per Zone

When interpreting the chart, the lower lines represent the range of estimated life remaining in the 25% of teacherages with the least remaining life, the blue bar represents the range in the 25% of teacherages below the median remaining life, the red bar represents the range in the 25% of teacherages above the median remaining life, and the upper line represents the range in the 25% of teacherages with the longest remaining life. The line where the blue and red bars meet is the median remaining life.

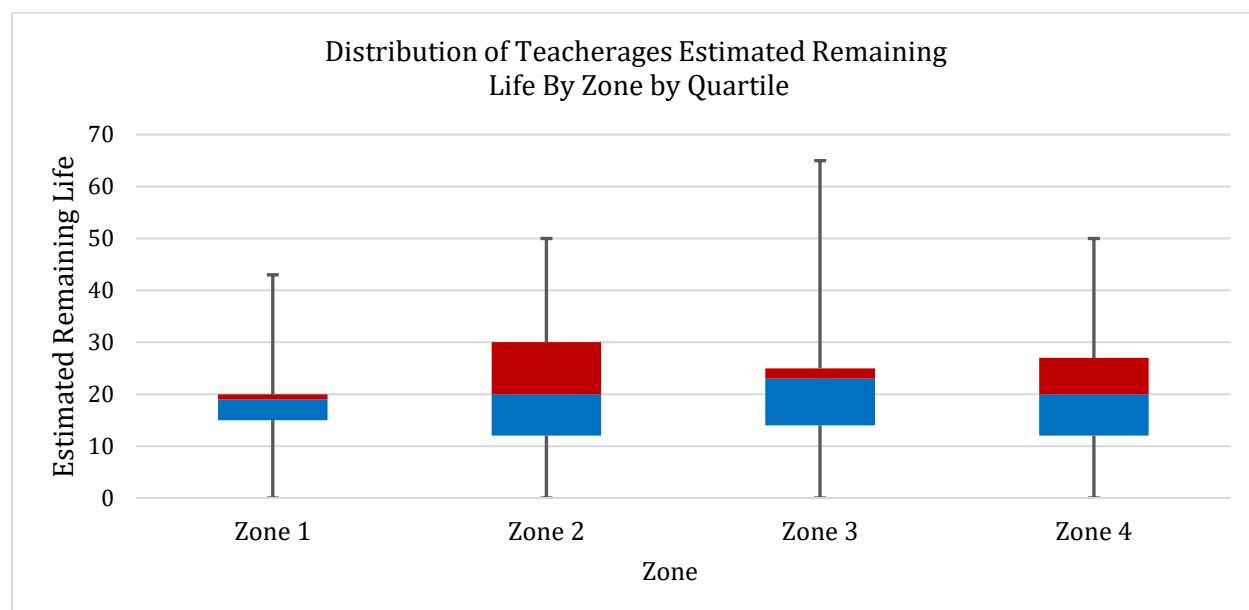


Figure 3.18 Distribution of Estimated Remaining Life of Teacherages by Zone by Quartile

The chart below illustrates the distribution of the estimated remaining life of the teacherages across various regions. For example, in Ontario, the oldest 25% of schools have about 3 to 15 years of



remaining life, which is represented by the lower whisker line. The 25% of teacherages below the median have between 15 and 20 years of remaining life, which is denoted by the blue bar. The median remaining life is 20 years. The 25% of teacherages above the median have about 20-27 years of useful life remaining. And the newest 25% of teacherages have about 27 to 50 years of estimated remaining life, which is denoted by the upper whisker line.

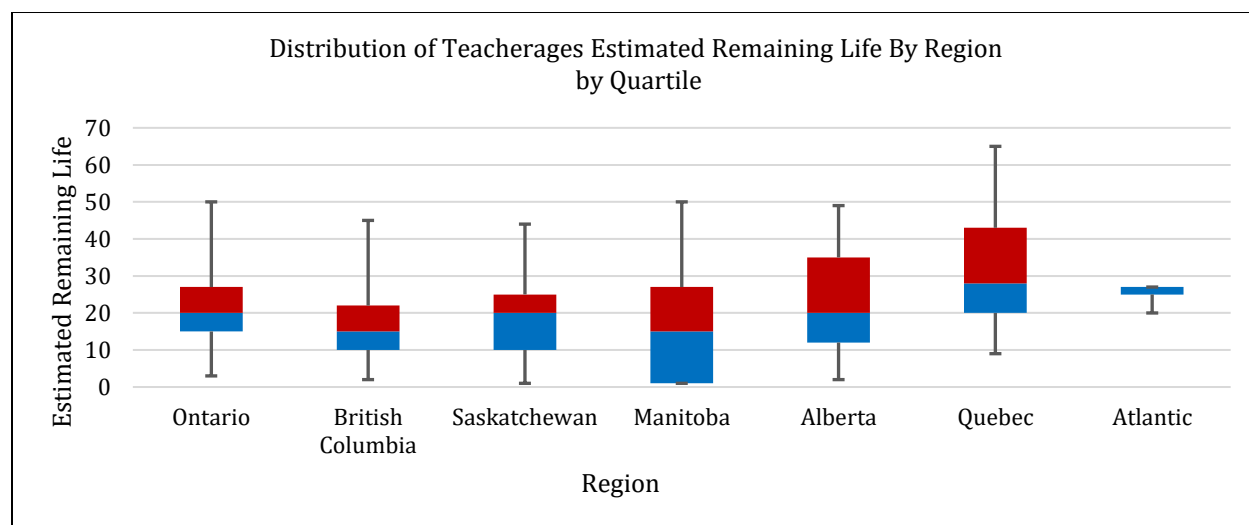


Figure 3.19 Distribution of Estimated Remaining Life of Teacherages by Region by Quartile

Based on the data supplied by ISC, the overall average GCR (General Condition Rating) for on reserve teacherages in all zones was determined to be 6.62 (which correlates to a “Fair” rating). Each of the four zones also had an average GCR rating of “Fair”, as follows:

- Zone 1 teacherages had an average GCR of 6.50
- Zone 2 teacherages had an average GCR of 6.76
- Zone 3 teacherages had an average GCR of 6.82
- Zone 4 teacherages had an average GCR of 6.49

The mode of both Zone 1 and Zone 2 GCR ratings is 6. The mode for Zone 3 and Zone 4 GCR ratings is 7. This information is depicted in Figure 3.24 below.

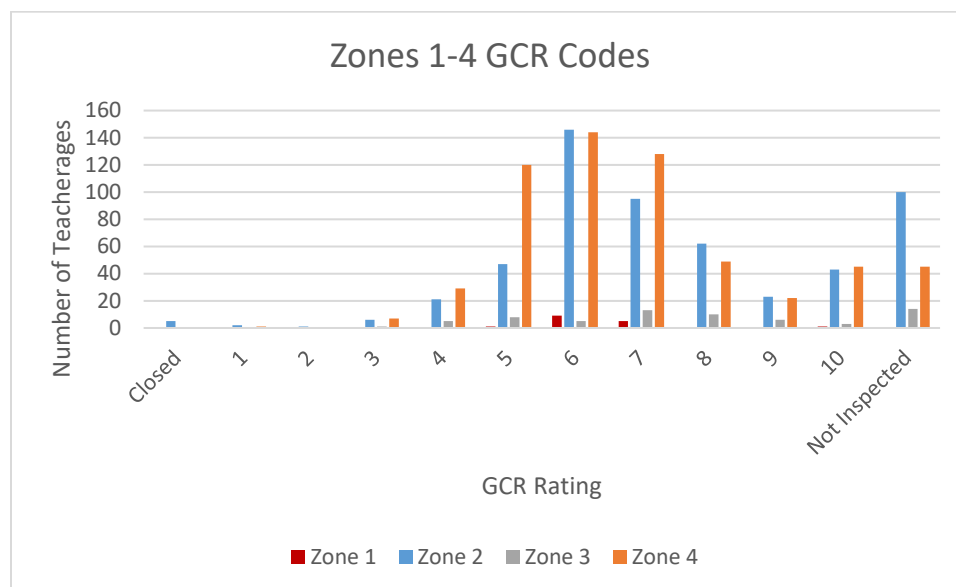


Figure 3.20: General Condition Rating for Teacherages per Zone

The chart below shows the distribution of the GCR ratings for teacherages across different regions.

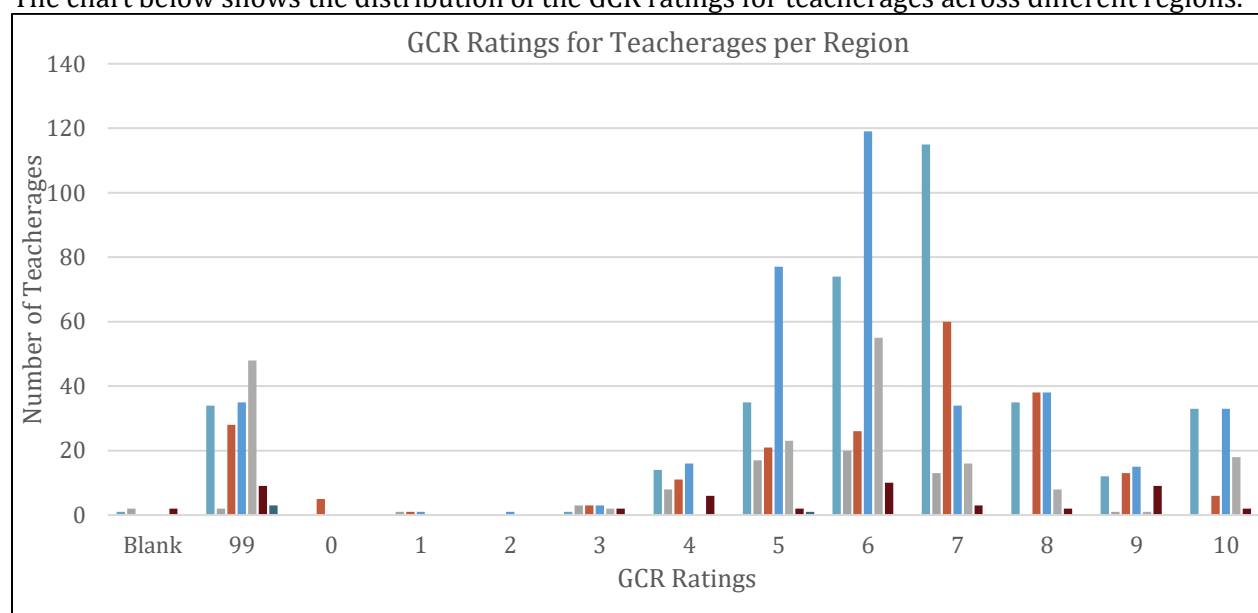


Figure 3.21 General Condition Rating for Teacherages per Region

Most teacherage assets also included a rating of how well Operations & Maintenance activities were performed. Of all 1222 teacherages, 107 were not inspected, 95 were indicated as being non-operational, 116 received an O&M rating of Poor, 644 received an O&M rating of Fair, and 126 received an O&M rating of Good. Additionally, 139 teacherages did not have any O&M rating or code reported. In all Zones, the most common rating for O&M was found to be Fair. This information is depicted in Figure 3.26.

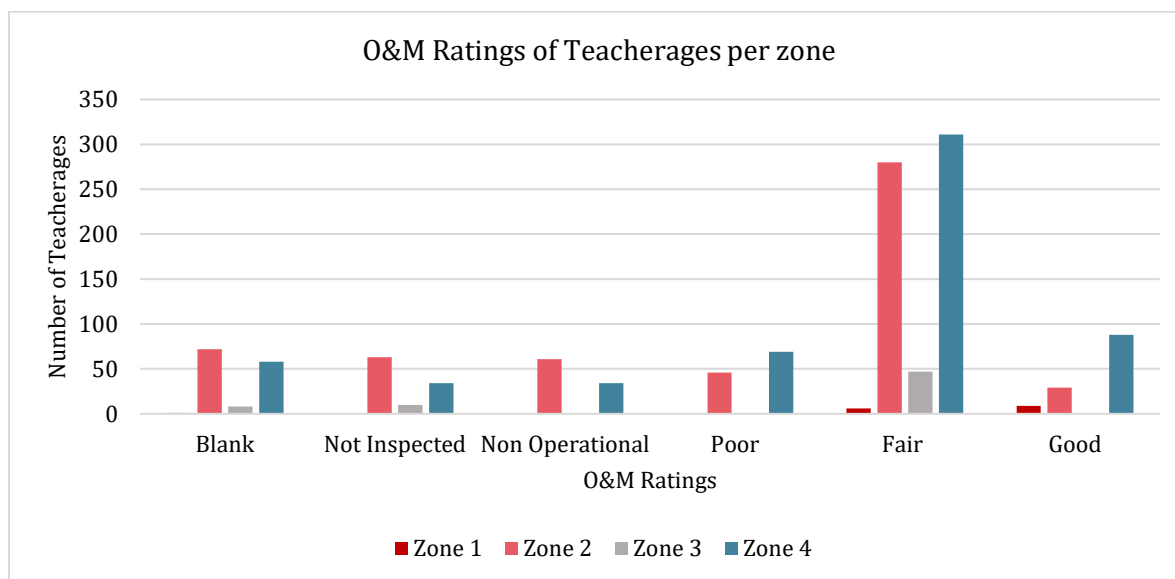


Figure 3.22: Operation & Maintenance (O&M) Rating for Teacherages per Zone

The chart below depicts the distribution of O&M ratings for teacherages across various regions.

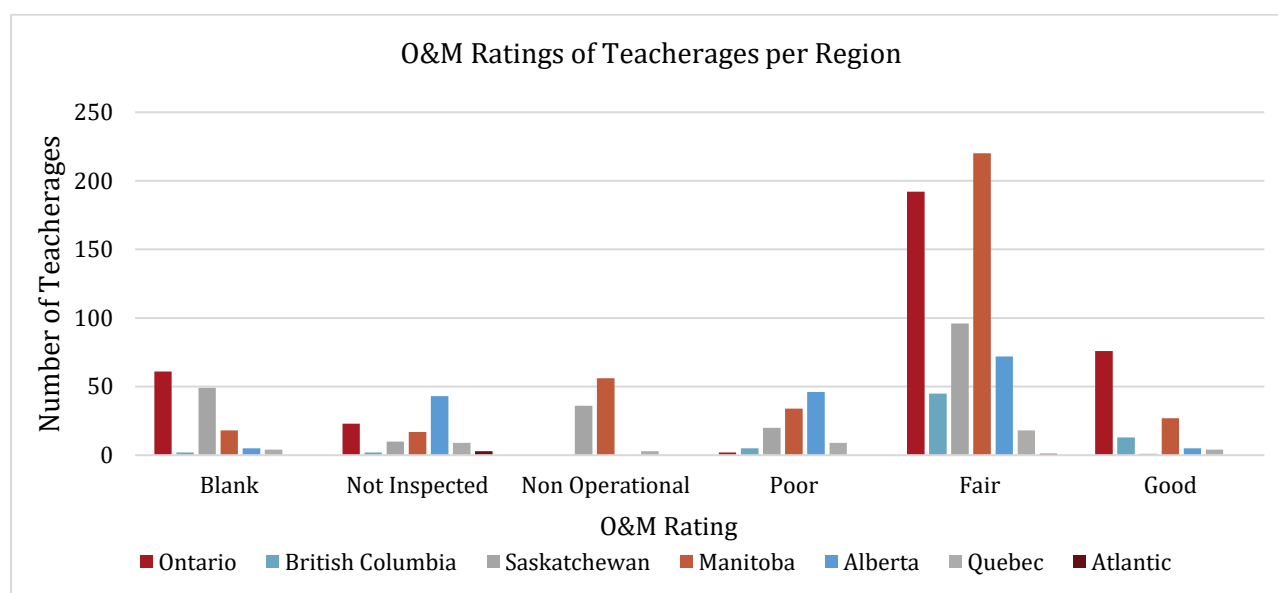


Figure 3.23 Operation & Maintenance (O&M) Rating for Teacherages per Region

4.0 Methodology

This report is intended to be an update to the Capital and O&M needs for education infrastructure which were established in the 2021 AFN Education Infrastructure Capital Needs study, and 2022 AFN Education Infrastructure O&M Assessment study, both completed with FNESL.

As such, it builds on the methodologies used in those studies. Unit costs used in the capital cost and O&M cost estimates have been adjusted from the previous studies to account for construction cost escalation seen between 2021 and 2025. Statistics Canada Building Construction Cost Indexes [11] were referenced in creating a reasonable escalation factor from 2021 to 2025. For school construction, a factor of 6% was determined to be reasonable, while for teacherages, 7% was used. This was due to the higher inflation seen in residential construction during the COVID-19 pandemic.

Section 4.1 outlines the methodology for estimating the capital costs associated with education infrastructure (including schools and teacherages). Section 4.2 outlines the methodology for estimating the O&M costs for the same infrastructure.

4.1 Capital cost estimation

Section 4.1 and its subsections describe the methodology used to calculate the floor area requirements and capital costs for schools and teacherages for the capital needs assessment. Section 4.1.1 through 4.1.6 outline the methodology for analysis of schools, including a description of how eligible floor area is calculated per the School Space Accommodation Standards. Section 4.1.7 discusses the methodology used for the teacherages analysis, including a summary of relevant principles from the ISC Level of Service Standards and Management of Teacherages on Reserve.

4.1.1 The school space needs calculated using the SSAS calculator outlined in sections 4.1.1 through 4.1.3 are also used as the basis for estimating O&M costs in section 4.2.

School Floor Area Requirements & Costs

The enrolment projections were used to set the space requirements for each First Nation based on existing and projected enrolments and federal guidelines for school floor area requirements as set out in the 2023 SSAS, over the immediate, 1 to 5, 6 to 10, 11 to 15, and 16 to 20 year phases, including space allowances for special needs students.

Space requirements were developed over the various phases on a per school basis with the assumption that all existing schools (subject to addition or replacement) will continue to serve the population over the period and maintain existing grades (i.e. the school or its replacement will remain in operation over the planning period, and no changes will be made to the grades offered). The space requirements were determined for each phase based on projected enrolment and reference to the appropriate Gross Floor Allowance Table within the 2023 SSAS.

Space requirements which were beyond the existing building area were determined to require an addition to the existing school or replacement of the existing structure. Determination of facilities requiring an addition to or replacement of the existing structure has been based on the age, condition, and remaining life of the existing structure.



SSAS Eligible Space Calculations

To calculate the amount of space that a school is eligible for, the 2023 School Space Accommodation Standards were used. Since the 2021 version, technical improvements to the SSAS were made which will increase First Nations school sizes. The base floor allowances have been increased to be comparable to the average of provincial standards used across the country. Additionally, the SSAS

4.1.1. has added new and guaranteed spaces for students including language and culture rooms, knowledge keeper offices, itinerant/counselling spaces, and outdoor classrooms.

The SSAS calculates the eligible Total Gross Floor Allowance (GFA) for a school, taking into account the number of students (both total and special needs) in the kindergarten, primary, intermediate, junior secondary, and senior secondary grade brackets. The Total GFA allowance (i.e. the total eligible school size) includes six components, three of which were original to the 2021 SSAS and three of which are Unique GFA spaces that were added in 2021 [12], and enhanced in 2023:

- Instructional space allowance – This is the basic gross floor area allowance (Basic GFA) that is required for classrooms for the grade levels that will be taught in the proposed school (including kindergarten students) and core administrative spaces to serve the number of students and classes offered.
- Gymnasium space allowance (Gym GFA)
- Cafeteria space allowance (Cafeteria GFA)
- Language and Culture space allowance – (Unique GFA)
- Knowledge Keeper's Office: Traditional Services space allowance (Unique GFA)
- Counselling / First Aid / Itinerant space allowance (Unique GFA)

The 2023 SSAS also includes provisions for a dedicated Outdoor Learning Space GFA. This allocation is calculated as 0.5 m² per student, with a minimum allocation of 20 m².

The Total GFA sets a maximum floor space allowance for the entire school building. This means that the Basic GFA not only includes classroom space but also encompasses circulation areas and various special purpose rooms such as administration areas, library, auditorium, and computer labs. The number, type, and size of special purpose rooms vary with the type of school and the number of students [11]. The Unique GFAs are calculated over and above the Basic GFA, gymnasium GFA, and cafeteria GFA.

The amount of space a school is eligible for is determined by the type of school, the grades and divisions that are offered, and the eligibility for additional gymnasium space. The SSAS includes GFA Tables that present values for the Basic GFA, Cafeteria GFA, Gymnasium GFA, Language and Culture GFA, Knowledge Keepers Space GFA, Counselling/Itinerant/First Aid GFA, Total GFA, and Outdoor Learning Space GFA, based on the criteria outlined previously. The tables are separated based on the grades and divisions that are offered at a school and whether or not the school is eligible for additional gymnasium space. Once the appropriate table is selected, the enrolment data is used to provide an initial Total GFA and Outdoor Learning Space GFA for a school.

4.1.1. Learning Space GFA, based on the criteria outlined previously. The tables are separated based on the grades and divisions that are offered at a school and whether or not the school is eligible for additional gymnasium space. Once the appropriate table is selected, the enrolment data is used to provide an initial Total GFA and Outdoor Learning Space GFA for a school.

SSAS Calculator

Using the SSAS guidelines to determine the space a school is eligible for can be a lengthy process when analyzing several schools. ISC has created an SSAS calculator that can be used to expedite the process. For this study, the SSAS calculator was recreated and reformatted so that it was current with



2023 standards, and so that it could be used for several schools' enrolment data at one time. By doing this, the eligible school size could be determined for all 395 schools in an efficient manner, and a final capital cost could be computed from this information. The results from the SSAS floor area requirement analysis are used in this report and are illustrated in Section 5.1. The ISC SSAS Calculator for the 2023 standards has been consulted to confirm the eligible floor space calculations used in this assessment and perform QA/QC reviews on our methodology.

Cost Estimate Generation

4.1.4 The SSAS floor area requirement was calculated for each school to determine the eligible school size based on enrolment projections for all planning phases. Once the eligible school size was determined for each school, the costing analysis was completed based on a unit cost for each remoteness zone. Unit costs were determined based on a review of actual tender and construction costs for a range of school facilities constructed between 2014 and 2019. These values were then updated to 2025 using Statistics Canada Building Construction Cost Indexes for School/Institutional divisions [11]. The updated Zone 1 values were compared with a 2025 tender cost for a school in Six Nations of the Grand River. Given the size of the school and its proximity to urban centres such as Hamilton, Brantford, Kitchener-Waterloo, and Cambridge, it can be expected to have more competition and a lower tender price. While on the lower end of the scale it is within the 20% variance of a Class D cost estimate. These values are expected to increase in the future; therefore, an annual inflation value has been used in this study. The following table outlines the costs associated with each zone used to calculate the capital costs for all schools:

Table 4.1: Unit Construction Costs per Zone (Schools) Updated for 2025

Zone Number	Class D Unit Costs Adjusted to 2025
Zone 1	\$5,762/m ²
Zone 2	\$6,914/m ²
Zone 3	\$9,219/m ²
Zone 4	\$11,524/m ²

Development of the Class D cost estimates has required use of the following assumptions:

- Cost for planning and design has been estimated at 15% of building construction costs.
- Construction costs using unit costs above include siteworks.
- Specific information on the condition of communal wastewater treatment systems and ability of the systems to meet additional school requirements have not been determined. Costs for improvement of communal wastewater treatment systems to meet federal regulations and capacity requirements have not been included.
- Specific information on the condition of communal water treatment systems and ability of the systems to meet additional school requirements, including fire flows, have not been determined. Costs for improvement of communal water treatment systems to meet provincial regulations and capacity requirements have not been included.
- Specific information on the condition of electrical supply systems and ability of the systems to meet additional school requirements has not been determined. Costs for improvement of existing electrical systems to meet capacity requirements have not been included.
- Specific information on the condition of solid waste management systems and the ability of



the systems to meet school requirements have not been determined. Costs for improvement of existing solid waste systems to meet capacity requirements have not been included.

- The availability and cost of connection to broadband internet services, required in current teaching environment, has not been determined.
- The availability and cost of incorporating alternative, lower cost energy sources (i.e. natural gas), have not been determined.
- Specific information on the land area occupied by the school and ability for expansion was not determined. Land area occupied by existing schools have been assumed to meet or have a suitable expansion area to meet existing and future requirements, as determined by the School Space Accommodation Standards.

Calibration of School Construction Unit Costs

4.1.5 AFN has obtained recent school construction cost data from ISC for various schools across the country. Data for thirteen schools has been reviewed, which were constructed between 2014 and 2019. These are summarized in Table 4.2 below.

The unit costs were updated to 2025 using Statistics Canada Building Construction Cost Index data. A fourteenth school, tendered in 2025, was added to compare against the other zone 1 schools adjusted to 2025, and indicates that the adjusted unit costs are reasonable.

Table 4.2: Historical Tender Unit Costs for Schools [12]

Zone	Area of Construction (m ²)	Unit Cost (\$/m ²)	Unit Cost (2025 Dollars)	Date of Construction
Zone 2	0 - 1,000	\$5,748.38	\$8,619.27	2016
Zone 2	0 - 1,000	\$7,801.80	\$11,698.23	2016
Zone 1	1,000 - 2,500	\$3,070.09	\$4,151.98	2019
Zone 2	1,000 - 2,500	\$5,423.24	\$7,856.76	2017
Zone 1	1,000 - 2,500	\$4,814.41	\$6,510.99	2019
Zone 4	1,000 - 2,500	\$6,961.32	\$11,181.43	2014
Zone 4	1,000 - 2,500	\$5,585.53	\$8,971.61	2014
Zone 2	1,000 - 2,500	\$5,326.28	\$6,959.66	2020
Zone 2	2,500 - 5,000	\$4,840.56	\$6,546.36	2019
Zone 1	2,500 - 5,000	\$4,129.60	\$5,584.86	2019
Zone 1	5,000 - 7,500	\$4,056.83	\$5,486.44	2019
Zone 2	5,000 - 7,500	\$3,413.66	\$4,616.62	2019
Zone 4	7,500 -10,000	\$4,338.45	\$6,505.19	2016
Zone 1	2,500 - 5,000	\$4,853.61	\$4,853.61	2025

The costs above are based on the reported tender price, and do not include costs associated with feasibility or design, project management, contract administration / inspection, or post-construction reporting.

Adjusting the unit costs to 2025 dollars (assuming a cost inflation of 6% per year between 2021 and 2025 due to the impact of the COVID-19 pandemic), the unit costs can be calculated as averages per zone, as shown in Table 4.3 below.



Table 4.3: ISC Tender Data Unit Costs per Zones

Zone	Average Unit Cost per Zone (2025 dollars)	Variance from Class D costs (Table 4.1)
1	\$5,584.86	-3.17%
2	\$6,959.66	0.65%
3	\$8,186.40*	-12.61%
4	\$8,971.61	-15.75%

*Interpolated from trendline of other zones, as no zone 3 data was available.

Note that for this analysis, the largest zone 4 school has been excluded, as the influence of economies of scale is expected to account for the reduction in unit costs observed in a school larger than 7,500 m². Similarly, smaller schools are seen to have higher unit costs.

Overall, the variance observed, ranging from -16% to +1%, is well within the expected Class D cost estimate variance of $\pm 20\%$. It should also be considered that the reference schools did not include the additional facilities included in the newer accommodation standards, and so are relatively low compared with the unit costs considered in estimates. Other factors to consider include that the tender cost sample size is relatively small, construction costs may well be inflating at a rate of higher than 2% annually, and additional risks continue to affect construction costs such as climate change and shortening winter road seasons. For these reasons, the tender cost data above serves to reinforce and validate the Class D cost estimates included in this study.

4.1.6 Outdoor Learning Space Costing

The 2021 School Space Accommodation Standards incorporates a dedicated Outdoor Learning Space (OLS) GFA for each school. This Education Infrastructure Capital Needs Assessment has incorporated a cost estimate for outdoor spaces. According to the 2021 SSAS, all schools are eligible for a minimum of 20 m² for Outdoor Learning Spaces. However, this space can be significantly greater, as 0.5 m² of outdoor space is allocated per student. Outdoor learning space allocation cannot be re-allocated to interior spaces, and may include a variety of uses, such as a paved area, outdoor seating, a canopy covering, and a garden area.

There are endless ways to use OLS allocations. The previous capital needs assessment assigned a separate cost based on a number of assumptions. This study has assumed that outdoor learning space is included in the school cost, given the outdoor features such as a garage, a gazebo, garden spaces, and other outdoor learning spaces are low relative to the site works and building construction.

Teacherages Floor Area Requirements & Costs

A similar analysis was conducted for teacherages on reserve. The ISC Level of Service Standards and Management of Teacherages on Reserve was used in completing this analysis. The total area of teacherages was determined by the number of teachers based on a ratio of 1 teacher to 17 students. The area for teacherages, as included in the Level of Service Standards and Management of Teacherages on Reserve document (replicated as Table 4.5 below), was used to determine the corresponding eligible area for the calculated number of teachers.



Table 4.4: Maximum Gross Area of Teacherage

Number of teachers	Maximum gross area
1	115 m ²
2	215 m ²
3	315 m ²
4-5	430 m ²
6-7	545 m ²
8-9	660 m ²

For instance, where there are more than nine teachers in a school, the maximum gross area per the ISC standards is 660 m² plus the area required for the added number of teachers over nine.

These guidelines were used to calculate the amount of teacherage space required for 150 First Nations, based on their enrolments and existing teacherages. Data was provided for each of the First Nations, including the zone number, the nominal roll, the last approved inspection date for each teacherage, the year each teacherage was constructed, the estimated life remaining, the existing building areas, the General Condition Rating (GCR) of the existing buildings, and the Operations and Maintenance (O&M) rating. This information was used to determine the eligible teacherage area for each community.

First, the nominal roll for each First Nation with teacherages was updated to a 2025 baseline, and then projected for the years 5, 10, 15, and 20 using a projected enrolment growth rate of 1.75% per year. Based on these enrolment projections, the number of teachers required to instruct the students was determined using the 1:17 teacher/student ratio. The maximum gross area of teacherages for each school could be determined by using the values from Table 4.5 for each year of projected enrolment.

After the maximum teacherage area that each First Nation is eligible for was calculated, it was determined whether the community had sufficient space to accommodate the teachers. For example, if an existing school currently has 1,000 m² of teacherage space, and they are eligible for 1,100 m² of teacherage space in year 0, they would be eligible for an addition of 100 m², in year 0. This was checked for each year, 0, 5, 10, 15, and 20, based on the projected enrolment and the corresponding number of teachers required.

4.1.8

For each planning period, it was also determined whether existing teacherages were eligible for replacement based on the building age and/or the ACRS report of the years of life remaining.

Cost Estimate Generation

After assessing each First Nation with teacherages and determining how much teacherage space it is eligible for based on enrolment, teacherage construction date, and facility estimated life remaining, the corresponding cost estimates for each phase were calculated. The cost incorporates the eligible space for additions and new teacherages, as well as the costs for existing teacherages requiring replacement.

Construction costs are based on estimates from other projects in each zone. The construction costs used in this analysis are presented in the following table:



Table 4.5: Unit Construction Costs Per Zone (Teacherages) Adjusted to 2025 Dollars

Zone Number	Class D Unit Costs (Adjusted to 2025)
Zone 1	\$4,152/m ²
Zone 2	\$4,982/m ²
Zone 3	\$6,643/m ²
Zone 4	\$8,303/m ²

Unit costs were determined based on a review of actual tender and construction costs for a range of facilities similar in size and scope to a typical teacherage building. As the unit rates were initially developed in 2020, the values have since been adjusted to account for the inflation experienced from 2020 to 2025, largely due to the impacts of COVID-19. Based on the StatsCan Construction Price Index, the prices for residential buildings increased an average of 7% from the first quarter of 2021 to the first quarter of 2025 is used to adapt the unit costs from the previous study.

The residential construction rates are expected to continue increasing with inflation over the twenty-year planning period of this assessment, so the rates are adjusted accordingly for the years 1 to 5, 6 to 10, 11 to 15, and 16 to 20. Moving forward from present day costs, the inflation rate used for this costing analysis is 2% per year, as it is not expected that the significant increase in residential construction costs experienced in 2020-2023 will occur within the planning period.

Development of the Class D cost estimates has required use of the following assumptions:

- Cost for planning and design has been estimated at 15% of building construction costs.
- Construction costs using unit costs above include siteworks.
- Specific information on the condition of communal wastewater treatment systems and ability of the systems to meet additional teacherage requirements have not been determined. Costs for improvement of communal wastewater treatment systems to meet federal regulations and capacity requirements have not been included.
- Specific information on the condition of communal water treatment systems and ability of the systems to meet additional teacherage requirements, including fire flows, have not been determined. Costs for improvement of communal water treatment systems to meet provincial regulations and capacity requirements have not been included.
- Specific information on the condition of electrical supply systems and ability of the systems to meet additional teacherage requirements, have not been determined. Costs for improvement of existing electrical systems to meet capacity requirements have not been included.
- Specific information on the condition of solid waste management systems and the ability of the systems to meet teacherage requirements have not been determined. Costs for improvement of existing solid waste systems to meet capacity requirements have not been included.
- The availability and cost of connection to broadband internet services has not been determined.
- The availability and cost of incorporating alternative, lower cost energy sources (i.e. natural gas), have not been determined.



- Specific information on the land area occupied by the teacherages and available land for new teacherage construction was not determined. Land area occupied by existing teacherages have been assumed to meet or have a suitable expansion area to meet existing and future requirements, as determined by the ISC Level of Service Standards for Teacherages.

4.2 O&M cost estimation

FNESL developed and refined a costing model to produce appropriate O&M cost estimates for each educational facility for the purposes of this needs assessment. The model is based on a per-item cost which considers the following O&M components:

1. Maintenance & Repair (M&R)
2. Preventative Maintenance (PR)
3. General Facility Maintenance (GM)
4. Heating
5. Electricity
6. Insurance

Each of these is described in further detail through Subsection 4.2.2.

O&M Costing model leverages RSMeans Data

4.2.1

For this update report, FNESL leverages a cost estimate model developed during the completion of previous studies. This section provides a summary of the model development using RSMeans Data. The unit cost variables used in the model were updated for this study using Statistics Canada Building Construction Price Index [11] data between Q1 2016 and Q1 2025.

To create our O&M estimation model, FNESL developed a costing approach for past Education Infrastructure O&M Needs Assessments that leveraged as-built drawings for existing schools. By analyzing several schools ranging in various sizes and locations, a model was developed which estimates the six items listed above. Detailed component take-offs were produced based on the as-built drawings and analyzed against RSMeans data to develop realistic O&M estimates for Maintenance and Repair (M&R) and Preventative Maintenance (PM).

To develop the O&M cost estimation model, the strategy of zero-based budgeting was applied, and the Gordian 2021 Facilities Maintenance & Repair Costs with RSMeans data book was used as a reference. RSMeans data is the industry-standard materials, labor, and equipment cost information database. RSMeans engineers invest over 22,000 hours in cost research annually to quantify building products and methodologies, adjust productivity rates, and adjust costs to market conditions. The result is a current and comprehensive cost database. The Facilities Maintenance & Repair Costs data set was designed as a reference for facility managers, owners, engineers, and contractors. The data set provides a framework and definitive data for developing a complete facilities maintenance program.

Our methodology for producing realistic O&M expense estimates using RSMeans data was previously tested and calibrated through an in-depth analysis of schools in an Ontario political-territorial organization's territory and further refined for an O&M assessment of Northern (Zone 2) Ontario First Nations schools. School as-built drawings were used to identify and quantify building components, and RSMeans was used to determine the required maintenance & repair and preventative maintenance needs for each component.



In FNESL's 2022 AFN National Education Infrastructure O&M Needs Assessment, further detailed analysis was performed on three Remote (Zone 4) schools located in BC, Ontario, and Quebec.

These analyses allowed us to develop and calibrate a robust formula for estimating O&M costs across a variety of school sizes using unit cost inputs.

In this report, we used Statistics Canada Building Construction Cost Indexes to update the unit cost inputs for 2025 and applied our robust methodology to the provided data set used in this study. Zone adjustment factors, discussed below in Section 4.2.3, were applied to the estimates to obtain a final annualized O&M cost estimate.

Cost Estimating Categories

4.2.2 The following subsections explain how each cost estimating category was calculated based on available data. FNESL's School and Teacherage O&M model is set up to calculate each cost category separately, with each formula being based on several data points that were calculated using the methodology outlined in this section, from 4.2.2.1 through 4.2.2.6.

Data points for M&R and PR were created using an itemized takeoff from school as-built drawings and RSMeans data for Maintenance & Repair, and Preventative Maintenance. Data points for General Maintenance, Heat, Electricity, and Insurance were based on actual historical expense data provided by the First Nation schools.

The rationale is that due to geographic and regional variability in the energy sources for heating and community electricity systems, and the assumptions used in our costing model, and that market data hasn't shown significant change in the past 4 to 5 years it was deemed reasonable to maintain the unit costs for those items. In the case of insurance, insufficient data is available to revise the unit cost in a meaningful way.

The model was calibrated to produce estimates for future costs within an acceptable level of variance for a Class 'D' estimate.

4.2.2.1 Maintenance & Repair

The RSMeans data set provides a reference for time and materials requirements for maintenance & repair tasks, and data is included which validates line items in budgets. Section 1: Maintenance & Repair (M&R) of the RSMeans data set was used to develop this portion of the O&M estimate. Tasks included in M&R include common maintenance tasks performed at facilities, including removal and replacement, repair, and refinishing. Section 1 provides cost data and approximate frequencies of occurrence for each maintenance and repair tasks; the section is intended to be used to prepare estimates for deferred maintenance programs. The frequency indicates how often one should expect, and therefore estimate, that a task will have to be performed.

For each system that applied to the school being assessed, the UNIFORMAT II classification system line number was recorded, along with a system description, the frequency at which the operation should be budgeted for, and the unit of measure for that system. The unit rates for both total in-house costs and total costs including overhead and profits were noted. The number of units for that component were determined from a review of available documentation and total costs were calculated as follow:



$$\text{Approx. Annual Cost for System Component} = \left(\frac{1}{\text{frequency(years)}} \right) * \text{Unit Cost} * \text{No. Units}$$

As an example, exterior doors are assumed to be *Solid Core, Painted* fire safety rated exterior doors. From the Ontario school building drawings, 12 such doors are identified. The typical frequency of repainting such doors is four years. The RSMeans database estimates a unit cost of \$ 80.50 for materials and labour to repaint one door. Thus, the approximate annual cost for the finish of the exterior doors is.

$$\text{Approx. Annual Cost for System Component} = \left(\frac{1}{4} \right) * \$80.50 * 12 = \$241.50$$

RSMeans lists four elements to maintain under exterior doors for the Ontario school, including repairing the doors, estimated to be needed every 12 years at a unit cost of \$535.88 and full replacement of the doors every 40 years at a unit cost of \$1472.00 and \$1500.00 for doors without safety glass, and with safety glass windows respectively.

This indicates a total annual cost for maintaining exterior doors of \$1225.98 for total ongoing maintenance of 12 *solid core, painted* exterior doors as calculated below.

$$\begin{aligned} \text{Approx. Annual Cost for System Component} \\ &= \left(\frac{1}{4} \right) * \$80.50 * 12 + \left(\frac{1}{12} \right) * \$535.88 * 12 + \left(\frac{1}{40} \right) * \$1472.00 * 2 + \left(\frac{1}{40} \right) * \$1500.00 * 10 \\ &= \$ 1225.98 \end{aligned}$$

The RSMeans analysis outlined above was used to develop a model used in a previous study which estimated M&R costs for 44 schools in an Ontario-based political-territorial organization. This analysis was used to create a model to estimate M&R costs by school size in square metres and validated against Zone 1, 2 and 4 schools.

Table 4.6 provides an example of the RSMeans calculated M&R versus the modelled M&R, and how when averaged across a number of schools, achieves a high degree of accuracy, and is appropriate for a high-level assessment such as this. This example is from the 2022 AFN Education Infrastructure O&M Needs Assessment.

Table 4.6: Example of M&R Comparison between RSMeans Annual Cost Estimation and Modeled Annual Cost Estimation in Remote Schools

	British Columbia School	Ontario School	Quebec School
RSMeans Estimate:	\$ 790,303.95	\$ 333,130.05	\$ 670,869.70
Average:	\$ 598,101.23		
Modeled Value	\$ 536,250.00	\$ 410,850.00	\$ 825,000.00
Average Modeled	\$ 590,700.00		

4.2.2.2 Preventative Maintenance

The RSMeans data set also includes preventative maintenance checklists with labour-hour standards that can be used to develop and benchmark a preventative maintenance program. Section 2: Preventative Maintenance (PM) of the RSMeans data set was used to develop this portion of the O&M



estimate. This section provides the framework for a complete PM program, including a comprehensive list of equipment for which PM should be considered, actual PM steps, and budget documentation. The PM section lists tasks and their frequency for normal use situations (whether weekly, monthly, quarterly, semi-annually, or annually). The data also includes the labor-hours to perform each item as well as cost data. The annualized data has been used for this analysis, as it corresponds to the scenario where all items on the schedule are performed at the recommended frequency.

The interior doors may be used as an example to illustrate this methodology. Interior swinging fire doors should have the following preventative maintenance tasks completed quarterly (C1025 110 1950):

1. Remove fusible link hold open devices (0.026 labor-hrs)
2. Remove obstructions that impede full movement/swing of door (0.013 labor-hrs)
3. Check swing of door; door must latch on normal closing (0.013 labor-hrs)
4. Test operation of panic hardware (0.007 labor-hrs)
5. Check operation of special devices, such as smoke detectors or magnetic door releases (0.013 labor-hrs)
6. Lubricate hardware (0.013 labor-hrs)
7. Full out maintenance checklist and report deficiencies (0.013 labor-hrs)

Including material costs, the cost for these PM items for each door is \$14.85 including overhead and profit. Since this task should be performed quarterly, the annualized cost of \$53.50/door has been applied.

A model for estimating PM was created for the past 44-school study in a similar process as described for M&R above. However, it is assumed that all facilities below 1000 m² have common PM expenses that would result in a baseline of approximately \$25,000 per year. Above 1000 m² the model increases the price of PM linearly by a factor of \$2.22 per square metre above 1000 m².

It should also be noted that due to the systems included in a school, PM can vary greatly. The Quebec School, for example, utilizes a simpler HVAC system than the British Columbia School. The Quebec School also had fewer fixtures in bathrooms. When all differences are summed, the Quebec School was found to have a very low estimated PM cost under RSMeans. It appears to be an outlier in this regard, as it yields a per-square metre cost of just \$ 12.16 compared to the approximately \$45 per-square metre cost averaged from the British Columbia and Ontario Schools. These differences are difficult to represent in a model that estimates cost based on gross floor area and per square metre unit costs. However, when assessed in aggregate across many schools of varying sizes, the larger schools (5000 m² to 10,000 m²) balance out the smaller schools (500 m² to 2000 m²) – this is even more true in Zone 4 schools.

Table 4.7 shows the comparison between Preventative Maintenance calculated using RSMeans and the modelled average. This was found to vary between schools, and smaller GFAs produce a higher cost per square metre. This example is from the 2022 AFN Education Infrastructure O&M Needs Assessment.



Table 4.7: Example PM Comparison between RSMMeans Annual Cost Estimation and Modeled Annual Cost Estimation in Remote Schools

	British Columbia School	Ontario School	Quebec School	Hypothetical 6000 m ² School
RSMMeans Estimate:	\$ 60,523.13	\$ 43,974.38*	\$ 25,368.75	
RSMMeans Estimate/m²	\$ 46.56	\$ 44.15	\$ 12.68	
Average:	\$ 43,288.75			
Modeled Value	\$ 152,497.50	\$ 93,750.00	\$ 158,325.00	\$ 191,625.00
Modeled Value/m²	\$ 117.31	\$ 94.13	\$ 79.16	\$ 31.94
Average Modeled	\$ 134,857.50			

*The Ontario School RSMMeans Estimate is based on older pre-expansion drawings.

Comparing the modeled PM estimate for a hypothetical 6000 m² school, it yields a cost of \$31.94/m².

4.2.2.3 General Facility Maintenance

General maintenance refers to day-to-day maintenance tasks such as cleaning and snow clearing. Salaries for in-house caretaker staff are included in this item. For a First Nation school, it is expected that salaries for a caretaking supervisor and/or caretaker should be provided for in the facility's O&M budget. A per square metre unit cost of \$100.90 was calculated; however, janitorial salaries do not scale directly with facility size and should be treated as an approximate benchmark for validating a model that was created to approximate such costs.

General Facility Maintenance also includes supplies used by janitorial staff for upkeep of the facility. The model assumes a base cost of \$40,000 representing a part-time salary for a janitor and supplies to service a small school below 1000 m² gross floor area. The model applies a linear growth factor of \$12.2 per square metre above 1000 m².

Based on the data received, the expenses for general maintenance salaries and supplies are averaged below and compared with the modelled average. When viewed in aggregate between these three data points, this yields a 1% variance, which is very good.

Again, Table 4.8 shows the comparison between the modelled and actual estimates for General Facility Maintenance developed in the previous O&M study. This example is from the 2022 AFN Education Infrastructure O&M Needs Assessment.



Table 4.8: Summary of Annual General Maintenance Costs for Three Remote Schools

	British Columbia School	Ontario School	Quebec School
Janitorial Salaries:	\$ 179,421.91	\$ 199,934.88	\$ 97,451.19
Maint. Supplies:	\$ 30,673.85	\$ 52,758.98	\$ 12,233.95
Total:	\$ 210,095.77	\$ 252,720.86	\$ 109,685.14
Average:	\$ 197,198.68		
Modeled Value	\$ 163,725.00	\$ 238,287.50	\$ 195,750.00
Average Modeled	\$ 199,257.50		

4.2.2.4 Heating

On a school-by-school basis, heating is estimated through an average of historical heating costs. On the roll-up for all 395 schools, a modeled estimate was used to approximate heating costs. The model assumes that all schools use heating fuel of some kind, which is most often true.

From past studies, it was found that heating fuel costs vary by remoteness zone, with Zone 1 having a cost of 90 cents per litre, and zones 2, 3 and 4 costing 110 cents, 130 cents and 200 cents per litre respectively. It is then assumed that schools use 30 units of fuel per m² per year.

Data provided by the British Columbia, Ontario and Quebec schools included historical utility costs for the facilities. It should be noted that the Ontario school provided historical O&M accounts information for only the 2020-2021 fiscal year. As such, it may not be representative of typical O&M expenses.

It was assumed that, as heating expenses were not itemized for the Quebec school, it is heated with electricity, as is common in the province. This assumption has been confirmed by the school's administrators.

The British Columbia school included heating as a line item in the budget figures provided. However, they also included propane. It is not known whether propane is also used for heat or another purpose. Thus, it was included in the heating expenses for the British Columbia school.

The Ontario school listed heating fuel and confirmed that the school is heated with diesel fuel that is trucked in using winter roads as soon as the roads are solid enough to support a fuel truck. This can account for the significantly higher heating costs seen in the Ontario School historical O&M expenses.

The heating data was also normalized as a unit cost per Heating Degree Day [4]. This still positions the Ontario school as the most expensive to heat, as at \$0.0105 /m²/HDD, it is approximately twice the British Columbia school with \$0.0049/m²/HDD.

The average per square metre cost for heating was \$65.01 /m². Comparing this to the modeled costs of heating for a remote Zone 4 school, the model yields an estimate of \$60 /m² representing 8.3% variance, which is within a reasonable 10% variance.

4.2.2.5 Electricity

On a school-by-school basis, electricity is estimated through an average of historical heating costs.



On the roll-up for all 395 schools, a modelled estimate was used to approximate electricity costs. The model assumes that all schools use heating fuel of some kind, which is most often true.

In past studies, it was assumed that on-grid communities – typically true for Zones 1, 2 and 3 – buy electricity at an average of 25 cents per kWh, while remote communities relying on off-grid diesel generation pay 100 cents per kWh. It is then assumed that schools use 100 units of electricity per m² per year. One weakness in this model is the variation between regions. Quebec and British Columbia have extensive hydroelectric generation in remote areas of the provinces, providing low-cost electricity to many hard-to-access communities that are classified as Zone 4 by ISC. The model was initially developed as part of a 44-school study of schools in Ontario and thus uses Ontario electricity costs.

Data provided by the British Columbia, Ontario and Quebec schools included historical utility costs for electricity use by the school. It should be noted that the Ontario school provided historical O&M accounts information for only the 2020-2021 fiscal year, which is characterized by the pandemic year, and assumed reduced use of the facility.

Observing electricity costs for the British Columbia School, which provided data for 2018, 2019 and 2020, the per square metre cost is similar to the Ontario school in 2020-2021.

The average per square metre cost for electricity was observed to be \$24.08/m². However, considering the limited historical data from the Ontario school, we may wish to assume a higher price. Quebec has the lowest electricity prices of the provinces, and British Columbia is approximately average [5], thus it may be advantageous to assume a higher average price nationally.

Some further assumptions were made in analyzing the O&M accounting records provided for the Ontario school, which listed electricity (Hydro) for two school buildings and teacherages. Teacherages were not included in this analysis as it is assumed they do not contribute to the school floorspace. However, it is understood that the school was renovated with an expansion in its history which may be metred separately. Thus, it was assumed that the original school structure and expansion are metred and billed separately.

The Quebec school was assumed to be heated using electricity, which was confirmed by the school administration, thus the electricity costs for the Quebec School do include heating costs. This places Quebec at an advantage over many other provinces in terms of utility expenses.

Total Utilities:

Utilities used in the past study are summarized in the following table:

Table 4.9: Summary of Annual Utility Costs for Three Remote Schools

	British Columbia School	Ontario School	Quebec School
Electricity:	\$ 33,289.03	\$ 62,097.97	\$ 50,754.60
Heating:	\$ 28,208.19	\$ 216,005.35	--
Total:	\$ 61,497.22	\$ 278,303.32	\$ 50,754.60
Per Sq. Metre Electricity:	\$ 25.61	\$ 21.26	\$ 25.38



Average Per Sq. Metre Electricity	\$ 24.08		
Per Sq. Metre Heat:	\$ 21.70	\$ 73.72	--
Per Sq. Metre/HDD	\$ 0.0035	\$ 0.0105	--
Average Per Sq. Metre Heat	\$ 65.01		

This example is from the 2022 AFN Education Infrastructure O&M Needs Assessment.

Assessing the difference in heating cost between the British Columbia and Ontario schools from a purely per square metre rate, we find a 70 % variation. However, by introducing Heating Degree Days into the analysis, we find just 17% difference in cost which may be accounted for through regional differences in heating fuel costs and delivery. While the assessment for all 391 schools will not incorporate Heating Degree Days as local HDD data for all schools was not provided and is out of scope of this study, it is worth noting that this is a factor that can lead to variation of in costs. Further, it should be noted that the electricity costs for remote schools assessed may be more similar to the 25 cents per square metre assumed for Zones 1, 2 and 3, rather than the 100 cents per square metre assumed in the model when looking at the comparison in Table 4.9.

4.2.2.6 Insurance

Insurance data was assessed from the actual school budget spreadsheets provided for 2017-2019. It was only available for the British Columbia and Quebec schools, which varied by approximately 45% from their average of \$31,248.35. While these individual schools vary widely between them, the average cost estimate produced by our model is \$32,649.40 when considering all 83 Zone 4 schools. This represents a variance of just 4% from the real-world average of the two schools assessed.

Table 4.10: Comparison of Annual Insurance Costs for Three Remote Schools

	British Columbia School	Ontario School	Quebec School
Insurance:	\$ 38,361.35	--	\$ 24,135.36
Average:	\$ 31,135.36		
Per Sq. Metre:	\$ 29.51	--	\$ 12.07
Average Per Sq. Metre	\$ 20.79		
Modeled Value:	\$ 9,700	\$ 34,000	\$ 21,000
Modeled Average (All Zone 4 schools):	\$ 32,649.40		

4.2.3

The difference in insurance cost between the British Columbia and Quebec schools is significant, likely due to regional differences in risk factors, standard pricing, and regulations. Insurance is also not priced by square metre alone and considers many factors.

O&M Zone Multipliers

To remain consistent with the most current Zone Multipliers used in AFN papers, this report is leveraging Zone Multipliers developed by the BTY Group as part of the Closing the Infrastructure Gap by 2030 report.

The multipliers used are:

Table 4.11: Zone Multipliers used for O&M

Zone	Multiplier Value
1	1
2	1
3	1.6
4	2.75

Past FNESL studies used higher multiplier values, which were based on a comparison of supplier quotes for various repair work in Zones 2 and 4, and compared to a Zone 1 cost estimate based on RSMeans estimates. Most quotes aligned well with the BTY Group multipliers; however, some outliers were significantly higher, leading to an increased average multiplier. There are various considerations regarding the use of a lower multiplier. The first is that electrical grids have expanded, particularly in Northern Ontario with the Wataynikaneyap (Watay) Power transmission system, reducing the cost of electricity in 17 previously off-grid communities, which is expected to reduce construction and renovation costs as well as utility costs. Similarly, in different areas of the country, transportation networks and supply chains have improved, or improvements are a priority for the present government, which can be expected to make these costs more predictable in remote Zone 3 and 4 areas.

4.2.4 Summary of Schools O&M Cost Estimation

To generate per square metre unit costs for each zone, the values in the following table reflects the various factors that were used to model O&M expenses for schools. These were developed and calibrated through study of real-world school and utility data.

The factor used for Maintenance & Repair (M&R) was updated from previous studies using cost escalation data from RSMeans and Statistics Canada. This adjustment resulted in a cost of \$140/m² for schools and \$145/m² for teacherages. This difference between schools and teacherages is due to a slightly greater escalation of construction costs for residential construction than for institutional/school construction. As maintenance & repair is largely completed by contractors, such as major repairs and refurbishments, including roof replacement, repairs and upgrades to HVAC, plumbing, electrical, etc., it is impacted by construction cost increases similar to new construction.

Table 4.12: Summary of Model Variables and Adjustment Factors for Schools

	Zone 1	Zone 2	Zone 3	Zone 4
Zone Multiplier	1	1	1.6	2.75
Maintenance & Repair factor (/m² of GFA)	\$140			
PM Factor (/m² over 1000 m²)	2.22			
Heating Costs (Cents/L of fuel)	90	110	130	200
Heating Fuel Usage (Units/m² of GFA)	30			



Electricity Costs (Cents / kWh)	25	25	25	100
Electricity Requirements (Units/m² of GFA)	100			
Insurance Costs (/m² factor over 1000/m²)	1.8	1.8	1.8	15

Zone multiplier is used to adjust the cost estimate to different levels of remoteness for Zones 1 through 4, reflecting the increased cost associated with maintaining facilities in more remote communities. The Zone Multiplier is applied to M&R and PM estimates.

The Preventative Maintenance (PM) factor is used to model the increase in cost per square metre above 1000 m² of gross area, with an assumption that below 1000 m² of gross area, schools would still require similar levels of preventative maintenance (ex. still has HVAC, plumbing, similar number of doors and windows, etc.)

1000 m² is the gross floor area, which more than 80% of schools exceed. This was chosen as a baseline below which it is reasonable to assume base PM costs will remain relatively constant. The PM Factor of 2.22 above 1000 m² is a was calibrated using an average of the real schools assessed using RSMeans PM tables. As noted in section Preventative Maintenance 4.2.2.2, PM contains a high degree of variation between school design and is difficult to model on an individual basis. This model is validated for estimating total O&M expenses across a set of many schools, such as this set of 391 schools across Canada. With more time and a larger data set, this model may be developed to produce closer individual school values for PM.

Heating costs assume that the school is heated by gas or diesel, and that transport of the fuel to remote areas increases the costs of heating fuel. These costs can fluctuate for a single school based on different conditions including weather and availability of fuel trucks. The model is assumed to be accurate when estimating the expense for multiple schools.

Electricity costs vary by electricity source and can also vary greatly between provinces. This is a limitation of the model being used. It is assumed that Zone 1, 2 and 3 are supplied electricity by a reliable grid connection. Zone 4 is assumed off-grid and supplied by diesel generators – this is changing slowly with projects like the Watanikanyap Power extension to northern Ontario.

4.2.3 Insurance is estimated by assuming that any school 1000 m² or under pays \$ 5000/yr. In zones 1, 2 and 3, it was assumed the cost increases by approximately \$ 1.8/m² square metre above 1000 m². In Zone 4, it was assumed that the cost increases by approximately \$ 15/m² above 1000 m². This model appears to produce reasonable results based on available data. It may overestimate insurance cost for facilities larger than 4000 m². More data is required to refine this model.

Summary of Teacherages O&M Cost Estimation

To generate estimated O&M costs for each teacherage across four remoteness zones, the values in Table 4.13 were used.



Table 4.13: Summary of Model Variables and Adjustment Factors for Teacherages

	Zone 1	Zone 2	Zone 3	Zone 4
Zone Multiplier	1	1	1.6	2.75
Maintenance & Repair factor (/m² of GFA)	\$145			
PM Factor (/m² over 90 m²)	\$2.22			
Heating Costs (Cents/L of fuel)	90	110	130	200
Heating Fuel Usage (Units/m² of GFA)	70			
Electricity Costs (Cents / kWh)	25	25	25	100
Electricity Requirements (Units/m² of GFA)	30			
Insurance Costs (/m² factor over 90/m²)	1.8	18	1.8	15

The same assumptions were made to estimate the O&M costs for teacherages as with schools in section 4.5.1. There are a few notable exceptions. The calculated estimates are difficult to validate due to extremely limited information. They are interpolated using the known costs for school buildings.

To estimate the Preventative Maintenance cost, the second quartile gross area of all 1026 teacherages was found to be 87 m² and rounded to 90 m². This was used as a minimum benchmark. Using a linear scale, the minimum Preventative Maintenance cost for schools of \$ 25,000 for a gross area of 1000 m² was adjusted to \$2250 for a 90 m² teacherage. More data points are necessary to validate this; however, it is judged to be a reasonable estimate.

Insurance costs were estimated using an assumed base cost of \$750 for teacherages up to and including 90 m², increasing by the same factors used in the school estimate for every square metre above 90 m². Like the schools, this may result in overestimates for the largest teacherage buildings. More data is required to validate these assumptions. The average cost of insurance on homes across Canada was found to be approximately \$ 840 annually in 2012 [6] which is approximately \$ 960.45 in 2025. The average insurance cost calculated for teacherages using this model is \$ 986 thus the insurance costs estimated using this model can be considered reasonable overall. It should be noted that insurance costs can vary significantly between provinces [6].

4.3 Unit Cost Updates From Previous Studies

As noted previously, unit costs were updated from the previous studies for use in the cost estimating models from Statistics Canada Building Construction Price Indexes.

Figure 4.1 shows the overall trend in cost inflation between 2016 and 2025, showing that inflation remained constant until Q1 2021, at which time it increased dramatically from 2% - 4% year/year inflation to a period of very rapid escalation, resulting in an average increase of approximately 6% per year between 2021 and 2025, with 2021 through 2023 being the most dramatic year/year

increases. Figure 4.2 shows a quarterly year/year increase beginning in 1st quarter of 2017 (compared to 1st quarter of 2016). Q1 2022 shows a dramatic maximum increase of 11.1% compared to Q1 2021.

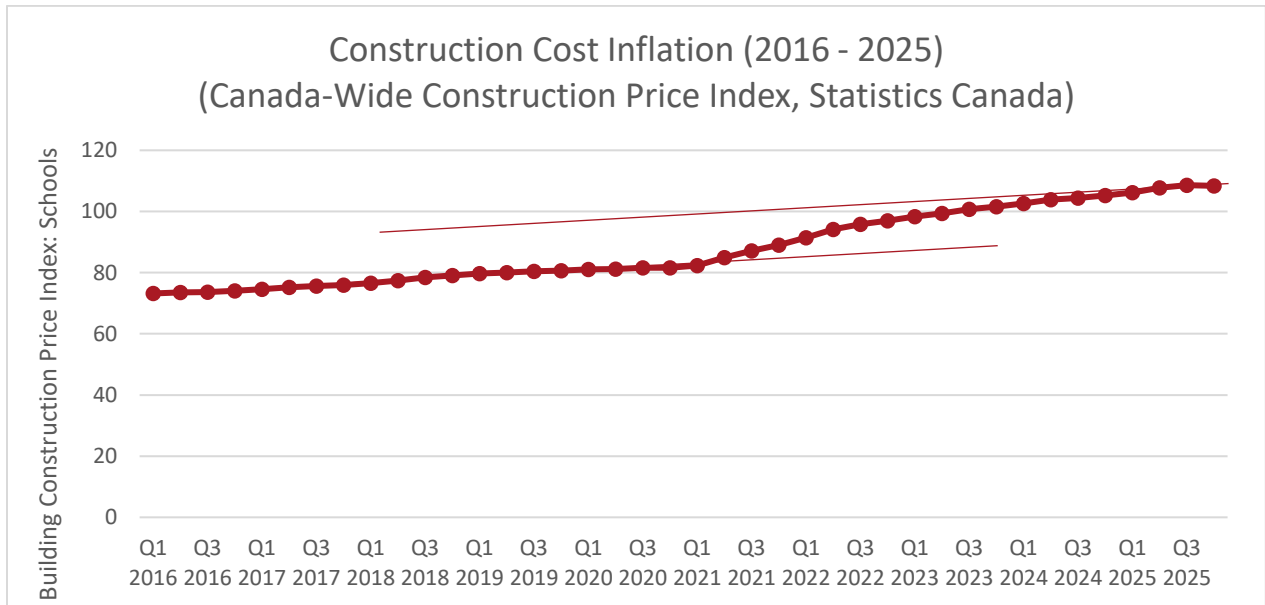


Figure 4.1: Construction Cost Index Trends Between Q1 2016 and Q3 2025

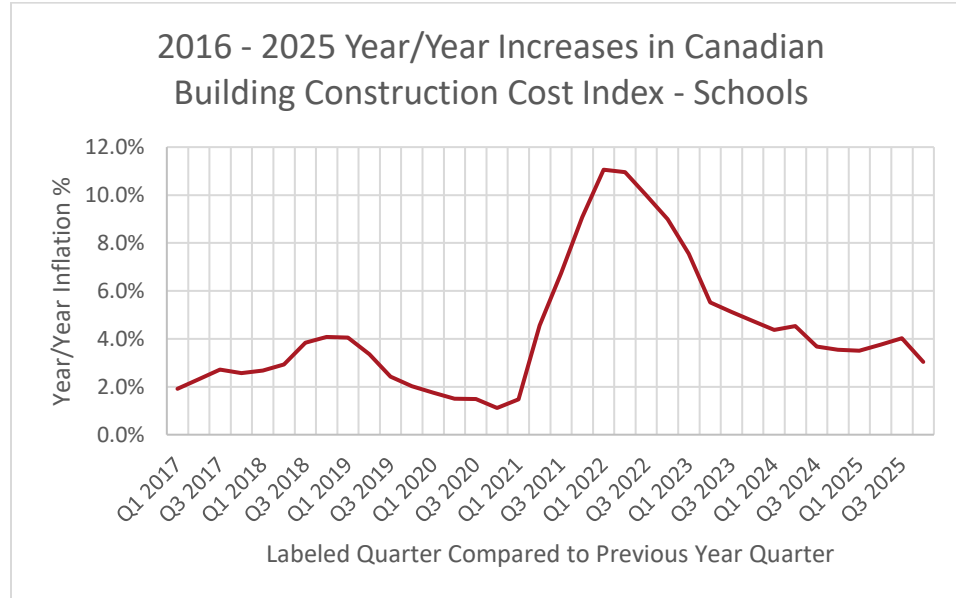


Figure 4.2: 2016-2025 Year/Year Inflation in Building Construction Costs

The average cost growth between 2021 and 2025 was found to be approximately 6% for institutional building construction, while residential construction averaged 7% annually. Thus, a 6% growth factor per year was applied to unit cost variables associated with schools cost estimating formulae, while teacherage unit cost variables were adjusted using a 7% residential growth factor to adjust unit-cost variables from 2021 to 2025.



5.0 Results

5.1 Capital Cost Requirements for Schools

The capital costing needs for all 395 on reserve First Nation schools are calculated in accordance with the 2023 School Space Accommodation Standards (SSAS) by using projected enrolment data over the twenty-year planning period. Sections 5.1.1, 5.1.2, 5.1.3, 5.1.4, and 5.1.5 present the results for the capital requirements for schools in the immediate, years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20 phases, respectively. Section 5.1.6 presents a summary of the capital costs for all phases, and Section 5.1.7 presents a breakdown of costs according to zones.

By the end of the 20-year planning period, the projected total gross floor area of school space required for the student enrolment included in this study is approximately **1,608,806 m²**.

Immediate Needs

5.1.1 In this section, the immediate needs of the schools are presented, and the costing associated with both additions and new construction is calculated. The following data illustrates the immediate costing needs for all 395 schools in year 0, to expand existing schools or replace aged schools to meet the floor area requirements of the SSAS based on the estimated 2024/2025 nominal roll.

In this analysis, all existing school buildings that were eligible for additional space in year 0 were allocated the amount of required space that they are eligible for in year 10 (as the SSAS will be based on the tenth year of occupancy). The data below illustrates that the immediate capital needs for these schools is significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.1 illustrates that the costs for required additions are higher than the costs for new construction in year 0. Requirements for school replacement considered the age of each facility as well the reported estimated remaining life from the most recent ACRS inspection.

Table 5.1: Immediate Capital Cost Requirement for Schools

Phase	Type	Costing
Immediate	Additions	\$2,187,788,738
	New Construction	\$1,839,790,309
	Planning & Design	\$578,479,471

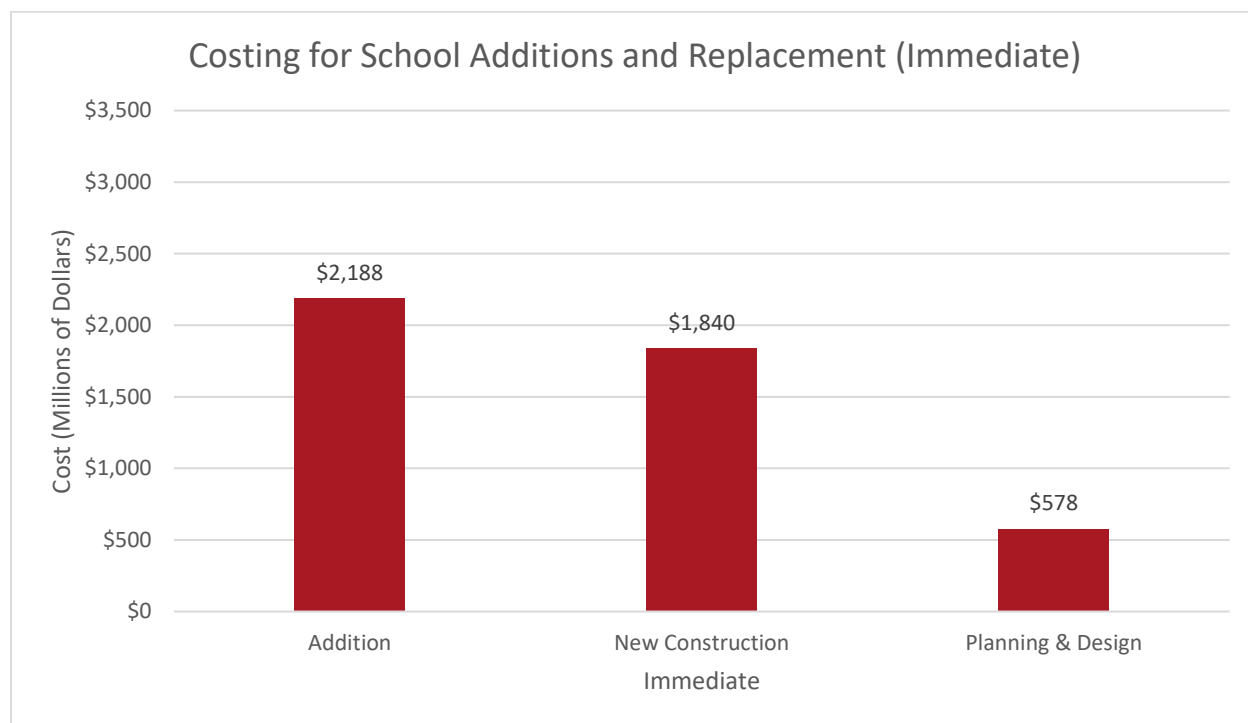


Figure 5.1: Immediate Capital Cost Requirements for Schools

5.1.2 Years 1 to 5

In this section, the needs of the schools are presented for years 1 to 5, and the costing associated with both additions and new construction is calculated. The following data illustrates the costing needs for all 395 schools, to expand existing schools or replace aged schools to meet the floor area requirements of the SSAS based on the projected nominal roll.

In this analysis, all existing school buildings that were eligible for additional space in years 1 to 5 were allocated the amount of required space that they are eligible for in year 15 (using the tenth year of occupancy). The data below illustrates that the capital needs in years 1 to 5 for these schools is significant, mostly due to many of the existing buildings requiring replacement. The data in Figure 5.2 illustrates that the cost for new construction is significantly higher than the costs for required additions in years 1 to 5. Requirements for school replacement considered the age of each facility as well the reported estimated remaining life from the most recent ACRS inspection.

Table 5.2: Years 1-5 Capital Cost Requirement for Schools

Phase	Type	Costing
Years 1-5	Additions	\$16,129,465
	New Construction	\$880,796,323
	Planning & Design	\$128,828,519

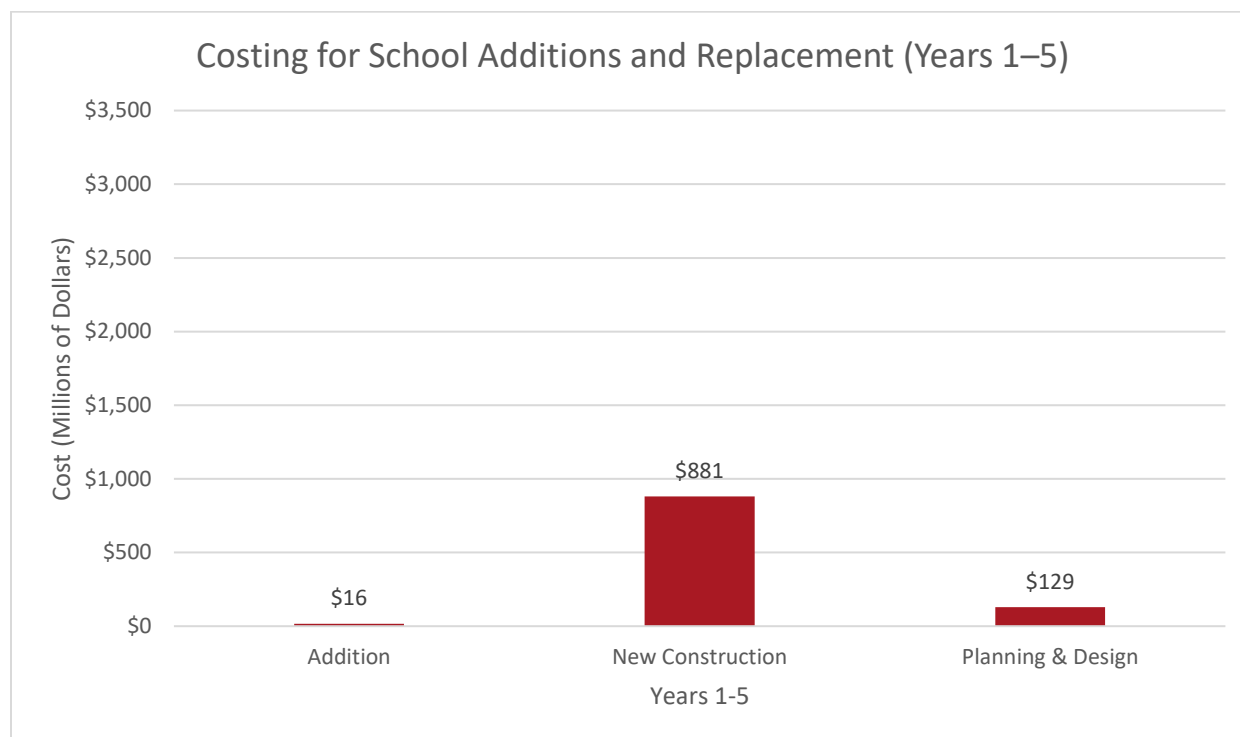


Figure 5.2: Years 1-5 Capital Cost Requirement for Schools

5.1.3 Years 6 to 10

In this section, the needs of the schools are presented for years 6 to 10, and the costing associated with both additions and new construction is calculated. The following data illustrates the costing needs for all 395 schools, to expand existing schools or replace aged schools to meet the floor area requirements of the SSAS based on the projected nominal roll.

In this analysis, all existing school buildings that were eligible for additional space in years 6 to 10 were allocated the amount of required space that they are eligible for in year 20 (using the tenth year of occupancy). The data below illustrates that the capital needs in years 6 to 10 for these schools is significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.3 illustrates that the cost for new construction is higher than the costs for required additions in years 6 to 10. Requirements for school replacement considered both the age of each facility and the reported estimated remaining life from the most recent ACRS inspection.

Table 5.3: Years 6-10 Capital Cost Requirement for Schools

Phase	Type	Costing
Years 6-10	Additions	\$935,569,320
	New Construction	\$2,131,457,737
	Planning & Design	\$441,616,488

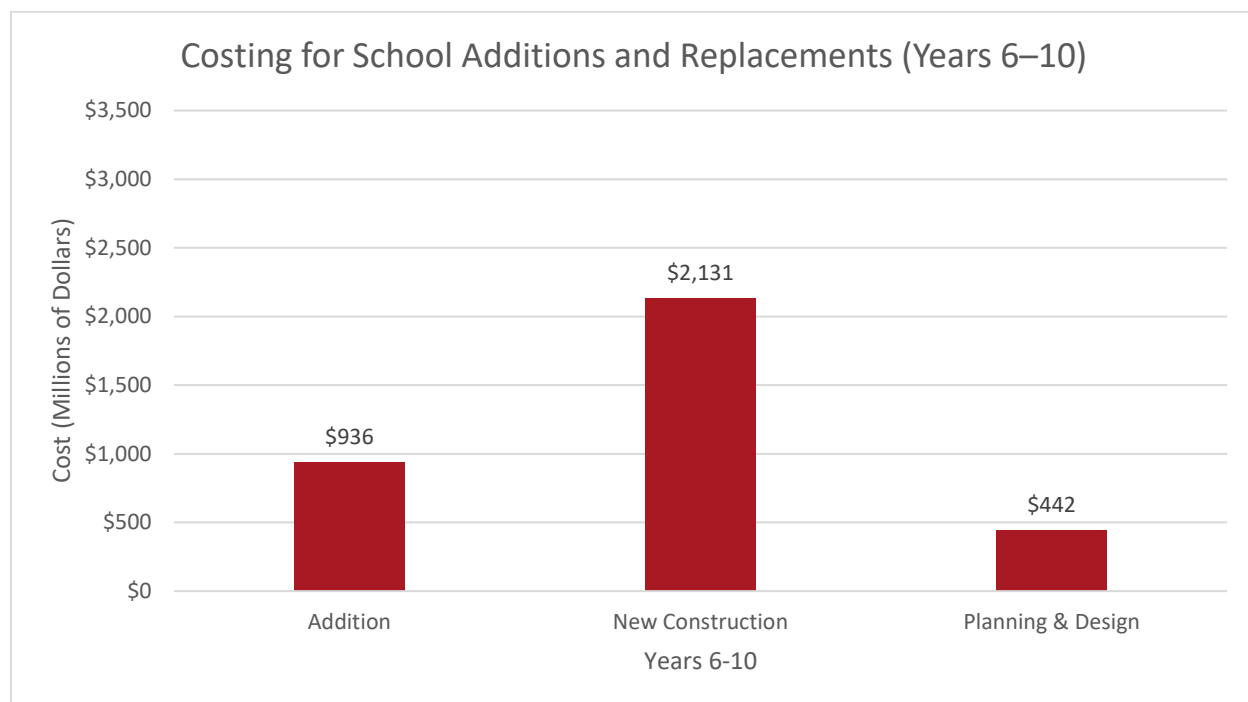


Figure 5.3: Years 6-10 Capital Cost Requirement for Schools

5.1.4 Years 11 to 15

In this section, the needs of the schools are presented for years 11 to 15, and the costing associated with both additions and new construction is calculated. The following data illustrates the costing needs for all 395 schools, to expand existing schools or replace aged schools to meet the floor area requirements of the SSAS based on the projected nominal roll.

In this analysis, all existing school buildings that were eligible for additional space in years 11 to 15 were allocated the amount of required space that they are eligible for in year 25 (using the tenth year of occupancy). The data below illustrates that the capital needs in years 11 to 15 for these schools is significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.4 illustrates that the cost for new construction is higher than the costs for required additions in years 11 to 15. Requirements for school replacement considered the age of each facility as well as the reported estimated remaining life from the most recent ACRS inspection.

Table 5.4: Years 11-15 Capital Cost Requirement for Schools

Phase	Type	Costing
Years 11-15	Additions	\$202,252,855
	New Construction	\$3,951,594,603
	Planning & Design	\$601,077,977

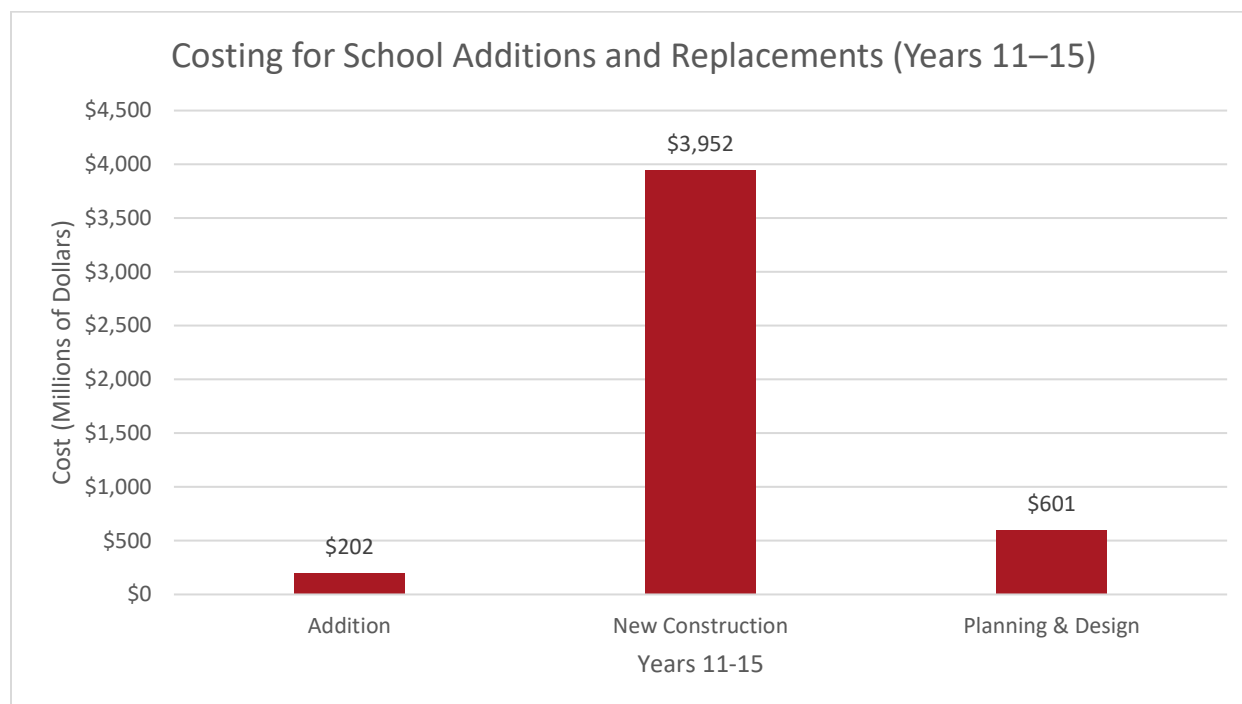


Figure 5.4: Years 11-15 Capital Cost Requirement for Schools

5.1.5 Years 16 to 20

In this section, the needs of the schools are presented for years 16 to 20, and the costing associated with both additions and new construction is calculated. The following data illustrates the costing needs for all 395 schools to expand existing schools or replace aged schools to meet the floor area requirements of the SSAS based on the projected nominal roll.

In this analysis, all existing school buildings that were eligible for additional space in years 16 to 20 were allocated the amount of required space that they are eligible for in year 30 (using the tenth year of occupancy). The data below illustrates that the capital needs in years 16 to 20 for these schools are significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.5 illustrates that the cost for new construction is higher than the costs for required additions in years 16 to 20. Requirements for school replacement considered both the age of each facility as well as the reported estimated remaining life from the most recent ACRS inspection.

Table 5.5: Years 16-20 Capital Cost Requirement for Schools

Phase	Type	Costing
Years 16-20	Additions	\$953,971,568
	New Construction	\$1,611,331,315
	Planning & Design	\$368,846,675

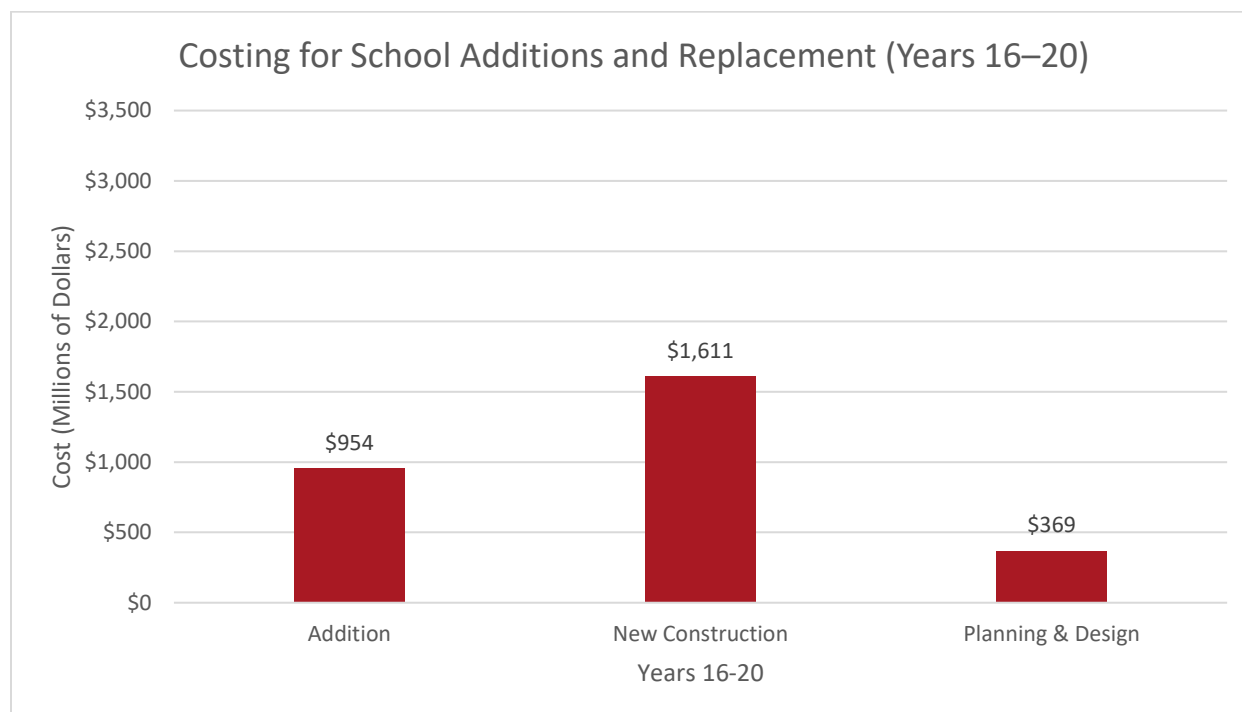


Figure 5.5: Years 16-20 Capital Cost Requirement for Schools

5.1.6 School Summary

This section summarizes additions and new construction costs for schools across all phases, including immediate needs, as well as capital needs for years 1 to 5, 6 to 10, 11 to 15, and 16 to 20. The total capital cost for all 395 schools was determined to be \$15,002,586,897, taking into consideration the space a school was eligible for, what zone the school was located, as well as a 2% inflation of construction costs over each year of the planning period. The results illustrated in Figure 5.6 below show that the immediate needs of all schools are extensive, and both additions and new construction are required. It can also be seen that the capital costs for new construction in years 11 to 15 and 16 to 20 are much higher than the other phases. This is associated with the age and condition of the school facilities.



Table 5.6: Total Capital Cost Requirement for Schools

Phase	Type	Costing
Immediate	Additions	\$2,187,788,738
	New Construction	\$1,839,790,309
	Planning & Design	\$578,479,471
Years 1-5	Additions	\$16,129,465
	New Construction	\$880,796,323
	Planning & Design	\$128,828,519
Years 6-10	Additions	\$935,569,320
	New Construction	\$2,131,457,737
	Planning & Design	\$441,616,488
Years 11-15	Additions	\$202,252,855
	New Construction	\$3,951,594,603
	Planning & Design	\$601,077,977
Years 16-20	Additions	\$953,971,568
	New Construction	\$1,611,331,315
	Planning & Design	\$368,846,675
Total - All Years	All Types	\$16,829,531,363.

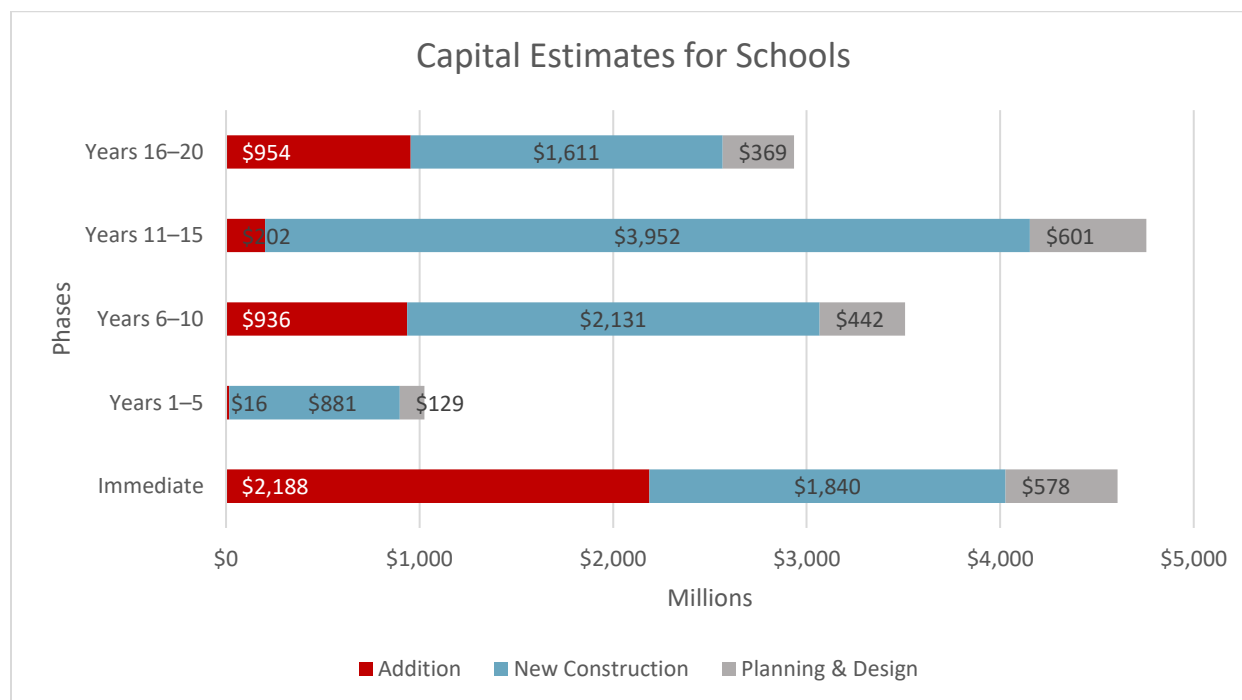


Figure 5.6: Total Capital Cost Requirement for Schools

In the immediate term, two hundred and twenty-seven (227) schools qualify for additions in order to meet the 2023 SSAS allowable floor area for the 2025 nominal roll, and seventy-seven (77) schools



qualify for immediate replacement based on the facility age and/or reported condition. This information can be broken down further as follows:

- Among Zone 1 First Nations, 26 schools require replacement and 50 schools require additions in year 0 (in total 62,974 m² of new construction and 56,508 m² of addition)
- Among Zone 2 First Nations, 35 schools require replacement and 103 schools require additions in year 0 (in total 122,570 m² of new construction and 132,184 m² of addition)
- Among Zone 3 First Nations, 2 schools require replacement and 7 schools require additions in year 0 (in total 5,795 m² of new construction and 10,562 m² of addition)
- Among Zone 4 First Nations, 14 schools require replacement and 58 schools require additions in year 0 (in total 58,162 m² of new construction and 82,296 m² of addition)

Schools Costing Summary by Zone

5.1.7 This section illustrates the capital needs of schools associated with their zone, for both new construction and additions, and the resulting costs for these upgrades. The results are shown separated by phase including immediate needs (year 0), years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20.

5.1.7.1 Immediate Needs

. Figure 5.7 presents the immediate capital needs for schools across all zones.

Table 5.7: Immediate Capital Cost Requirement by Zone for Schools

Immediate		
Zone Number	Type	Costing
Zone 1	Additions	\$311,268,900
	New Construction	\$356,919,669
	Planning & Design	\$97,426,463
Zone 2	Additions	\$851,954,785
	New Construction	\$798,697,797
	Planning & Design	\$232,545,017
Zone 3	Additions	\$93,308,500
	New Construction	\$52,563,235
	Planning & Design	\$21,182,096
Zone 4	Additions	\$931,256,553
	New Construction	\$631,609,608
	Planning & Design	\$227,325,895
Total - All Zones	All Types	\$4,606,058,518

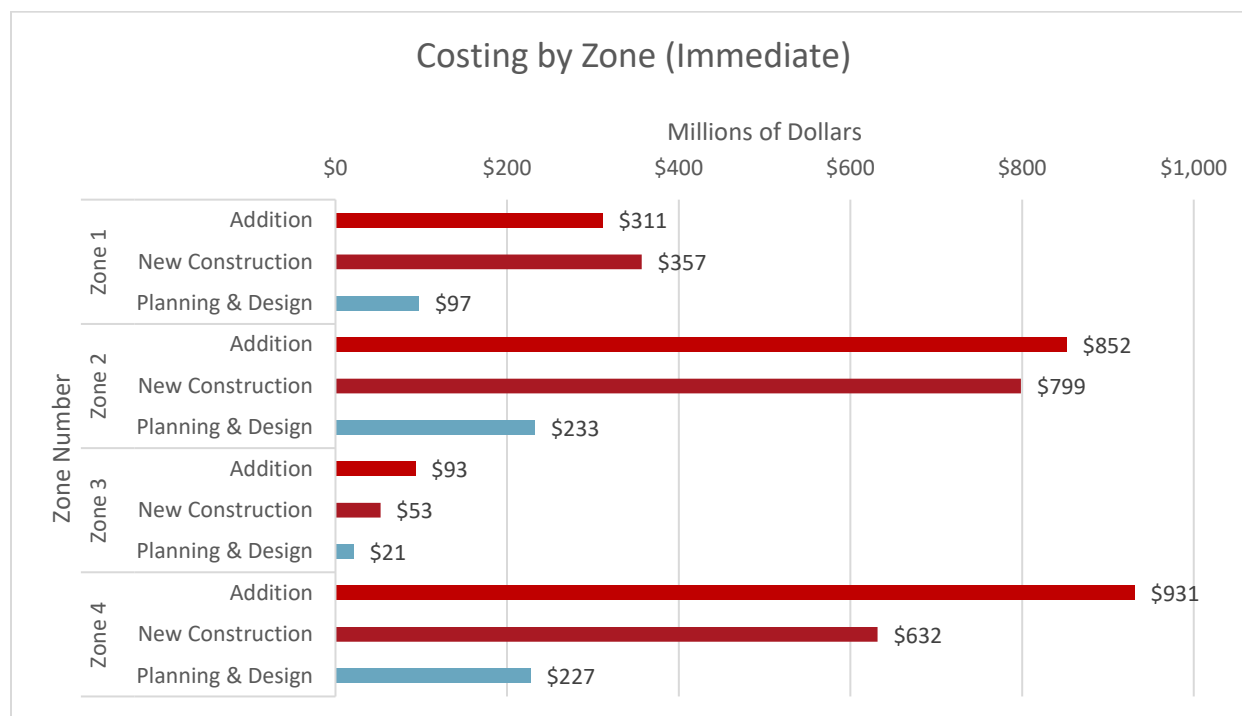


Figure 5.7: Immediate Capital Cost Requirement by Zone for Schools

5.1.7.2 Years 1 to 5

Figure 5.8 presents the capital needs for schools across all zones in years 1 to 5.

Table 5.8: Years 1-5 Capital Cost Requirement by Zone for Schools

Years 1-5		
Zone Number	Type	Costing
Zone 1	Additions	\$10,795,512
	New Construction	\$161,481,419
	Planning & Design	\$24,850,967
Zone 2	Additions	\$1,723,421
	New Construction	\$481,830,475
	Planning & Design	\$68,002,047
Zone 3	Additions	\$0
	New Construction	\$35,509,270
	Planning & Design	\$5,326,390
Zone 4	Additions	\$3,610,532
	New Construction	\$201,975,159
	Planning & Design	\$30,649,113
Total - All Zones		All Types \$1,025,754,305

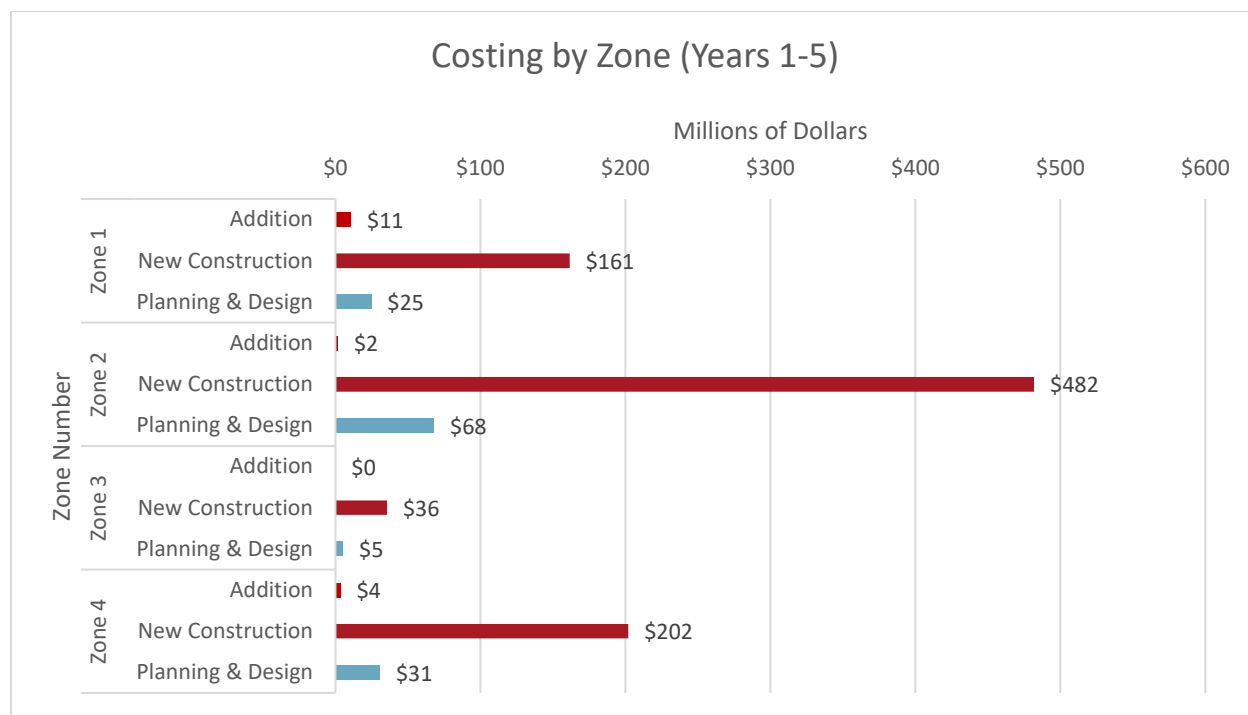


Figure 5.8: Years 1-5 Capital Cost Requirement by Zone for Schools

5.1.7.3 Years 6 to 10

Figure 5.9 presents the capital needs for schools across all zones in years 6 to 10.

Table 5.9: Years 6-10 Capital Cost Requirement by Zone for Schools

Years 6-10		
Zone Number	Type	Costing
Zone 1	Additions	\$139,157,444
	New Construction	\$400,232,356
	Planning & Design	\$77,589,505
Zone 2	Additions	\$388,858,381
	New Construction	\$929,862,289
	Planning & Design	\$185,994,794
Zone 3	Additions	\$21,525,753
	New Construction	\$97,659,017
	Planning & Design	\$17,144,971
Zone 4	Additions	\$386,027,742
	New Construction	\$703,704,075
	Planning & Design	\$160,887,218
Total - All Zones	All Types	\$3,508,643,545.00

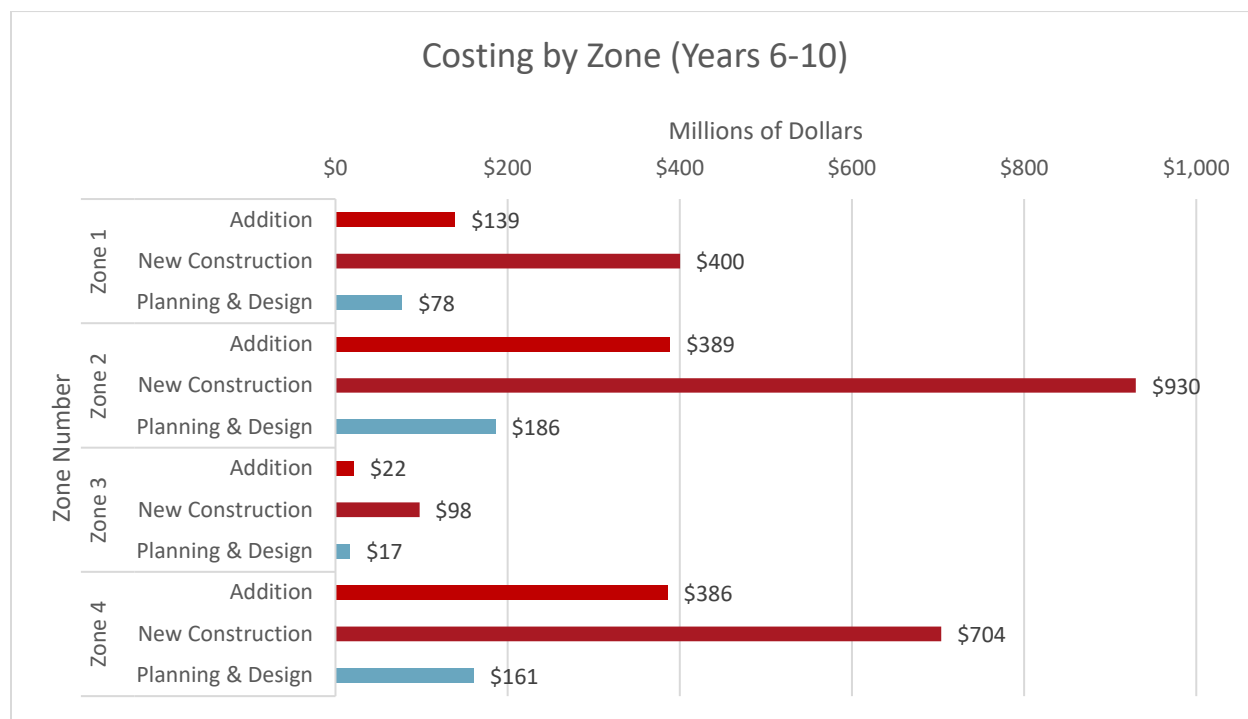


Figure 5.9: Years 6-10 Capital Cost Requirement by Zone for Schools

5.1.7.4 Years 11 to 15

Figure 5.10 presents the capital needs for schools across all zones in years 11 to 15.

Table 5.10: Years 11-15 Capital Cost Requirement by Zone for Schools

Years 11-15		
Zone Number	Type	Costing
Zone 1	Additions	\$40,835,069
	New Construction	\$742,730,291
	Planning & Design	\$114,498,348
Zone 2	Additions	\$78,961,542
	New Construction	\$1,937,239,762
	Planning & Design	\$285,165,348
Zone 3	Additions	\$6,128,847
	New Construction	\$148,584,325
	Planning & Design	\$22,105,194
Zone 4	Additions	\$76,327,398
	New Construction	\$1,123,040,224
	Planning & Design	\$179,309,088
Total - All Zones	All Types	\$4,754,925,436.00

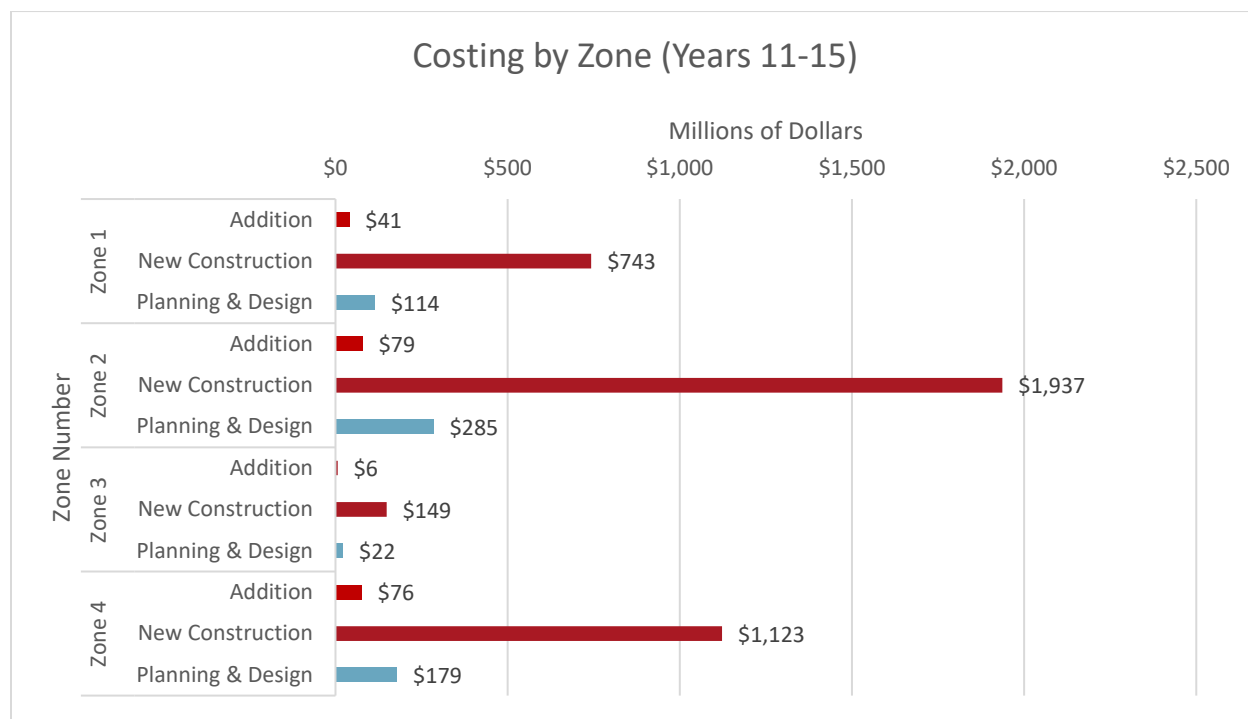


Figure 5.10: Years 11-15 Capital Cost Requirement by Zone for Schools

5.1.7.5 Years 16 to 20

Figure 5.11 presents the capital needs for schools across all zones in years 16 to 20.

Table 5.11: Years 16-20 Capital Cost Requirement by Zone for Schools

Years 16-20		
Zone Number	Type	Costing
Zone 1	Additions	\$161,203,724
	New Construction	\$271,982,845.77
	Planning & Design	\$63,075,077
Zone 2	Additions	\$349,118,161
	New Construction	\$528,618,442
	Planning & Design	\$123,897,620
Zone 3	Additions	\$40,988,339
	New Construction	\$0
	Planning & Design	\$5,921,283
Zone 4	Additions	\$402,661,345
	New Construction	\$810,730,027
	Planning & Design	\$175,952,694
Total - All Zones	All Types	\$2,934,149,557.77

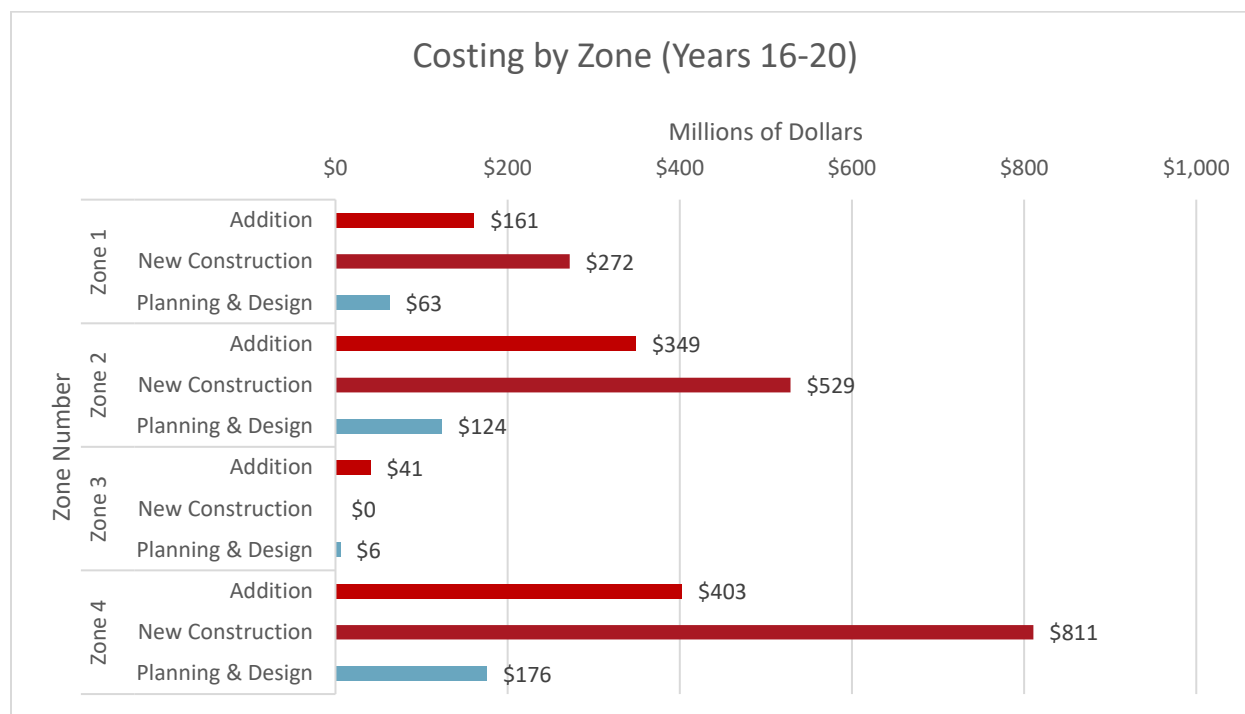


Figure 5.11: Years 16-20 Capital Cost Requirement by Zone for Schools

5.1.7.6 Breakdown by time for immediate to 20-year needs (Schools):

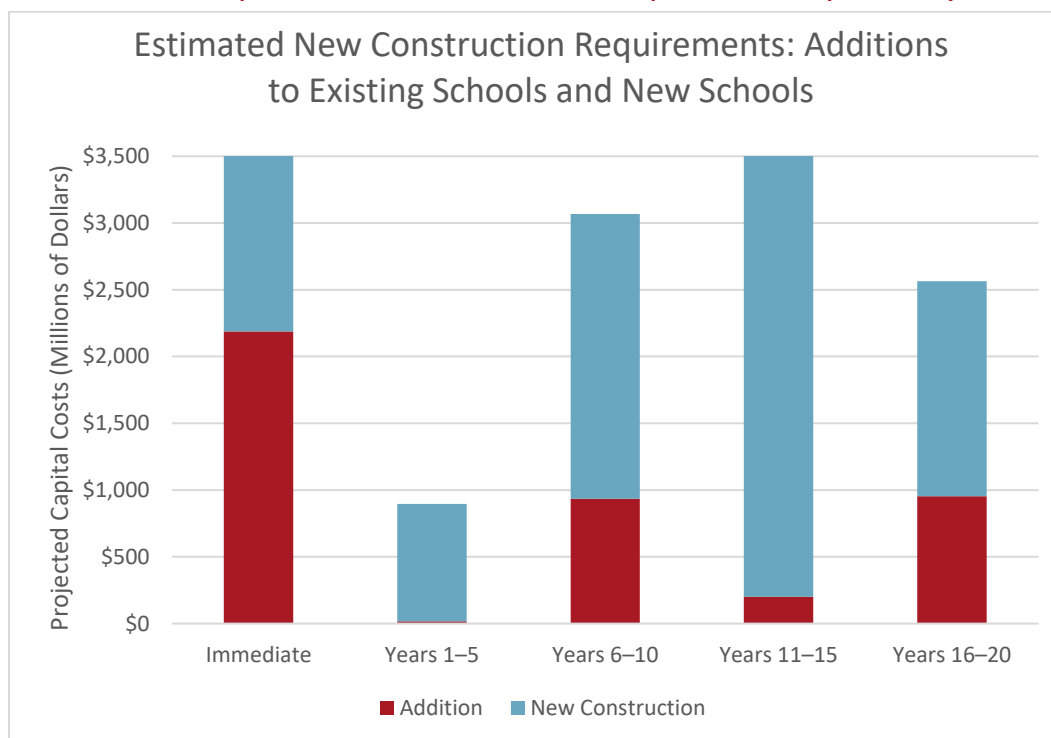


Figure 5.12 Additions to Existing Schools and New Schools

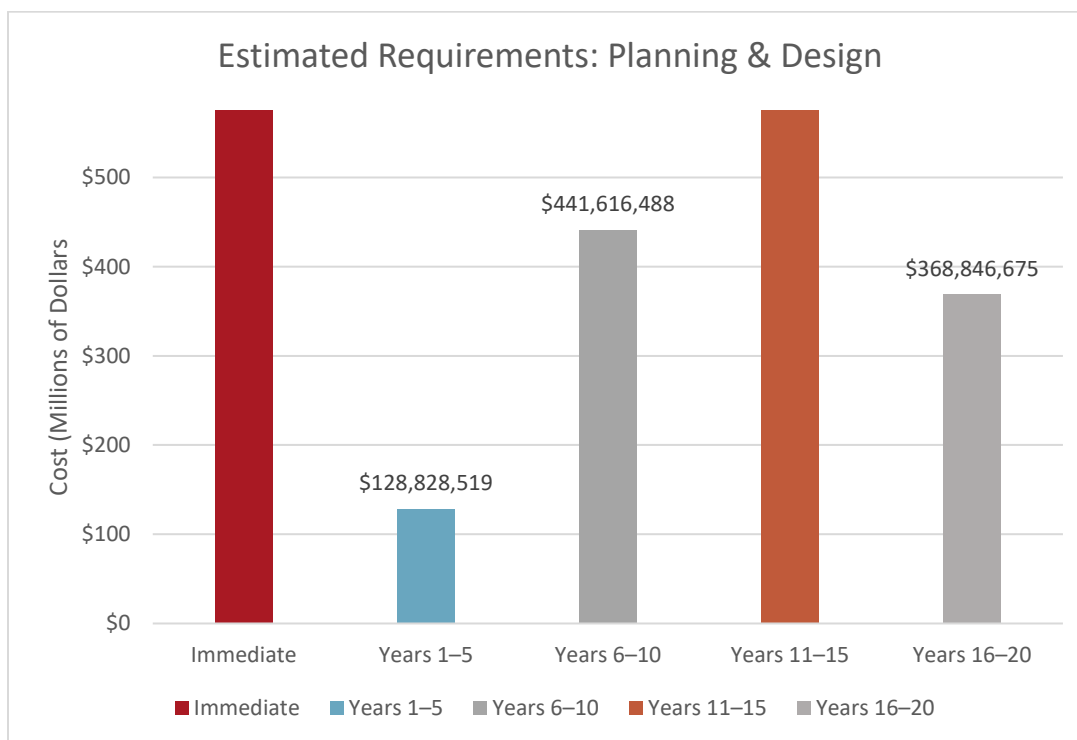


Figure 5.13: Requirements for Planning and Design

5.1.8 Breakdown of Total Capital Cost Estimates for Schools by Region

Table 5.12 below summarizes the breakdown of estimated school capital needs across the regions of British Columbia, Ontario, Saskatchewan, Manitoba, Quebec and Atlantic, as were included in the source data for this study.

Table 5.12: Summary Breakdown of Capital Cost Estimates for Schools by Region

Region	Year 0	Year 5	Year 10	Year 15	Year 20	Total Capital Cost
BRITISH COLUMBIA	\$440,981,706	\$231,874,360	\$537,324,923	\$436,386,283	\$297,996,564	\$1,651,099,520
ONTARIO	\$889,938,615	\$119,841,973	\$861,636,175	\$897,906,963	\$613,379,131	\$3,238,508,130
SASKATCHEWAN	\$956,694,413	\$351,504,264	\$1,449,954,832	\$1,457,360,548	\$728,346,979	\$4,528,616,208
MANITOBA	\$1,294,930,351	\$201,182,849	\$949,913,359	\$542,729,981	\$715,318,557	\$3,412,878,180
ALBERTA	\$567,065,655	\$68,802,682	\$585,174,247	\$799,006,376	\$437,968,068	\$2,387,121,966
QUEBEC	\$476,958,471	\$52,548,179	\$307,360,480	\$455,039,531	\$153,151,383	\$1,305,367,705
ATLANTIC	\$84,487,930	\$0	\$27,553,277	\$43,890,440	\$150,008,005	\$305,939,653
						\$16,829,531,362.00

The trends presented by this data are illustrated below in Figure 5.14: Estimated Capital Needs by Region over the Planning Period.

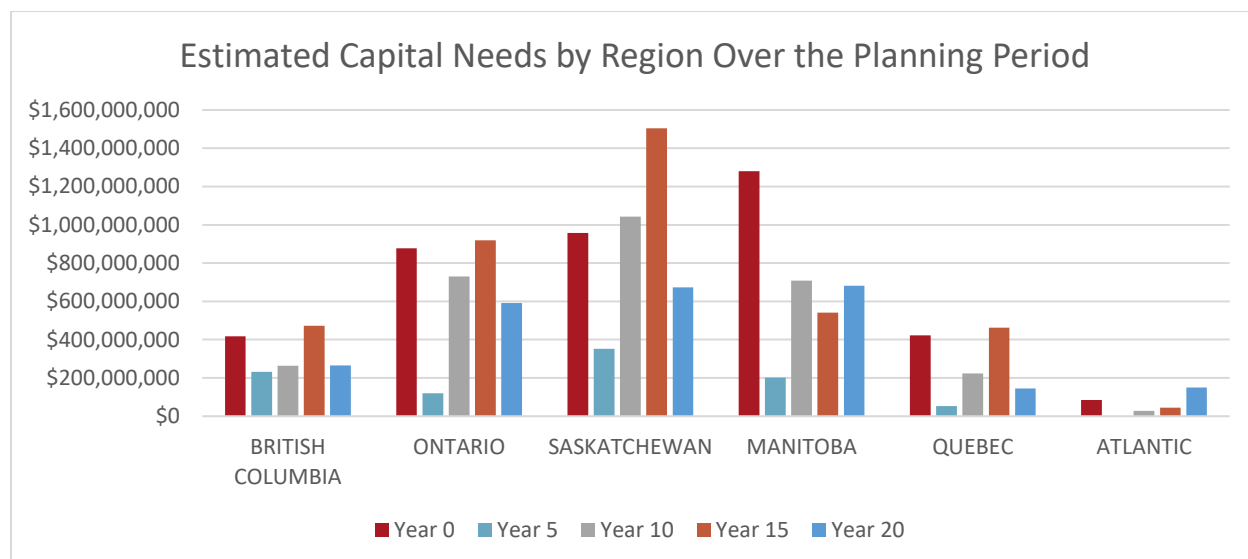


Figure 5.14: Estimated Capital Needs by Region over the Planning Period

Table 5.13: Regional Distribution of Infrastructure Needs

Region	Total (20-Year Planning Period)		
	Schools Needing Replacement	Addition GFA (m ²)	Number of Existing Schools in Region
British Columbia	63	79155	79
Ontario	52	84429	65
Saskatchewan	73	99275	81
Manitoba	41	78062	57
Alberta	48	80376	66
Quebec	32	40174	37
Atlantic	6	11162	10

5.2 Capital Cost Requirements for Teacherages

The capital costing needs for all 1227 on-reserve First Nation teacherages are calculated in accordance with the Level of Service Standards and Management of Teacherages on Reserve guidelines by using projected enrolment data over the twenty-year planning period. Sections 5.2.1, 5.2.2, 5.2.3, 5.2.4, and 5.2.5 present the results for the capital requirements for teacherages in the immediate, years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20 phases, respectively. Section 5.2.6 presents a summary of the capital costs for all phases, and Section 5.2.7 presents a breakdown of costs according to zones. This costing is based on the floor area requirements of the Level of Service Standards and Management of Teacherages on Reserve guidelines and the projected nominal roll.

By the end of the 20-year planning period, an estimated total of 252,435 m² of residential space for teachers to live in communities will be required.

Immediate Needs

In this section, the immediate needs of the teacherages are presented, and the costing associated with both additions and new construction is calculated. The following data illustrates the immediate costing needs for teacherages in year 0, to expand existing teacherages or replace aged teacherages to meet the floor area requirements of the Level of Service Standards and Management of

5.2. Teacherages on Reserve guidelines based on the 2024/2025 nominal roll.

The data below illustrates that the immediate capital needs for these teacherages is significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.12 illustrates that the cost for new construction is higher than the costs for required additions in year 0. Requirements for teacherage replacement considered the age of each facility as well the reported estimated remaining life from the most recent ACRS inspection.

Table 5.14: Immediate Capital Cost Requirement for Teacherages

Phase	Type	Costing
Immediate	Additions	\$367,737,443
	New Construction	\$507,810,102
	Planning & Design	\$125,997,864

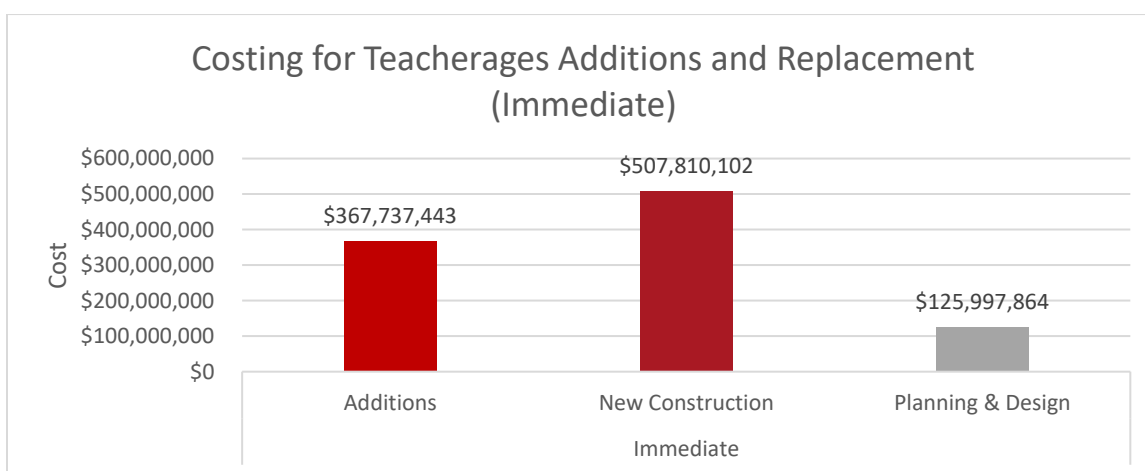


Figure 5.15: Estimated Immediate Capital Cost Requirement for Teacherages

Years 1 to 5

In this section, the needs of the teacherages in years 1 to 5 are presented, and the costing associated with both additions and new construction is calculated. The following data illustrate the costing needs for all 1227 teacherages in years 1 to 5, to expand existing teacherages or replace aged teacherages, to meet the floor area requirements of the Level of Service Standards and Management of Teacherages on Reserve guidelines, based on the projected nominal roll.

Figure 5.14 shows that the capital needs in years 1 to 5 for teacherages are significant, mostly due to many of the existing buildings requiring replacement. Requirements for teacherage replacement considered the age of each facility as well the reported estimated remaining life from the most recent ACRS inspection.

Table 5.15: Years 1-5 Capital Cost Requirement for Teacherages

Phase	Type	Costing
Years 1-5	Additions	\$93,884,789
	New Construction	\$175,030,455
	Planning & Design	\$39,239,068

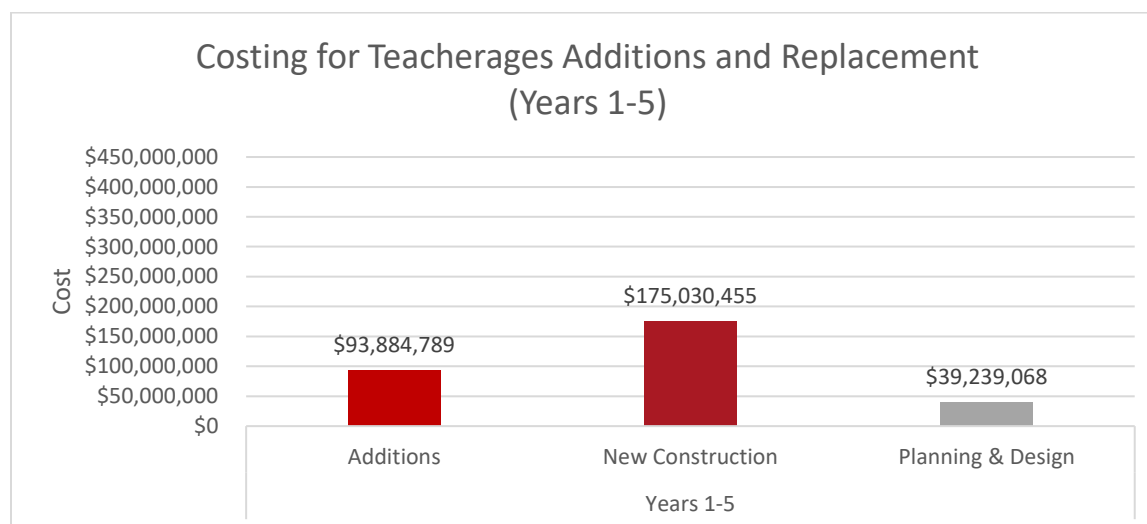


Figure 5.16: Years 1-5 Capital Cost Requirement for Teacherages

5.2.3 Years 6 to 10

In this section, the needs of the teacherages for years 6 to 10 are presented, and the costing associated with both additions and new construction is calculated. The following data illustrates the costing needs for all 1227 teacherages in years 6 to 10, to expand existing teacherages or replace aged teacherages to meet the floor area requirements of the Level of Service Standards and Management of Teacherages on Reserve guidelines based on the projected nominal roll.

The data below illustrates that the capital needs in years 6 to 10 for these teacherages is significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.14 illustrates that the cost for new construction is higher than the costs for required additions in years 6 to 10. Requirements for teacherage replacement considered the age of each facility as well the reported estimated remaining life from the most recent ACRS inspection.

Table 5.16: Years 6-10 Capital Cost Requirement for Teacherages

Phase	Type	Costing
Years 6-10	Additions	\$123,521,655
	New Construction	\$160,768,978
	Planning & Design	\$40,395,732

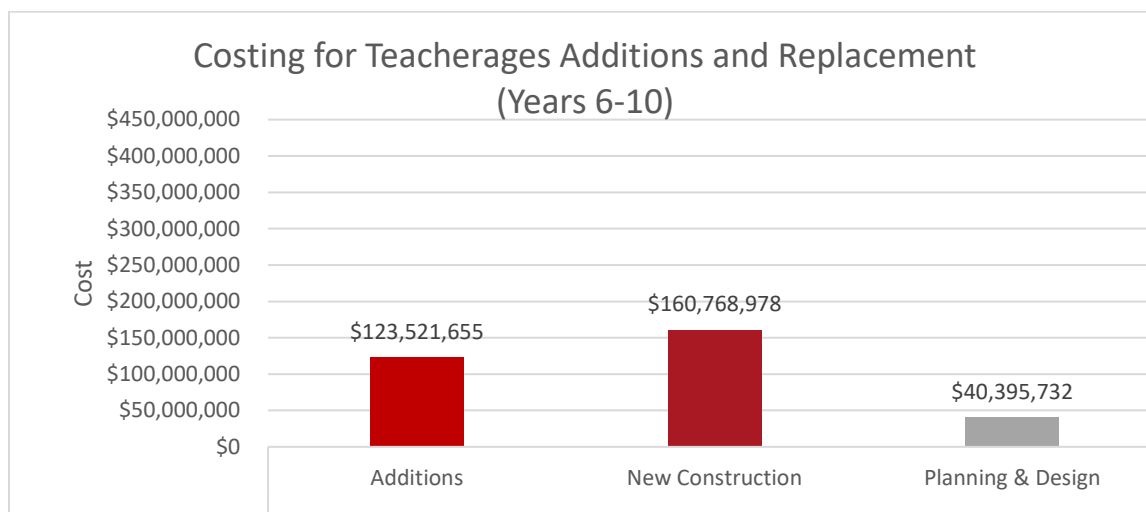


Figure 5.17: Years 6-10 Capital Cost Requirement for Teacherages

Years 11 to 15

5.2.4 In this section the needs of the teacherages for years 11 to 15 are presented, and the costing associated with both additions and new construction is calculated. The following data illustrates the costing needs for teacherages in years 11 to 15, to expand existing teacherages or replace aged teacherages to meet the floor area requirements of the Level of Service Standards and Management of Teacherages on Reserve guidelines based on the projected nominal roll.

The data below illustrates that the capital needs in years 11 to 15 for these teacherages is significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.15 illustrates that the cost for new construction is higher than the costs for required additions in years 11 to 15. Requirements for teacherage replacement considered the age of each facility as well the reported estimated remaining life from the most recent ACRS inspection.

Table 5.17: Years 11-15 Capital Cost Requirement for Teacherages

Phase	Type	Costing
Years 11-15	Additions	\$145,434,306
	New Construction	\$102,544,858
	Planning & Design	\$35,702,661

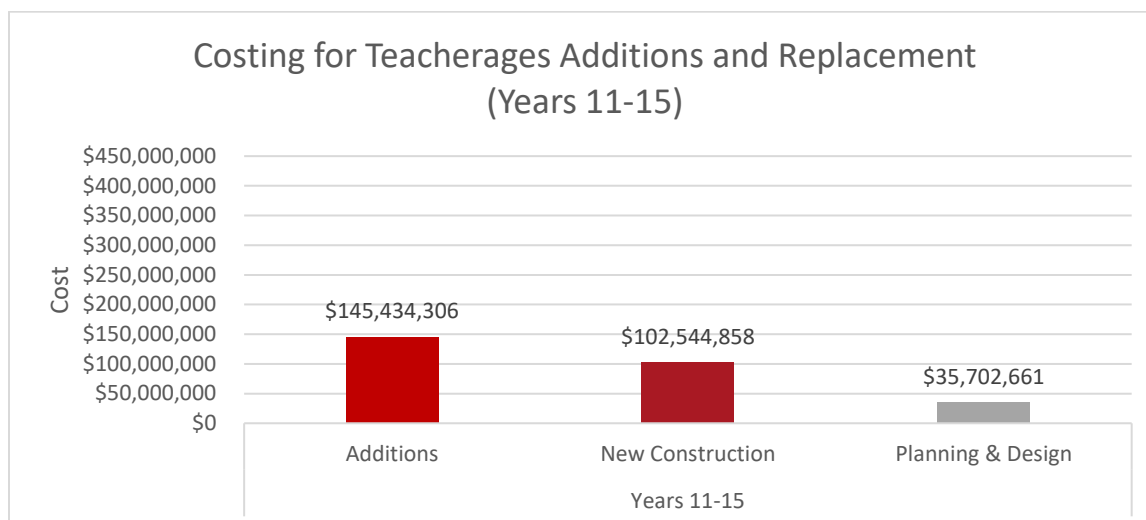


Figure 5.18: Years 11-15 Capital Cost Requirement for Teacherages

Years 16 to 20

5.2.5 In this section the needs of the teacherages for years 16 to 20 are presented, and the cost associated with both additions and new construction is calculated. The following data illustrates the costing needs for all 1227 teacherages in years 16 to 20, to expand existing teacherages or replace aged teacherages to meet the floor area requirements of the Level of Service Standards and Management of Teacherages on Reserve guidelines based on the projected nominal roll.

The data below illustrates that the capital needs in years 16 to 20 for these teacherages is significant, due to many of the existing buildings either requiring replacement or being eligible for additional space. The data in Figure 5.16 illustrates that the cost for new construction is higher than the costs for required additions in years 16 to 20. Requirements for teacherage replacement considered the age of each facility as well the reported estimated remaining life from the most recent ACRS inspection.

Table 5.18: Years 16-20 Capital Cost Requirement for Teacherages

Phase	Type	Costing
Years 16-20	Additions	\$168,350,517
	New Construction	\$74,198,576
	Planning & Design	\$34,962,711

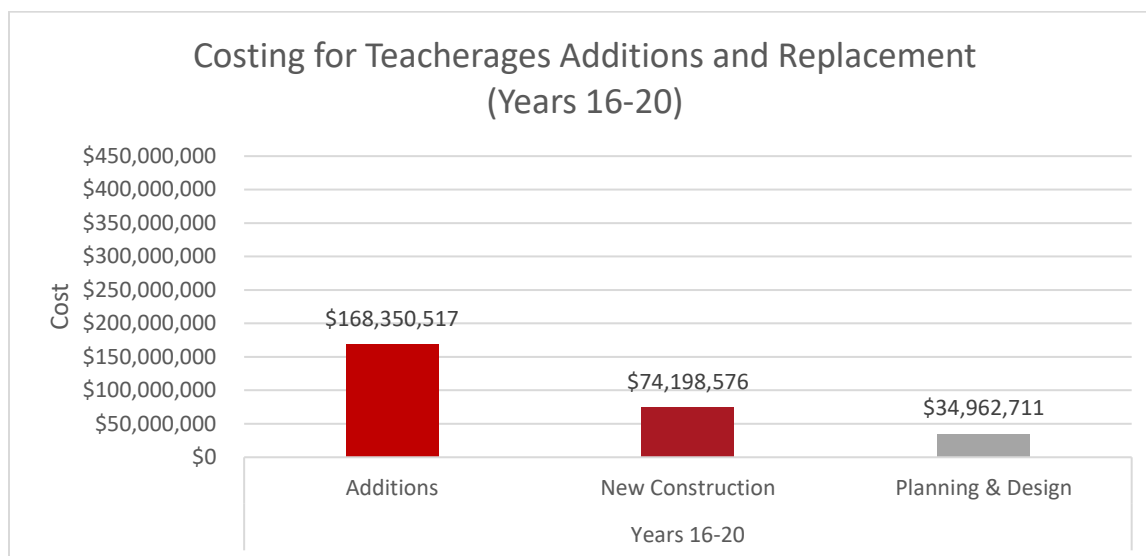


Figure 5.19: Years 16-20 Capital Cost Requirement for Teacherages

Teacherages Summary

5.2.6 This section provides a summary of additions and new construction costs for teacherages in all phases, including immediate needs, as well as capital needs for years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20 phases. The total capital costs for teacherages was determined to be \$2,195,579,715 taking into consideration the space a teacherage was eligible for, what zone the teacherage was located, as well as a 2% inflation of construction costs over each year of the planning period. The results illustrated in Figure 5.17 below show that the immediate needs of all teacherages are extensive, and both additions and new construction are required. It was assumed that a certain number of teachers would be required to serve a given enrolment value, and thus, in year 20, a total of approximately 2110 teacherages would be necessary, with a total floor area of **approximately 252,435 m²**.



Table 5.19: Total Capital Cost Requirement for Teacherages

Phase	Type	Costing
Immediate	Additions	\$367,737,443
	New Construction	\$507,810,102
	Planning & Design	\$125,997,864
Years 1-5	Additions	\$93,884,789
	New Construction	\$175,030,455
	Planning & Design	\$39,239,068
Years 6-10	Additions	\$123,521,655
	New Construction	\$160,768,978
	Planning & Design	\$40,395,732
Years 11-15	Additions	\$145,434,306
	New Construction	\$102,544,858
	Planning & Design	\$35,702,661
Years 16-20	Additions	\$168,350,517
	New Construction	\$74,198,576
	Planning & Design	\$34,962,711
Total - All Years	All Types	\$2,195,579,715

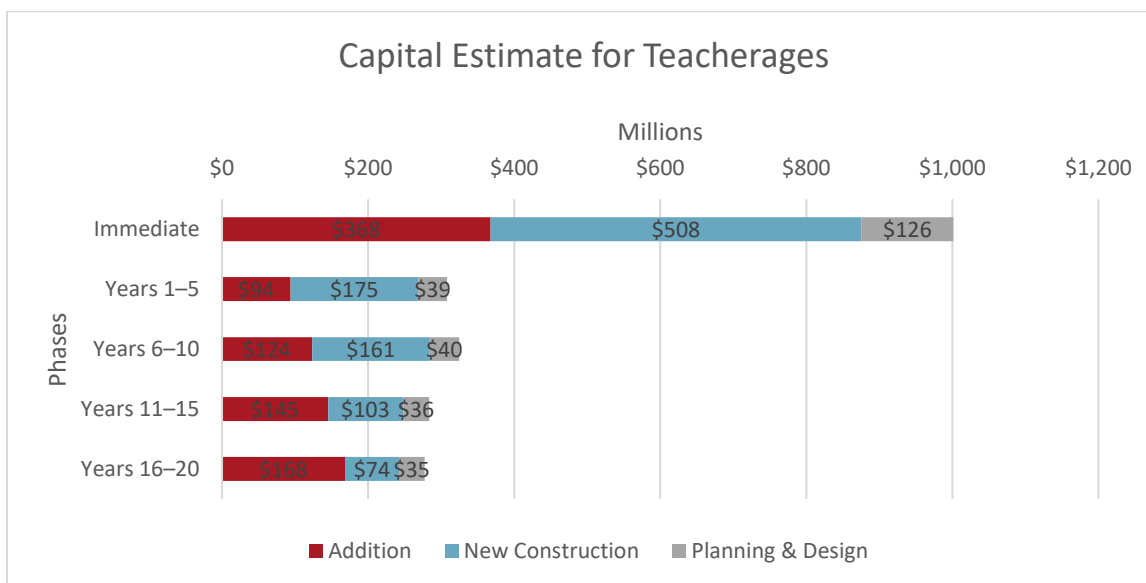


Figure 5.20: Total Capital Cost Requirement for Teacherages



In the immediate term, eighty-five (85) First Nations qualify for additional teacherages in order to meet the ISC standards concerning teacherages on reserve, and hundred (100) First Nations have one or more of existing teacherages which qualify for immediate replacement based on the facility age and/or reported condition. This information can be broken down further as follows:

- Among Zone 1 First Nations, 1 First Nation requires additional teacherages in year 0 (in total 483 m² of additional teacherage space)
- Among Zone 2 First Nations, 47 First Nations require additional teacherages in year 0 (in total 33,929 m² of additional teacherage space)
- Among Zone 3 First Nations, 2 First Nation requires additional teacherages in year 0 (in total 494 m² of additional teacherage space)
- Among Zone 4 First Nations, 35 First Nations require additional teacherages in year 0 (in total 25,605 m² of additional teacherage space)
- Among Zone 1 First Nations, 2 First Nations require replacement of one or more existing teacherages in year 0 (in total 503 m² of new construction to replace aged facilities)
- Among Zone 2 First Nations, 45 First Nations require replacement of one or more existing teacherages in year 0 (in total 34,682 m² of new construction to replace aged facilities)
- Among Zone 3 First Nations, 7 First Nations require replacement of one or more existing teacherages in year 0 (in total 4770 m² of new construction to replace aged facilities)
- Among Zone 4 First Nations, 46 First Nations require replacement of one or more existing teacherages in year 0 (in total 38,832 m² of new construction to replace aged facilities)

5.2.7

Teacherage Costing Summary by Zone

This section illustrates the capital needs of teacherages associated with their zone, for both new construction and additions, and the resulting costs for these upgrades. The results are shown separately by phase including immediate needs (year 0), as well as needs for years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20.



5.2.7.1 Immediate Needs

The following data illustrates the total cost for both additions and new construction in year 0 in relation to the corresponding zone. Figure 5.18 presents the immediate capital needs for teacherages across all zones.

Table 5.20: Immediate Capital Cost Requirement by Zone for Teacherages

Immediate		
Zone Number	Type	Costing
Zone 1	Additions	\$1,903,412
	New Construction	\$2,147,916
	Planning & Design	\$603,362
Zone 2	Additions	\$156,832,559
	New Construction	\$163,065,387
	Planning & Design	\$44,982,228
Zone 3	Additions	\$3,283,465
	New Construction	\$30,792,481
	Planning & Design	\$4,984,893
Zone 4	Additions	\$205,718,007
	New Construction	\$311,804,318
	Planning & Design	\$75,427,381
Total - All Zones	All Types	\$1,001,545,409

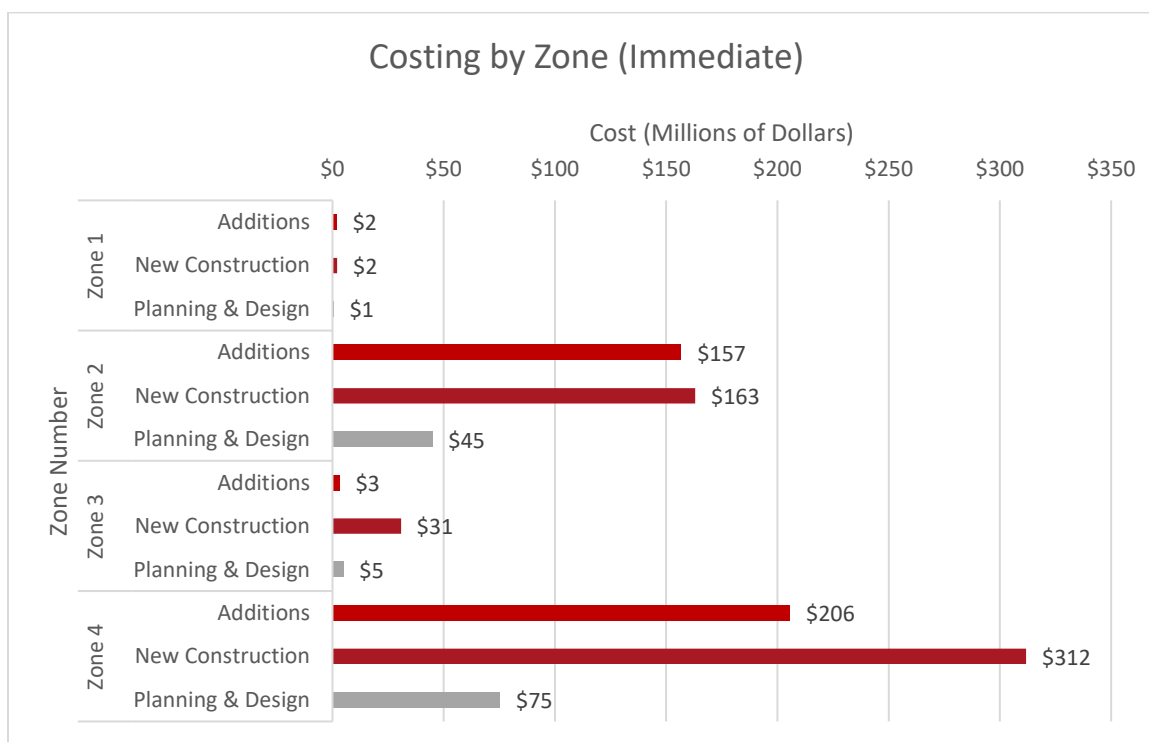


Figure 5.21: Immediate Capital Cost Requirement by Zone for Teacherages



5.2.7.2 Years 1 to 5

The following data illustrates the total costing for both additions and new construction in years 1 to 5 in relation to the corresponding zone. Figure 5.19 presents the capital needs for teacherages across all zones.

Table 5.21: Years 1-5 Capital Cost Requirement by Zone for Teacherages

Years 1-5		
Zone Number	Type	Costing
Zone 1	Additions	\$435,458
	New Construction	\$2,242,884
	Planning & Design	\$388,154
Zone 2	Additions	\$39,979,668
	New Construction	\$73,931,376
	Planning & Design	\$16,006,415
Zone 3	Additions	\$733,403
	New Construction	\$20,769,364
	Planning & Design	\$3,177,372
Zone 4	Additions	\$52,736,260
	New Construction	\$78,086,831
	Planning & Design	\$19,667,127
Total - All Zones	All Types	\$308,154,311

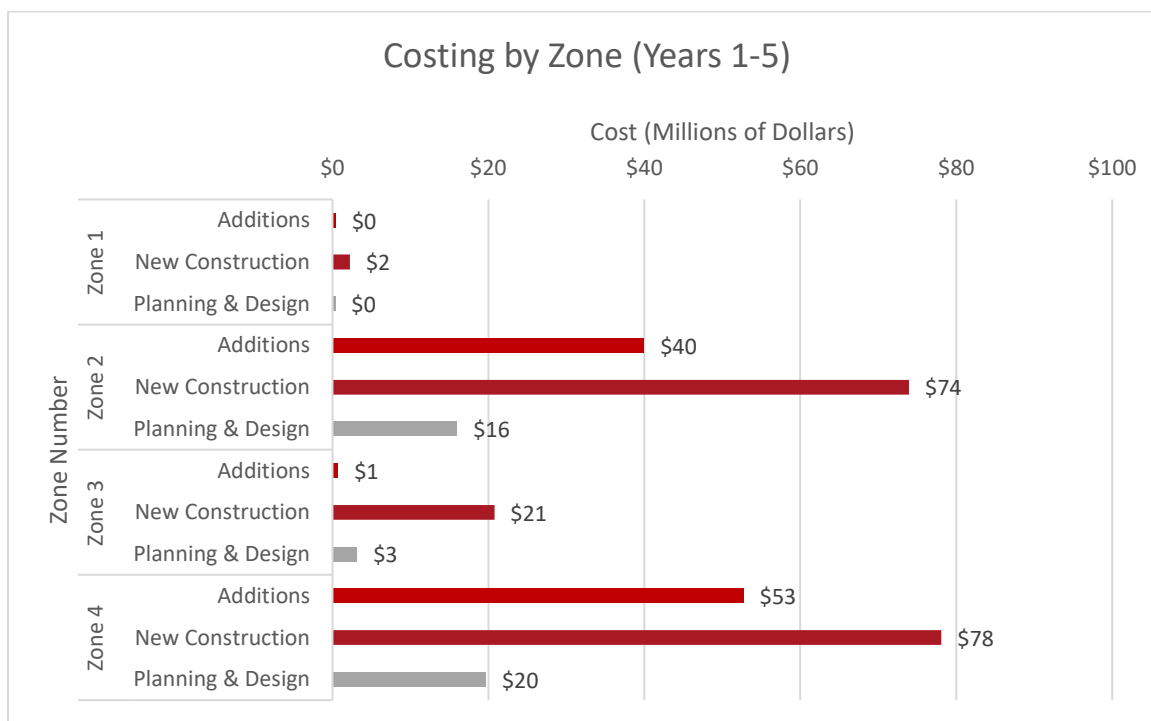


Figure 5.22: Year 1-5 Capital Cost Requirement by Zone for Teacherages



5.2.7.3 Years 6 to 10

The following data illustrates the total costing for both additions and new construction in years 6 to 10 in relation to the corresponding zone. Figure 5.20 presents the capital needs for teacherages across all zones.

Table 5.22: Years 6-10 Capital Cost Requirement by Zone for Teacherages

Years 6-10		
Zone Number	Type	Costing
Zone 1	Additions	\$480,781
	New Construction	\$2,051,011
	Planning & Design	\$360,780
Zone 2	Additions	\$51,971,653
	New Construction	\$60,555,326
	Planning & Design	\$15,675,282
Zone 3	Additions	\$3,987,457
	New Construction	\$8,896,895
	Planning & Design	\$1,856,589
Zone 4	Additions	\$67,081,764
	New Construction	\$89,265,746
	Planning & Design	\$22,503,081
Total - All Zones	All Types	\$324,686,366

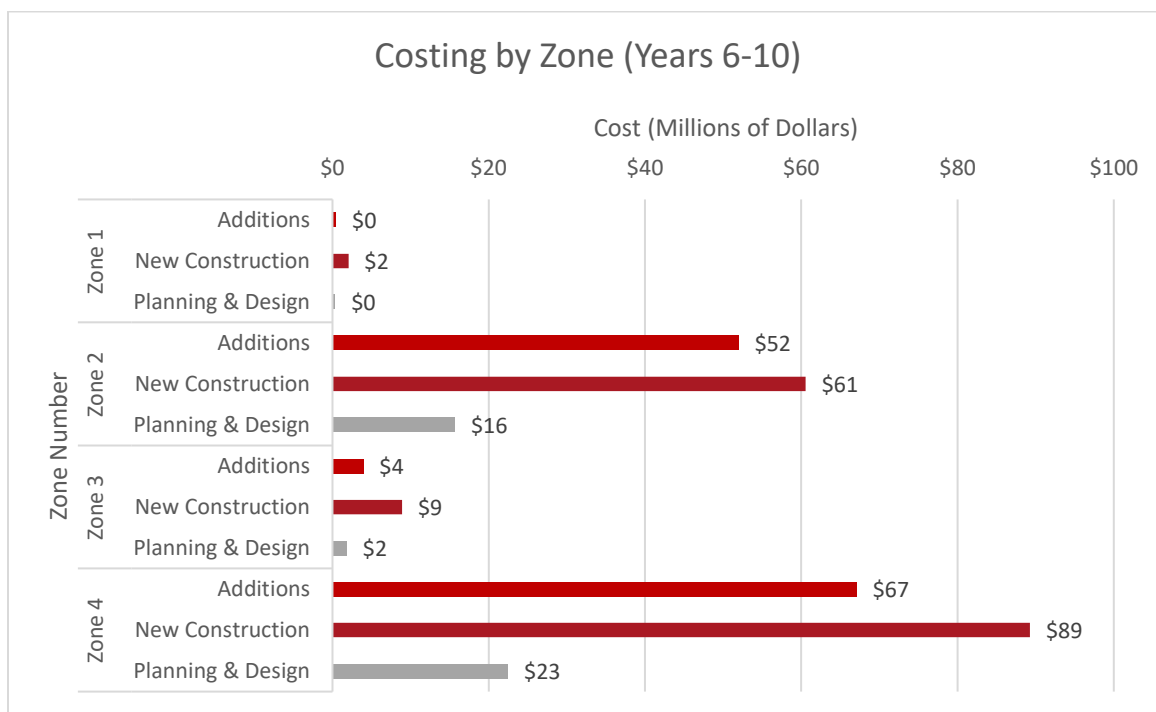


Figure 5.23: Years 6-10 Capital Cost Requirement by Zone for Teacherages



5.2.7.4 Years 11 to 15

The following data illustrates the total costing for both additions and new construction in years 11 to 15 in relation to the corresponding zone. Figure 5.21 presents the capital needs for teacherages across all zones.

Table 5.23: Years 11-15 Capital Cost Requirement by Zone for Teacherages

Years 11-15		
Zone Number	Type	Costing
Zone 1	Additions	\$610,444
	New Construction	\$0
	Planning & Design	\$86,988
Zone 2	Additions	\$56,949,803
	New Construction	\$41,180,523
	Planning & Design	\$13,565,270
Zone 3	Additions	\$6,595,286
	New Construction	\$8,900,859
	Planning & Design	\$2,252,844
Zone 4	Additions	\$81,278,773
	New Construction	\$52,463,476
	Planning & Design	\$19,797,559
Total - All Zones	All Types	\$283,681,826

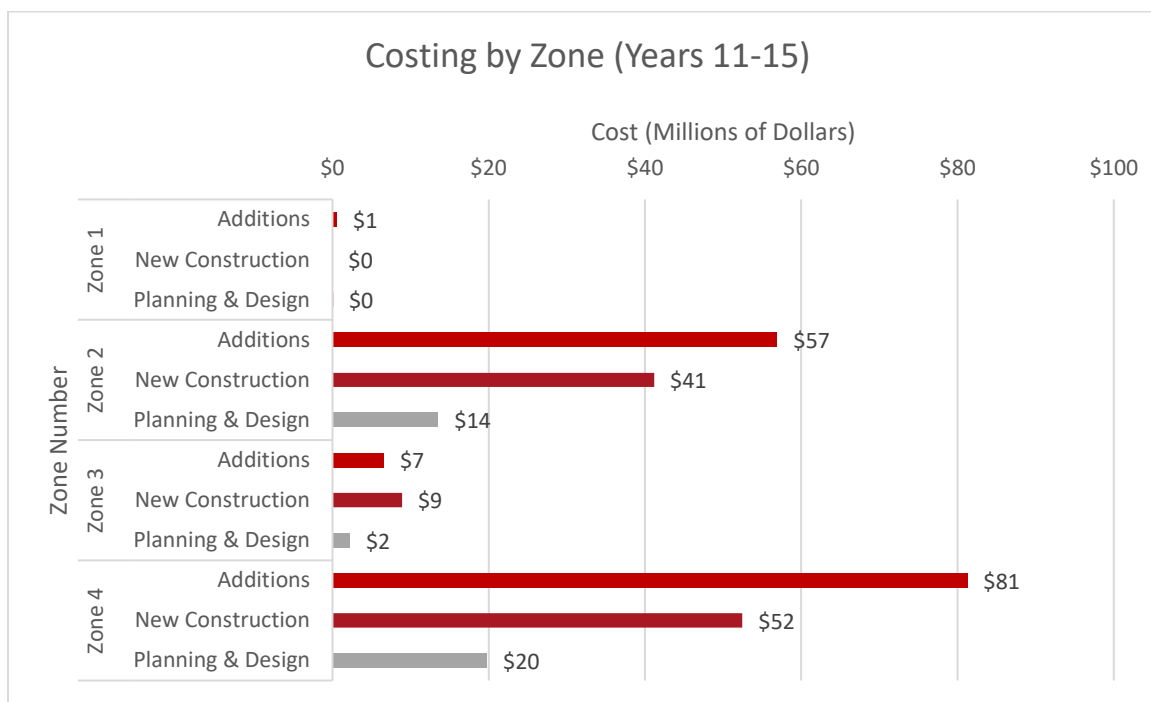


Figure 5.24: Years 11-15 Capital Cost Requirement by Zone for Teacherages



5.2.7.5 Years 16 to 20

The following data illustrates the total costing for both additions and new construction in years 16 to 20 in relation to the corresponding zone. Figure 5.22 presents the capital needs for teacherages across all zones.

Table 5.24: Years 16-20 Capital Cost Requirement by Zone for Teacherages

Years 16-20		
Zone Number	Type	Costing
Zone 1	Additions	\$0
	New Construction	\$0
	Planning & Design	\$0
Zone 2	Additions	\$64,538,695
	New Construction	\$1,604,978
	Planning & Design	\$9,278,432
Zone 3	Additions	\$5,699,998
	New Construction	\$0
	Planning & Design	\$825,711
Zone 4	Additions	\$98,111,824
	New Construction	\$72,593,599
	Planning & Design	\$24,858,568
Total - All Zones	All Types	\$277,511,804

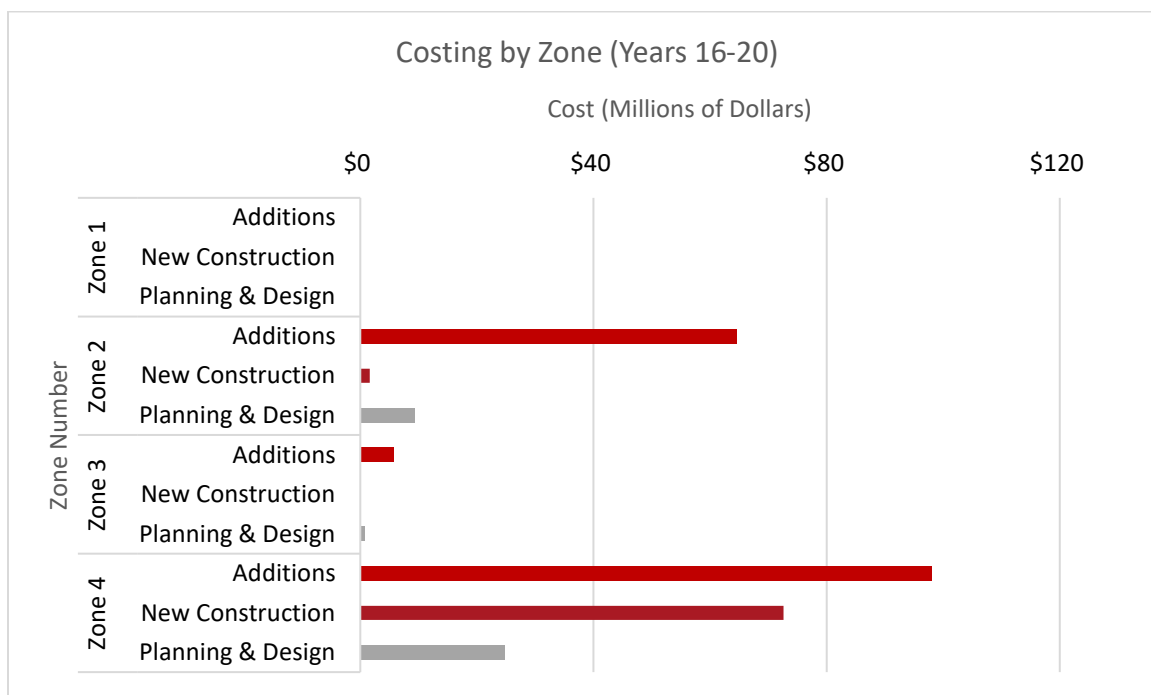


Figure 5.25: Years 16-20 Capital Cost Requirement by Zone for Teacherages



5.2.7.6 Breakdown by time for immediate to 20-year needs (Teacherages):

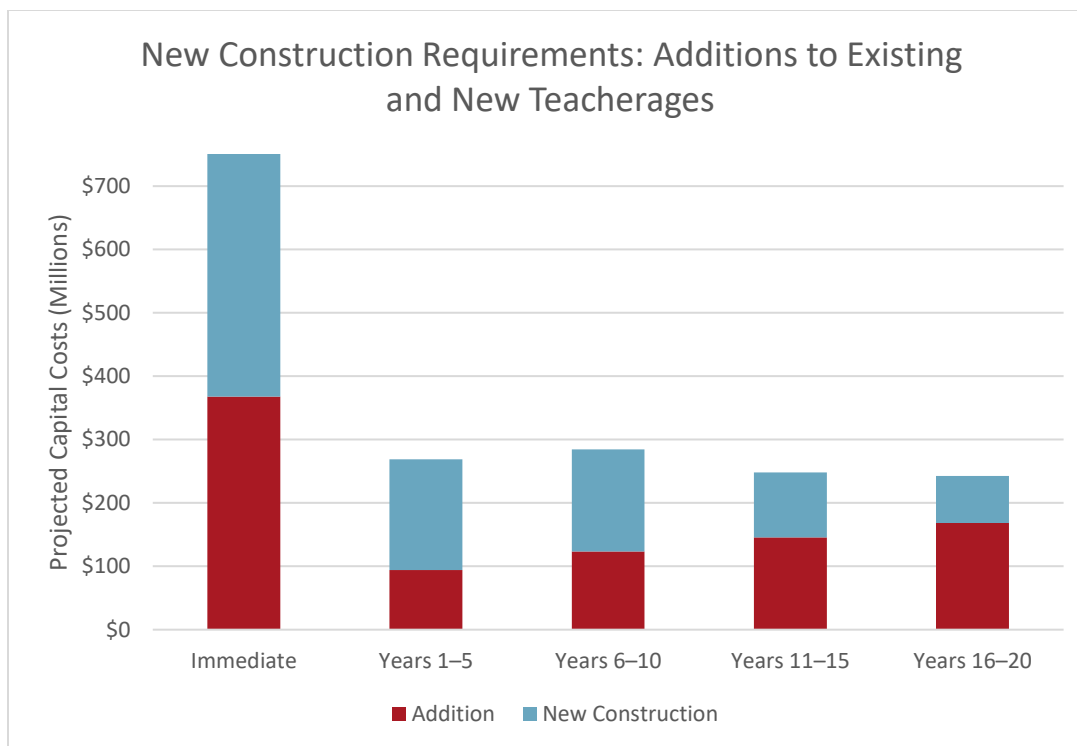


Figure 5.26: Additions to Existing and New Teacherages

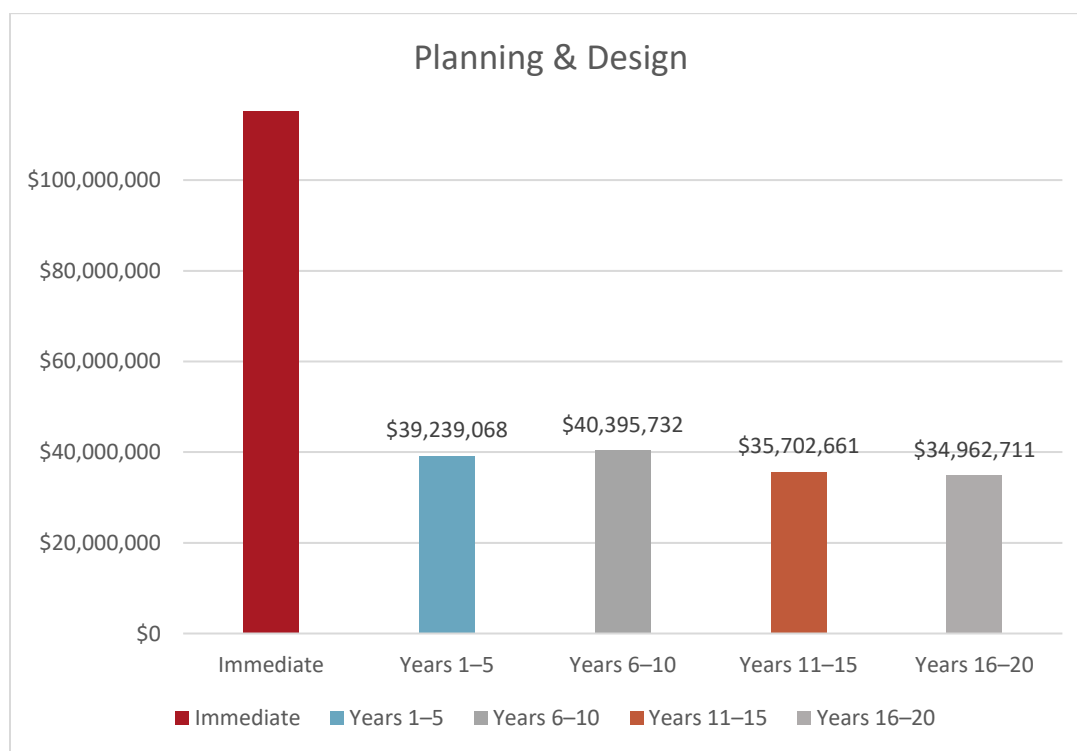


Figure 5.27: Planning and Design (P&D) for Teacherages

Breakdown of Total Capital Cost Estimates for Teachers by Region

Table 5.25 below summarizes the breakdown of estimated school capital needs across the regions of British Columbia, Ontario, Saskatchewan, Manitoba, Quebec and Atlantic, as were included in the source data for this study.

5.2.8 Table 5.25: Summary Breakdown of Capital Cost Estimates for Teacherages by Region

Region	Year 0	Year 5	Year 10	Year 15	Year 20	Total Teacherage Cost
MANITOBA	\$318,781,574	\$57,056,689	\$132,880,926	\$112,967,000	\$105,038,169	\$726,724,357
BRITISH COLUMBIA	\$80,839,637	\$20,628,459	\$16,063,141	\$15,943,899	\$13,305,009	\$146,780,146
SASKATCHEWAN	\$182,463,670	\$64,571,969	\$57,257,558	\$34,027,706	\$38,766,147	\$377,087,050
ONTARIO	\$242,927,286	\$94,313,631	\$55,898,195	\$78,220,003	\$84,083,303	\$555,442,417
QUEBEC	\$42,796,676	\$28,515,512	\$27,374,367	\$23,135,145	\$6,781,935	\$128,603,635
ALBERTA	\$124,620,472	\$41,950,808	\$26,320,057	\$16,841,887	\$26,726,045	\$236,459,269
ATLANTIC	\$9,116,096	\$1,117,243	\$8,892,121	\$2,546,186	\$2,811,195	\$24,482,842
						\$2,195,579,715

The trends presented by this data are illustrated below in Figure 5.14: Estimated Capital Needs by Region over the Planning PeriodFigure 5.28.

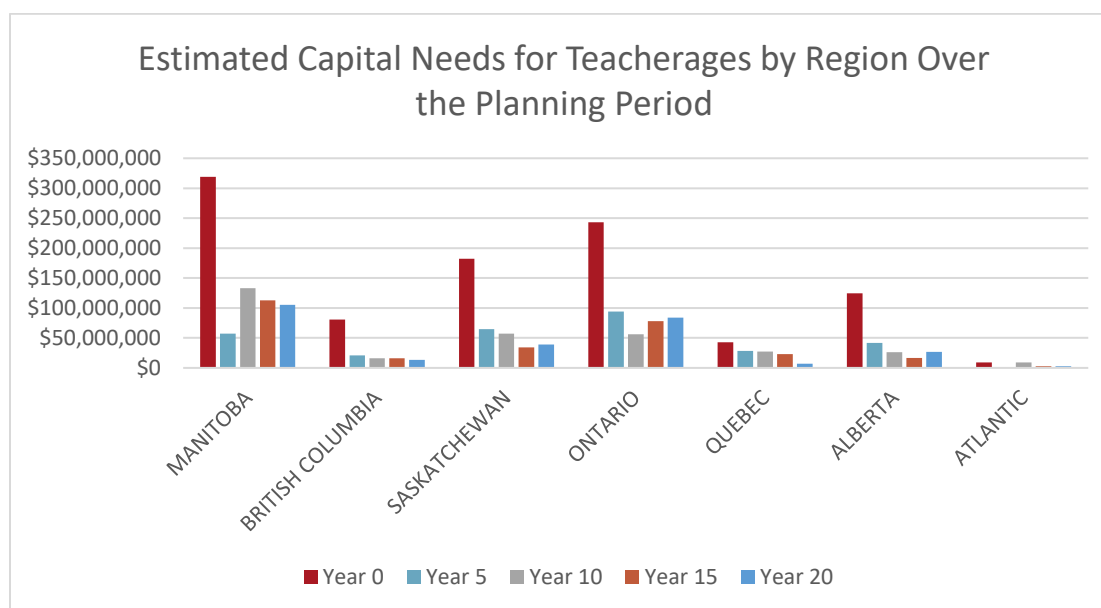


Figure 5.28: Estimated Capital Needs for Teacherages by Region over the Planning Period

5.3 Annual O&M Requirements for Schools

Using the methods outlined in Section 4, the total estimated O&M requirements for the 395 schools assessed in this report is \$418,558,090 presently. For this assessment, cost estimates have been updated to reflect the passage of time and current cost conditions, resulting in O&M cost estimates in 2025 dollars. The significant increase in total O&M needs in this update report, as compared to the previous 2022 study, is that only existing schools were reviewed in the past study, while this



examines the capital needs and estimates the amount of additional school space above the existing that is required, and the O&M has been calculated to match.

The portion of total schools classified as being in each zone is as follows:

- Zone 1 – 29%
- Zone 2 – 47%
- Zone 3 – 3%
- Zone 4 – 22%

Table 5.26: Summary of Estimated O&M Requirements for Schools in year 20

Costs (Dollars)					
	Overall	Zone 1	Zone 2	Zone 3	Zone 4
<i>Number of Facilities</i>	395	114	185	12	84
<i>Total</i>	\$518,361,667	\$88,661,975	\$179,071,458	\$14,586,683	\$236,041,549
<i>Average</i>	\$1,312,308	\$777,737	\$967,954	\$1,215,557	\$2,810,018
Gross Floor Area (m²)					
<i>Total</i>	1,294,374.3	317,678.3	626,539.8	35,408.2	314,747.9
<i>Average</i>	3,276.9	2,786.7	3,386.7	2,950.7	3,747.0
<i>Minimum</i>	615.4	615.4	615.4	726.5	615.4
<i>Maximum</i>	14,642.1	8,181.6	11,095.6	6,906.7	14,642.1

5.4 Annual O&M Requirements for Teacherages

Using the methods outlined in Section 4, the total O&M requirements for the 395 schools assessed in this report are \$ 131,684,804 currently, growing to \$183,207,815 in Years 16-20. The significant increase in total O&M needs in this update report, as compared to the previous 2022 study is the previous study only considered existing teacherage spaces, while this update examines the capital needs and estimates the amount of additional teacherage spaces above the existing that is required,



and the O&M has been calculated to match. However, this estimate only considers communities that currently have teacherages, and does not estimate the total amount of teacher lodging required on reserve for communities that currently do not offer purpose-built housing for teachers.

The portion of total teacherages classified as being in each zone is as follows:

- Zone 1 – 2%
- Zone 2 – 44%
- Zone 3 – 7%
- Zone 4 – 47%

With 114 schools located in First Nations classified as Zone 1, and the lowest unit-cost Zone 1 O&M expenses represent 17.10% of the total requirements for maintaining schools. Zone 4, with a projected 84 schools, represents 45.54% of the total O&M requirements for schools. Zone 3, with just 12 schools, represents 2.81% of total O&M requirements for schools. Zone 2 communities with a projected 185 schools required have O&M funding requirement of 34.55% of the total. The reason for the similarity in cost percentage between Zones 2 and 4, despite Zone 2 having the largest number of estimated schools required, is the escalation of costs associated with remoteness.

Table 5.27: Summary of Estimated O&M Requirements for Teacherages summarizes the analysis of estimated O&M requirements across the entire dataset, and by zone. See Appendix B - Table 4 for the full table including quartile distribution of school funding requirements.

Table 5.27: Summary of Estimated O&M Requirements for Teacherages in Year 20

Costs (Dollars)					
	Overall	Zone 1	Zone 2	Zone 3	Zone 4
<i>Estimated Number of Teacher Lodging Spaces Required</i>	2110	31	1863	205	1800
<i>Total</i>	\$183,207,815	\$809,807	\$50,999,663	\$8,100,296	\$123,298,048
<i>Average</i>	\$1,221,385	\$269,936	\$761,189	\$810,030	\$1,761,401
Gross Floor Area (m²)					
<i>Total</i>	457,227.4	3,667.3	218,456.1	24,066.1	211,037.9
<i>Average</i>	3,048.2	1,222.4	3,260.5	2,406.6	3,014.8

With only 12 teacherages located in First Nations classified as Zone 1, and the lowest unit-cost Zone 1 O&M expenses represent just 0.44% of the total requirements for maintaining teacherages. Zone 4, with a projected 1800, represents 67.30% of the total O&M requirements for teacherages. Zone 3, with just 205 teacherages, represents 4.42% of total O&M requirements for teacherages. Zone 2 communities with a projected 1863 teacherages required have O&M funding requirement of 27.84% of the total. The reason for the difference in costing between Zones 2 and 4, despite Zone 2 having the largest number of estimated teacherages required is the escalation of costs associated with remoteness.

5.5 O&M Costs for Schools and Teacherages 0-20 years:

The O&M costing needs for all 395 on-reserve First Nation schools are calculated in accordance with the 2023 School Space Accommodation Standards (SSAS) by using projected enrolment data over the twenty-year planning period.

Figure 5.29 represents the total projected Operations and Maintenance (O&M) costs for on-reserve schools over a 20-year planning period, expressed in millions of 2025 Canadian dollars.

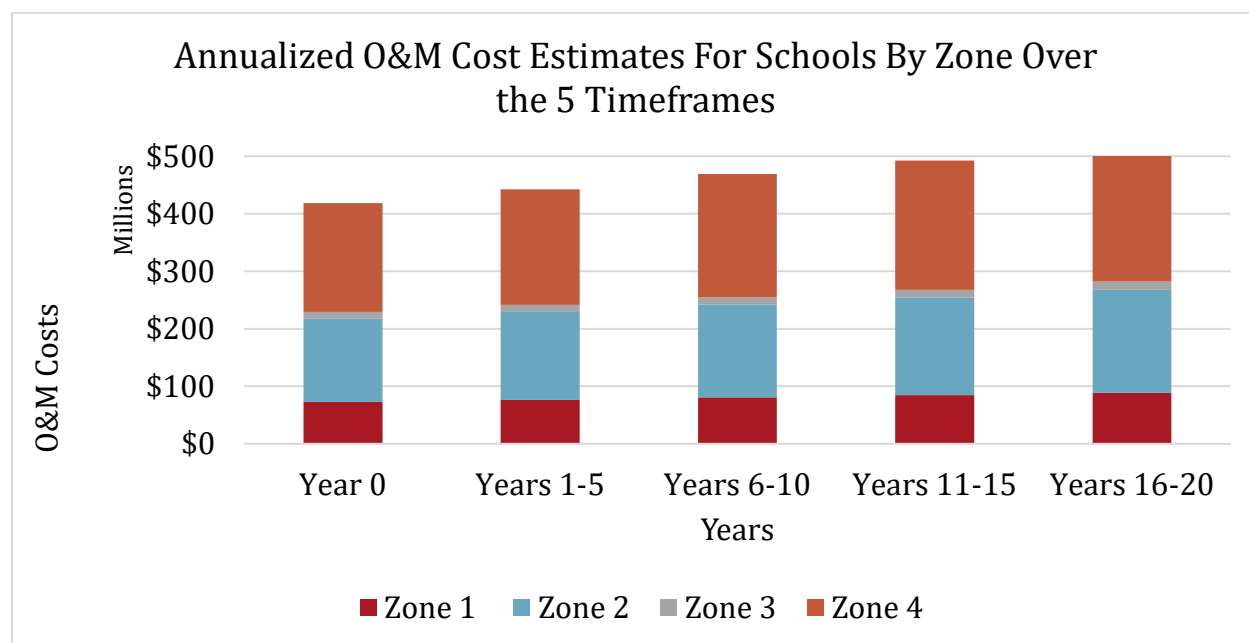


Figure 5.29: Operations and Maintenance (O&M) Costs for Schools vs Year by Zone

The Year 0 O&M cost across all zones is approximately \$418.6 million. This increases to approximately \$442.5 million annually between years 1–5. Costs then increase steadily throughout the planning period to approximately 518.4 million per year between years 16-20.

Across all periods, Zone 2 and Zone 4 account for the largest share of projected costs, reflecting the number of facilities and associated operational requirements in those regions. Zone 1 and Zone 3 contribute comparatively smaller shares of total expenditure.



The upward trend over time reflects increases in eligible facility space and associated operational requirements over the planning horizon.

Table 5.27 and Figure 5.30 illustrate the distribution of the O&M cost for the schools over the 0-20 year planning period by regions, expressed in 2025 Canadian dollars.

Table 5.28: Regional Breakdown of O&M Costs for Schools By Timeframe (2025 Constant Dollars)

Region	Timeframe				
	Year 0	Years 1-5	Years 6-10	Years 11-15	Years 16-20
Alberta	\$61,782,769	\$65,555,121	\$69,238,656	\$72,878,640	\$76,483,582
Atlantic	\$8,959,655	\$9,508,818	\$10,068,457	\$10,303,444	\$10,789,878
British Columbia	\$43,538,118	\$46,065,571	\$48,722,543	\$50,792,445	\$53,807,112
Manitoba	\$103,551,226	\$109,417,554	\$115,500,069	\$121,460,777	\$127,342,537
Ontario	\$86,257,455	\$91,269,655	\$97,798,113	\$102,686,970	\$107,888,950
Quebec	\$31,489,749	\$33,217,966	\$35,132,168	\$37,136,569	\$38,863,775
Saskatchewan	\$82,979,118	\$87,453,659	\$92,594,501	\$97,561,441	\$103,185,832
Total	\$418,558,090	\$442,488,345	\$469,054,507	\$492,820,286	\$518,361,667

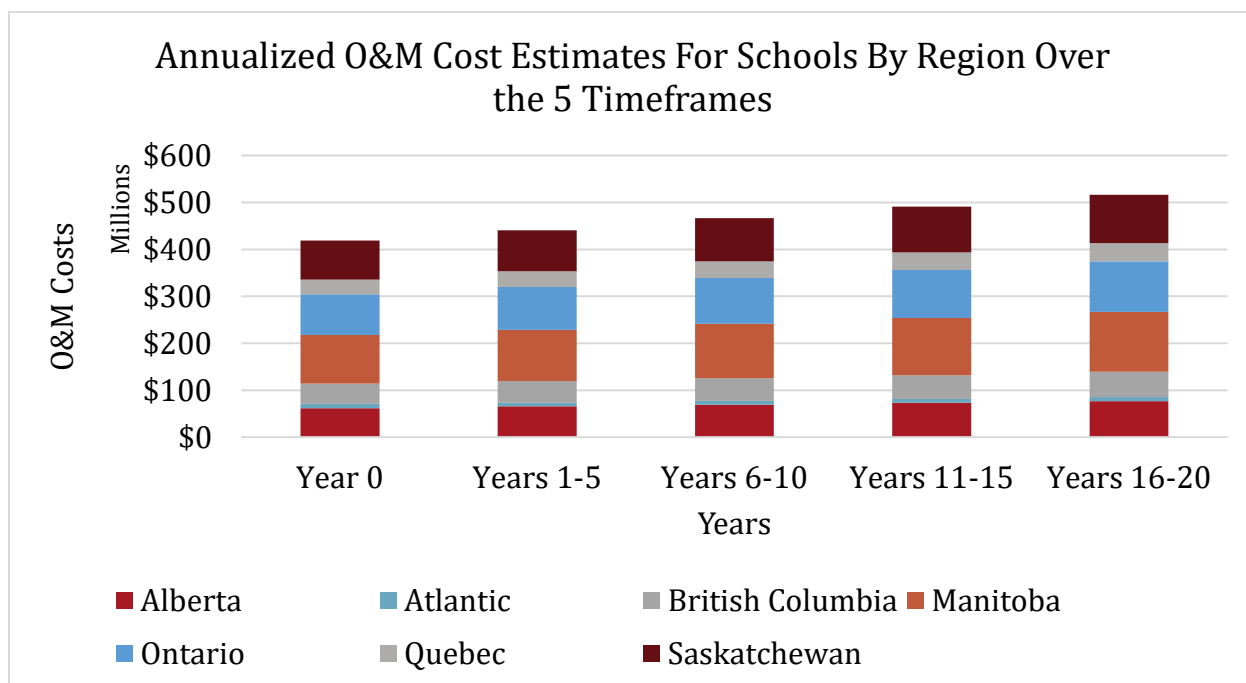


Figure 5.30: Operations and Maintenance (O&M) Costs for Schools vs Year by Region

Figure 5.33 illustrates the distribution of the O&M cost for the schools over the 0-20 year planning period by regions, expressed in millions of 2025 Canadian dollars.



The Year 0 O&M cost across all zones is approximately \$418.6 million. This increases to nearly \$442.5 million annually between years 1–5. Costs then increase steadily throughout the planning period to approximately \$518.4 million per year between years 16–20.

Manitoba and Ontario account for the largest share of total projected costs throughout the period, reflecting the scale of facilities and associated operational requirements in those provinces. Saskatchewan and Alberta also represent substantial portions of the total, while British Columbia and Quebec contribute moderately. The Atlantic region accounts for the smallest share of projected expenditure.

The upward trend over time reflects increases in eligible facility space and associated operational requirements over the planning horizon.

Teacherages:

Figure 5.31 represents the total projected Operations and Maintenance (O&M) costs for on-reserve teacherages over a 20-year planning period, expressed in millions of 2025 Canadian dollars. As previously noted, when compared with the 2022 AFN Education Infrastructure O&M Needs Assessment, which did not assess additional capital needs, it estimated the realistic O&M needs of existing teacherages only, and did not estimate the additional space requirements for teacherages.

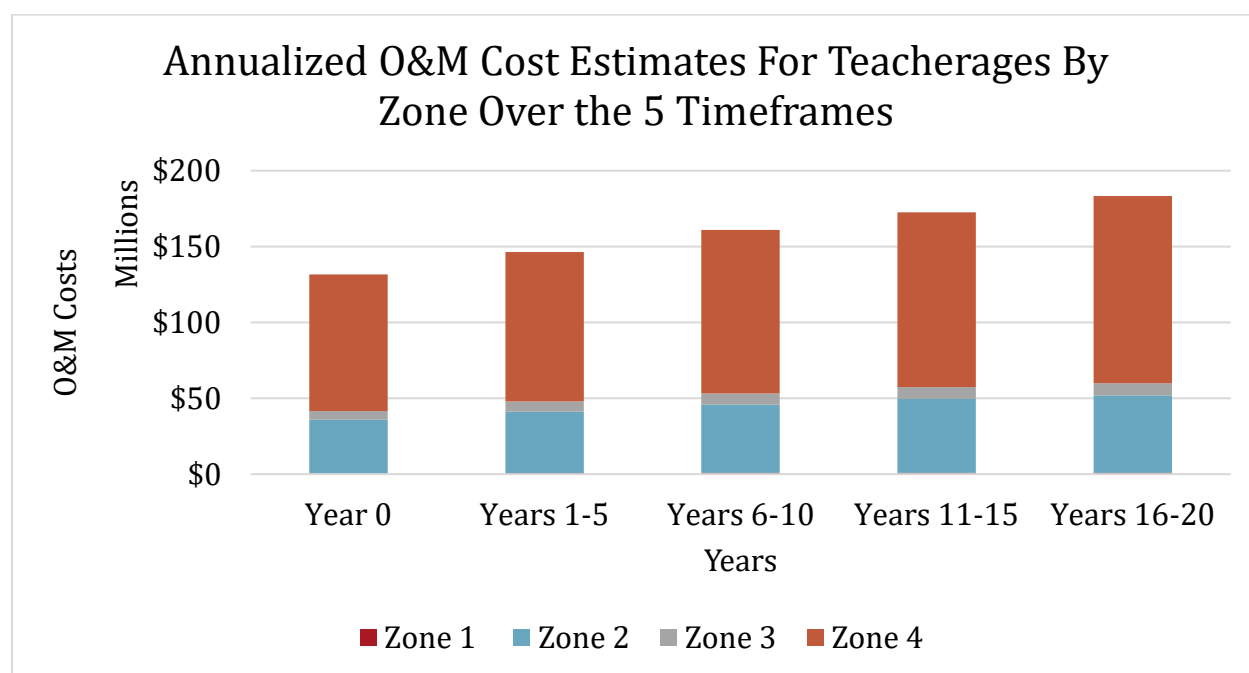


Figure 5.31 Operations and Maintenance (O&M) Costs for Teacherages vs Year by Zone

The total O&M costs across all zones are estimated at approximately \$131.7 million in Year 0. Annual costs increase to approximately \$146.3 million during Years 1–5 and continue to grow progressively throughout the planning period, reaching approximately \$183.2 million by Years 16–20.



Across all periods, Zone 2 and Zone 4 account for the largest share of projected costs, reflecting the number of facilities and associated operational requirements in those regions. Zone 1 and Zone 3 contribute comparatively smaller shares of total expenditure.

The upward trend over time reflects increases in eligible facility space and associated operational requirements over the planning horizon.

Table 5.28 and Figure 5.32 show the distribution of the O&M costs over a period of 0-20 years for the on-reserve teacherages by regions, expressed in 2025 Canadian dollars.

Table 5.29: Regional Breakdown of O&M Costs for Teacherages By Timeframe (2025 Constant Dollars)

Region/Year	Timeframe				
	Year 0	Years 1-5	Years 6-10	Years 11-15	Years 16-20
Alberta	\$14,455,456	\$16,270,208	\$17,412,591	\$17,989,972	\$18,939,453
Atlantic	\$1,427,344	\$1,494,100	\$1,977,119	\$2,102,100	\$2,227,356
British Columbia	\$10,573,470	\$11,568,785	\$12,341,915	\$13,037,711	\$13,542,175
Manitoba	\$40,335,254	\$43,290,363	\$49,742,169	\$54,406,914	\$58,793,844
Ontario	\$37,841,667	\$42,644,349	\$45,227,418	\$48,540,869	\$51,725,264
Quebec	\$9,000,766	\$10,270,088	\$11,318,282	\$12,126,709	\$12,339,663
Saskatchewan	\$18,050,849	\$20,750,710	\$23,002,524	\$24,236,691	\$25,640,060
Total	\$131,684,804	\$146,288,602	\$161,022,018	\$172,440,965	\$183,207,814

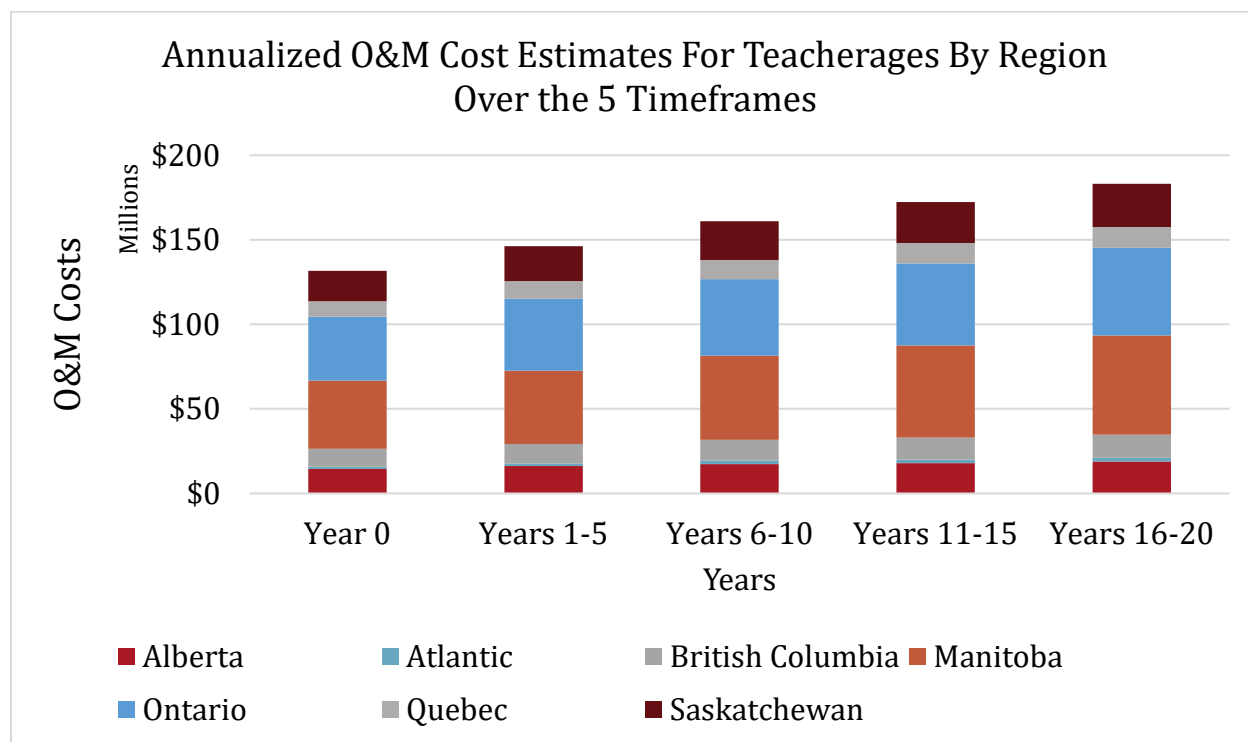


Figure 5.32: Operations and Maintenance (O&M) Costs for Teacherages vs Year by Region

The total O&M costs across all zones are estimated at approximately \$131.7 million in Year 0. Annual costs increase to approximately \$146.3 million during Years 1–5 and continue to grow progressively throughout the planning period, reaching approximately \$183.2 million by Years 16–20.

Manitoba and Ontario account for the largest share of projected costs throughout the period, reflecting the relative scale of teacherage assets in those regions. Saskatchewan and Alberta also contribute notable portions of total expenditures, while British Columbia and Quebec represent moderate shares. The Atlantic region accounts for the smallest share of projected costs.

The upward trend over time reflects increases in eligible facility space and associated operational requirements over the planning horizon.



6.0 Conclusion

6.1 School Capital Costs

A capital cost estimate was developed for on-reserve First Nation school facilities across Canada using the 2023 SSAS guidelines with projected enrolment data and using the tenth year of occupancy to determine eligible space. The enrolment projections are based on the calculated 2025 nominal roll and a projected growth rate of 1.75% per year. The total school capital estimate for the immediate, years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20 phases was determined to be \$16,829,531,362 over the 20-year planning period. This value was calculated taking into consideration the space a school was eligible for, what zone the school was located in, as well as an estimated 2% inflation rate of construction costs over the planning period. An increased escalation factor was used to account for the significantly higher inflation seen in the construction industry between 2020 and 2023.

6.2 Teacherage Capital Costs

A capital cost estimate was developed for teacherages using the Level of Service Standards and Management of Teacherages on Reserve guidelines with the projected enrolment data. The enrolment data is estimated based on the calculated 2025 nominal roll and a projected growth rate of 1.75% per year. This total teacherage capital cost estimate for the immediate, years 1 to 5, years 6 to 10, years 11 to 15, and years 16 to 20 phases was determined to be \$2,195,579,715 over the 20-year planning period. This value was calculated taking into consideration the teacherage floor space requirement each First Nation was eligible for, what zone the community was located, as well as an estimated 2% inflation rate of construction costs. Similar to school construction, and increased inflation factor was used between 2020 and 2023 to reflect the significantly higher inflation seen during that period in construction costs.

6.3 2023 School Space Accommodation Standards

The results contained within this report are calculated in accordance with the guidelines of the 2023 School Space Accommodation Standards. The 2023 SSAS does incorporate planning based on the projected 10th year of occupancy. We recognize that the SSAS is an evergreen document. The spreadsheets prepared by FNESL for this analysis have been developed to facilitate a future update of these results as efficiently as possible, should future versions of the SSAS necessitate this.

6.4 Operation and Maintenance (O&M)

An estimate of Operations and Maintenance (O&M) costs for on-reserve First Nations schools and teacherages across Canada was developed using the 2023 School Space Accommodation Standards (SSAS) and projected enrolment data over the 20-year planning period. The total estimated O&M cost for schools is projected to increase from approximately \$418.6 million in Year 0 to nearly \$442.5 million during Years 1–5, continuing to grow steadily to approximately \$518.4 million annually by Years 16–20. Similarly, O&M costs for teacherages are estimated at approximately \$131.7 million in Year 0, increasing to nearly \$146.3 million during Years 1–5, and reaching approximately \$183.2 million by Years 16–20. These projections reflect increases in eligible facility space and associated operational requirements over the planning horizon and highlight the ongoing operational funding required to maintain education infrastructure in First Nations communities across Canada.



6.5 Asset Management Planning

When considering replacement of existing infrastructure within a First Nation, such as a school or teacherage, it is important to consider Asset Management Planning (AMP). It is crucial to maintain an AMP lens in any infrastructure analysis, and to recognize the ways in which education infrastructure is interconnected with other community infrastructure, including water, wastewater, internet and more.

7.0 Limitations of Report

7.1 Capital Cost Estimation Limitations

As described above, this report followed the Indigenous Services Canada current School Space Accommodation Standards (using the 10th year of occupancy) to calculate eligible floor space and outdoor learning areas for each First Nation school included in the dataset. It is therefore worth stating (or restating) some limitations of the findings of this report regarding the capital needs of education infrastructure:

- The findings are for the 395 operating schools included in the dataset. The capital needs of federal schools, private schools, schools in self-governing First Nations communities, and schools whose education programming is delivered by the province are not addressed in this analysis.
- This needs assessment assumed that the same grades currently offered by schools would continue to be offered over the planning period. The capital costs contained in this report, therefore, do not include the provision of adequate education facilities for all students on reserve, as many existing schools, particularly in northern and remote First Nations, do not provide education up to grade 12.
- While the study does assume additional teacherage space is needed in the First Nations identified as having teacherages, it does not address the needs of communities which may need purpose-built teacher lodgings but do not currently have them.
- Schools and teacherages rely on supporting infrastructure to function, including suitable land area, water servicing, wastewater servicing, electrical supply systems, solid waste management systems, and connectivity infrastructure. The availability of supporting infrastructure and the cost to improve these infrastructure categories are excluded from this report.
- The costs reflected in this report do not include equipment and furnishing costs, including specialized equipment that may be required to support students with special needs, such as assistive devices and sensory equipment.
- The unit costs used for various zones used in this analysis are estimates based on current Indigenous Services Canada formulas, as well as a limited sample of tender cost data. Further investigation is warranted into the appropriate zone multipliers to use to account for



escalating costs associated with remoteness. Costs associated with remoteness, isolation, and school size may be higher than the estimates captured here.

- The infrastructure requirements to support students with special needs are not adequately represented in this analysis. As reported in the *AFN High-Cost Special Education (HCSE) Program Review* [29], regional discussions have identified the lack of dedicated space and equipment for HCSE students.
 - Required renovations to existing facilities to meet accessibility standards have not been identified or quantified in this report, including structural adaptations (such as ramps, lifts, remote door openers) that remove or reduce physical barriers for an individual with a disability.
 - Many students with special needs require one-to-one assistance, which for some can be accommodated with sufficient space in the classroom, and for others may necessitate a separate quiet space. This assessment has not confirmed whether calculated floor areas are sufficient to accommodate this space.
 - An important infrastructure requirement for some students with special needs is a safe space that reduces sensory stimulation. This assessment has not confirmed whether calculated floor areas are sufficient to accommodate this space.
 - A significant challenge for students with special needs is access to allied health professionals, including psychologists, speech-language pathologists, occupational therapists, etc. This needs assessment has not confirmed whether calculated floor areas are sufficient to accommodate these professionals, including providing sufficient office space.
 - When considering the potential allocation of Gross Floor Area to the functions mentioned above, it is important to note that a clearly expressed need has been to protect and restrict funding generated by special education to be used only for special education [29].
- Some students with special needs may be unable to attend school full-time and may have infrastructure needs to support their learning in the home environment. This assessment has not included determination of the capital costs associated with ensuring adequate resources to address the physical accommodation and technology necessary to support students in their learning at home. These include, for example, structural adaptations that remove or reduce physical barriers for an individual with a disability.
- The capital costs calculated for teacherages follow the Indigenous Services Canada standards. These standards do not account for the additional lodging needs of professionals and paraprofessionals needed to support students with special needs. Transportation and lodging required to contract service providers is a key consideration for supporting students with special needs, and many First Nations lack sufficient accommodation facilities for visiting professionals. Additional accommodation may also likely be required to provide



year-round housing for special education staff, such as education assistants. Having access to appropriate lodging opportunities may also support the ongoing efforts to recruit and retain these professionals.

- Transportation costs have been excluded from this analysis, including the necessary transportation required for some special needs students to attend school. Also excluded are the transportation costs for students with special needs to travel to access consultations and professional services. The significant cost driver of transportation for visiting professionals and paraprofessionals to attend First Nations schools is also excluded. While some transportation costs are better suited for an operations and maintenance (O&M) cost analysis, some capital cost considerations, such as the purchase of vehicles for student transportation on reserve, are worth noting as exclusions to this Education Infrastructure Capital Needs Assessment.

7.2 Operations and Maintenance Cost Estimation Limitations

This study is intended to offer a national estimate into the true national cost of maintaining First Nations schools and Teacherages included in the study. The data set is not inclusive of all First Nations schools across Canada.

FNESL's methodology uses RSMeans, an industry standard tool used for estimating operations & maintenance costs for a variety of structures and facilities, to develop a cost estimating model for school and teacherage O&M. However, there are generalizations and assumptions made in developing the estimates for individual schools, which were then used to calibrate a model used to provide a cost estimate for all 395 schools and associated teacherages. As demonstrated in section 4.2, the model is within 20% or better when compared to true estimated costs of individual schools, depending on the zone.

This study did not look at new information to compare actual funding provided for schools through ISC Education funding for First Nation schools, and the estimated O&M needs. Past comparisons consistently show that First Nations receive only one third to two thirds of the funding necessary to adequately maintain their schools.

Some limitations of the approach used in this study is that funding under these models is typically calculated for a school board based on the enrollment and building characteristics of many school facilities. The estimations in this study are based on individual schools. Thus, some assumptions were made which might result in all funding avenues being neglected, or funding being overestimated.



8.0 References

- [1] Assembly of First Nations, "About AFN," 2020. [Online]. Available: <https://www.afn.ca/about-afn/>. [Accessed 24 April 2020].
- [2] Assembly of First Nations, "2017-2018 Annual Report: Working Together: Our Rights, Our Way, Our Future," Ottawa, 2018.
- [3] Evaluation, Performance Measurement and Review Branch Audit and Evaluation Sector, Indian and Northern Affairs Canada, "Formative Evaluation of the Department of Indian and Northern Affairs Canada Special Education Program," 2007.
- [4] G. F. L. B. J. H. Stuart Morris, "Canadian Survey on Disability Reports: A demographic, employment and income profile of Canadians with disabilities aged 15 years and older," 2018.
- [5] P. N. B. a. J. H. Tara Hahmann, "Aboriginal Peoples Survey: Indigenous people with disabilities in Canada: First Nations people living off reserve, Métis and Inuit aged 15 years and older," 2019.
- [6] C. T. H. L. E. D. D. C. The Honourable Gerry St. Germain, "Report of the Standing Senate Committee on Aboriginal Peoples: Reforming First Nations Education: From Crisis to Hope," 2011.
- [7] Assembly of First Nations, "Aboriginal Affairs and Northern Development Canada, Education Branch Special Education Program: An Overview of the First Nations Regional Management Organization Structure for Delivery of the Special Education Program," 2012.
- [8] M. F. N. S. S. D. o. F. a. O. Charles Cochrane, *[E-mail Correspondance] RE: Special Education Data*, 2020.
- [9] S. Auerbach, "Special Needs Students in First Nations Schools: Inclusion in School Based Special Education Programs, submitted to First Nations Education & Steering Committee & First Nations School Association," 2007.
- [10] Indigenous Services Canada, *[E-mail Correspondance] RE: Additional Gym Space*, 2019.
- [11] Statistics Canada, "Building construction price indexes, by type of building and division," Government of Canada, [Online]. Available: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810028901>. [Accessed March 2026].
- [12] Government of Canada; Aboriginal Affairs and Northern Development Canada, "School Space Accommodation Standards 2021," 2021.
- [13] I. S. C. Meaghan Henry, *[E-mail Correspondance] RE: Needs Assessment Data Ask*, 2020.
- [14] Prairie Climate Centre, "Climate Atlas of Canada," University of Winnipeg, 10 July 2019. [Online]. Available: <https://climateatlas.ca/>. [Accessed 18 October 2021].
- [15] Hydro-Québec, "2021 Comparison of Electricity Prices in Major North American Cities," Hydro-Québec, Montréal, 2021.
- [16] J. Mineau, "InsurEye," 23 March 2012. [Online]. Available: <https://insureye.com/average-home-insurance-premiums-canadians-pay-840-average-annually/>. [Accessed 21 October 2021].
- [17] The Conference Board of Canada, "Power Shift. Electricity for Canada's Remote Communities," 2016.
- [18] CBC News Thunder Bay, "Warm weather creating 'crisis' for First Nations that rely on ice



- roads," 4 February 2020. [Online]. Available: <https://www.cbc.ca/news/canada/thunder-bay/northwestern-ontario-winter-roads-1.5450315>. [Accessed 23 April 2020].
- [19] N. F. N. Marcus Gee, "The thin white line: How Northern Ontario's winter roads are built and kept safe to drive," *The Globe and Mail*, 24 February 2020. [Online]. Available: <https://www.theglobeandmail.com/canada/article-the-thin-white-line-how-northern-ontarios-winter-roads-are-built-and/>. [Accessed 23 April 2020].
- [20] Northern Policy Institute, "Weathering Winter Roads – What is the Best Route?," 7 April 2015. [Online]. Available: <https://www.northernpolicy.ca/article/weathering-winter-roads-%E2%80%93-what-is-the-best-route-1354.asp>. [Accessed 23 April 2020].
- [21] IBI Group; Hemson Consulting Ltd, "Draft Technical Backgrounder: Northern Ontario Multimodal Transportation Strategy: Winter Roads," Prepared for the Ontario Ministry of Transportation and Ministry of Northern Development and Mines, 2016.
- [22] Centre for the North at the Conference Board of Canada, "Study on Addressing the Infrastructure Needs of Northern Aboriginal Communities," 2014.
- [23] Yukon Territory Government, "Building Code Modifications Regulation, YOIC 2014/55," 20 January 2017. [Online]. Available: <https://www.canlii.org/en/yk/laws/regu/yoic-2014-55/latest/yoic-2014-55.html>.
- [24] A. o. F. N. U. N. o. N. a. R. C. T. Team, Interviewee, *Discussions regarding construction materials and building codes for education infrastructure*. [Interview]. 2020.
- [25] National Round Table on the Environment and the Economy, "True North: Adapting Infrastructure to Climate Change in Northern Canada," Ottawa, 2009.
- [26] The Canadian Council for Public-Private Partnerships, "P3's: Bridging the First Nation Infrastructure Gap".
- [27] D. Beeby, "Tardy bureaucrats causing First Nations' cost overruns, report finds," *CBC News*, 28 September 2016. [Online]. Available: <https://www.cbc.ca/news/politics/first-nations-orbis-infrastructure-water-consultants-budgets-1.3780760>. [Accessed 23 April 2020].
- [28] Aboriginal Affairs and Northern Development Canada, "Status of Remote/Off-Grid Communities in Canada," Government of Canada, 2011.
- [29] Canadian Radio-television and Telecommunications Commission, "Communications Monitoring Report," Her Majesty the Queen in Right of Canada, represented by the Canadian Radio-television and Telecommunications Commission, Ottawa, ON, 2019.
- [30] S. B. R. H. H. D. T. O'Donnell, "Digital Technology Adoption in Remote and Northern Indigenous Communities in Canada," Calgary, Alberta, 2016.
- [31] D. S. D. G. Katalina Toth, "Indigenous peoples and empowerment via technology," *First Peoples Child & Family Review*, vol. 13, no. 1, 2018.
- [32] N. Campbell, "2017 Indigenous Connectivity Summit - Community Report," Internet Society, 2018.
- [33] INDsight Consulting, "Assembly of First Nations High Cost Special Education Program - Program Review," 2020.
- [34] Nishnawbe Aski Nation, "The forgotten people: Nishnawbe Aski Nation children and youth with special needs, preliminary engagement report," 2016.
- [35] Northern Nishnawbe Education Council , "NNEC Service Map," [Online]. Available: <https://www.nnec.on.ca/>.
- [36] R. C. Peter Garrow, "Ontario First Nations Special Education Review Report," 2017.



- [37] Assembly of First Nations - Indigenous Services Canada, "Education Infrastructure Task Team - Operational Terms," 2018.
- [38] Indigenous Services Canada, *School Space Accommodation Standards*, Ottawa: Government Of Canada, 2023.



Appendix I: School Capital Costs



Appendix II: Teacherages Capital Costs



Appendix III: School O&M Costs



Appendix IV: Teacherages O&M Costs