

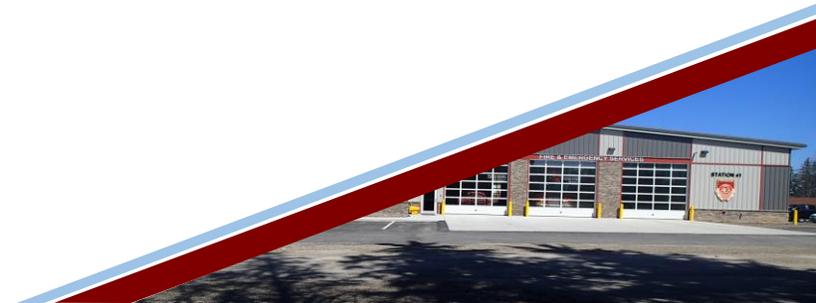


A High Level Look at Nationwide Capital and O&M Infrastructure Shortfalls



Introduction

- The AFN National O&M Policy review has shown the need for a high level review of First Nation infrastructure and O&M needs.
- First Nations Engineering (FNESL) has developed a model that determines the capital needs and operations and maintenance (O&M) costs for education assets. The model was initially developed for the Anishinawbek Nation, and further refined for the Nishnawbe Aski Nation.
- The AFN retained FNESL in 2019 to complete the national education needs assessment last year.
- The UCCMM tribal council retained FNESL in undertaking a detailed O&M assessment for 3 schools in their territory.
- This presentation will walk through the model methodology and results of the aforementioned studies.



Making a Model

The project focused on the following priorities:

- School Capital Needs
- Teacherage Capital Needs

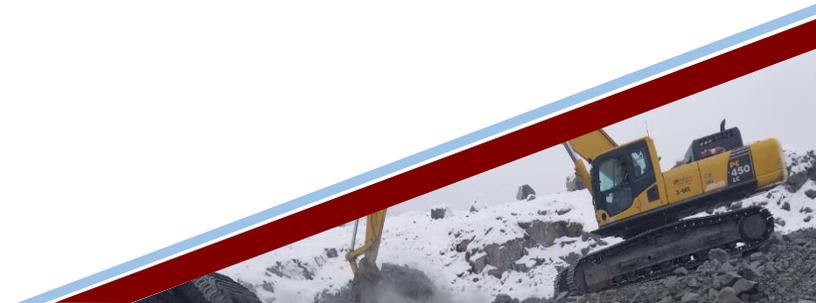
The initial model was derived from data provided by the political-territorial organization. The following sources of data were used:

- First Nation population data
- ACRS Reports
- School Enrolment data for member First Nations
- Core Capital Education and School/Teacherages O&M
- Indigenous Services Canada (ISC) First Nation Profiles
- ISC School Space Accommodations Calculator

The data above was collected into four spreadsheets.

Making a Model Cont'd

- Population projections were developed for each First Nation over 5, 10, and 20 year planning periods, based on an assumed Annual Average Growth Rate (AAGR).
- enrolment projections were developed based on the projected population of the First Nation and the current ratio of enrolment to the on-reserve population. The projected enrolment was divided into various grade brackets as required for input into the ISC School Space Accommodation Standards Calculator.
- O&M numbers were developed using zonal factors, Zero-based budgeting was applied, and the *Gordian 2018 Facilities Maintenance & Repair Costs with RSMeans* data book was used as a reference. A cost per square metre was calculated and then used to determine what the overall total costs were for the various zones.



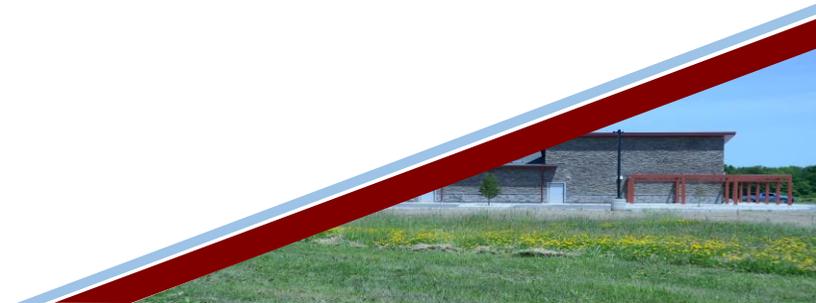
Making a Model Cont'd

A Major Capital Class 'D' estimate was calculated per sq.m., per zone for schools:

- \$4,306 per sq.m. for schools within First Nations deemed to be in geographic Zone 1
- \$5,382 per sq.m. for schools within First Nations deemed to be in geographic Zone 2
- \$6,458 per sq.m. for schools within First Nations deemed to be in geographic Zone 3
- \$7,534 per sq.m. for schools within First Nations deemed to be in geographic Zone 4

A Major Capital Class 'D' estimate was calculated for teacherages:

- \$3,960 per sq.m. for schools within First Nations deemed to be in geographic Zone 4



Revised O&M Model

- The analysis relied upon as-built construction drawings of the existing schools, as well as current and historical O&M data.
- All schools included budget documents for O&M listing custodial salaries, utilities, insurance, and in most cases telephone. For each of these, the estimate was obtained by using the most recent 12-month period listed in their budget reports.



Revised O&M Model Results

The results of the revised O&M model is as follows:

School 1

- Estimated O&M Required - \$276,000
- O&M Budget - \$100,000
- Funding only covered 36%

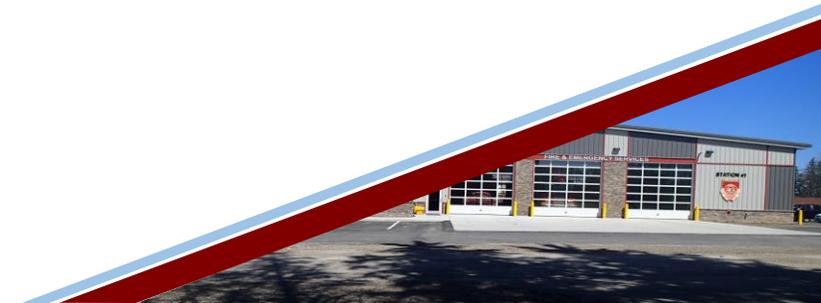
School 3

- Estimated O&M Required - \$1,164,000
- O&M Budget - \$419,000
- Funding only covered 36%

School 2

- Estimated O&M Required - \$496,000
- O&M Budget - \$130,000
- Funding only covered 26%

- Note the above shortfalls do not account for minor capital education projects funded by ISC.



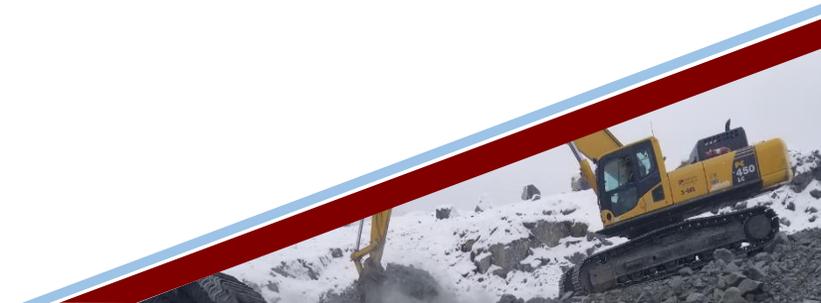
Nationwide Education Capital Costing Model

- The national assessment provided a report on the short, medium, and long term needs under current federal guidelines including the 2016 School Space Accommodation Standards (SSAS) as well as the Level of Service Standards and Management of Teacherages on Reserve.
- This project consisted of a review of existing documentation such as Asset Condition Reporting System (ACRS) reports and nominal roll data to determine trends and summarize existing infrastructure and funding.
- The short term, medium term, and long term infrastructure needs for schools and teacherages in First Nations across the country was determined using the previously described model.
- The capital cost estimates were calculated using the assumption that all schools continue to offer the same grades as are currently offered.

Nationwide School Statistics

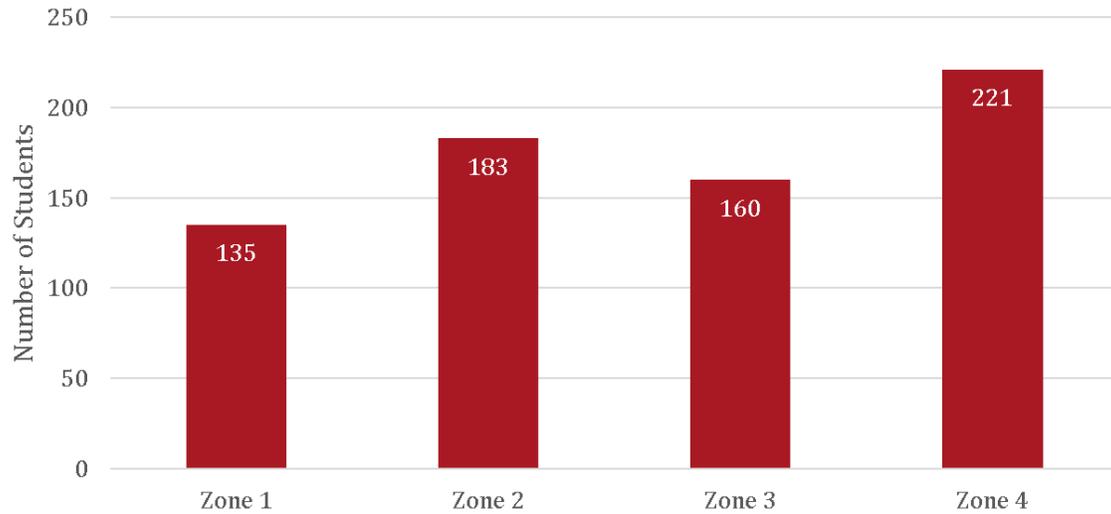
The following statistics were determined in the process of the assessment:

- 391 Schools
- 68,737 Students
- 1026 Teacherages
- Average ACRS score of 6.47 for schools
- Average ACRS score of 6.29 for teacherages
- Average construction year for schools – 1994
- Average construction year for teacherages – 1996
- 47 schools also have portables

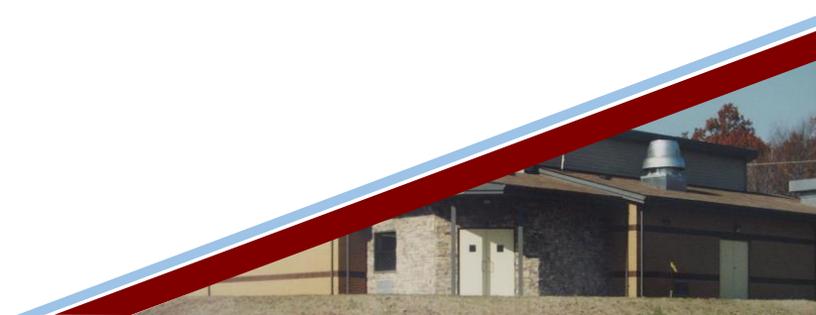
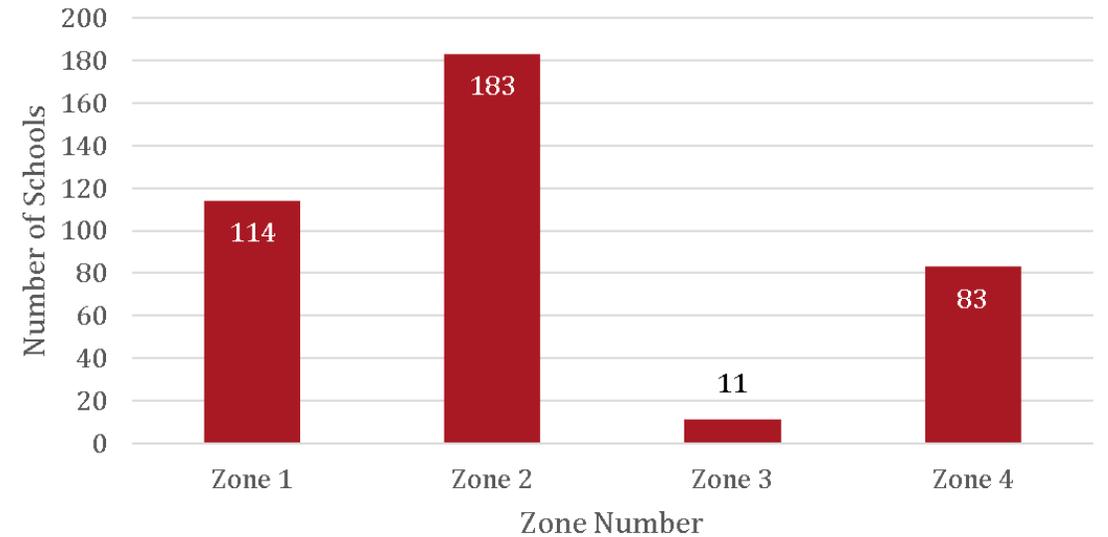


Nationwide School Statistics

Average Number of Students Per School in Each Zone



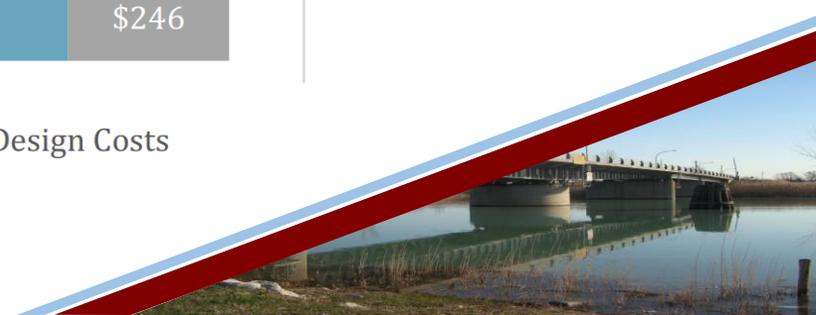
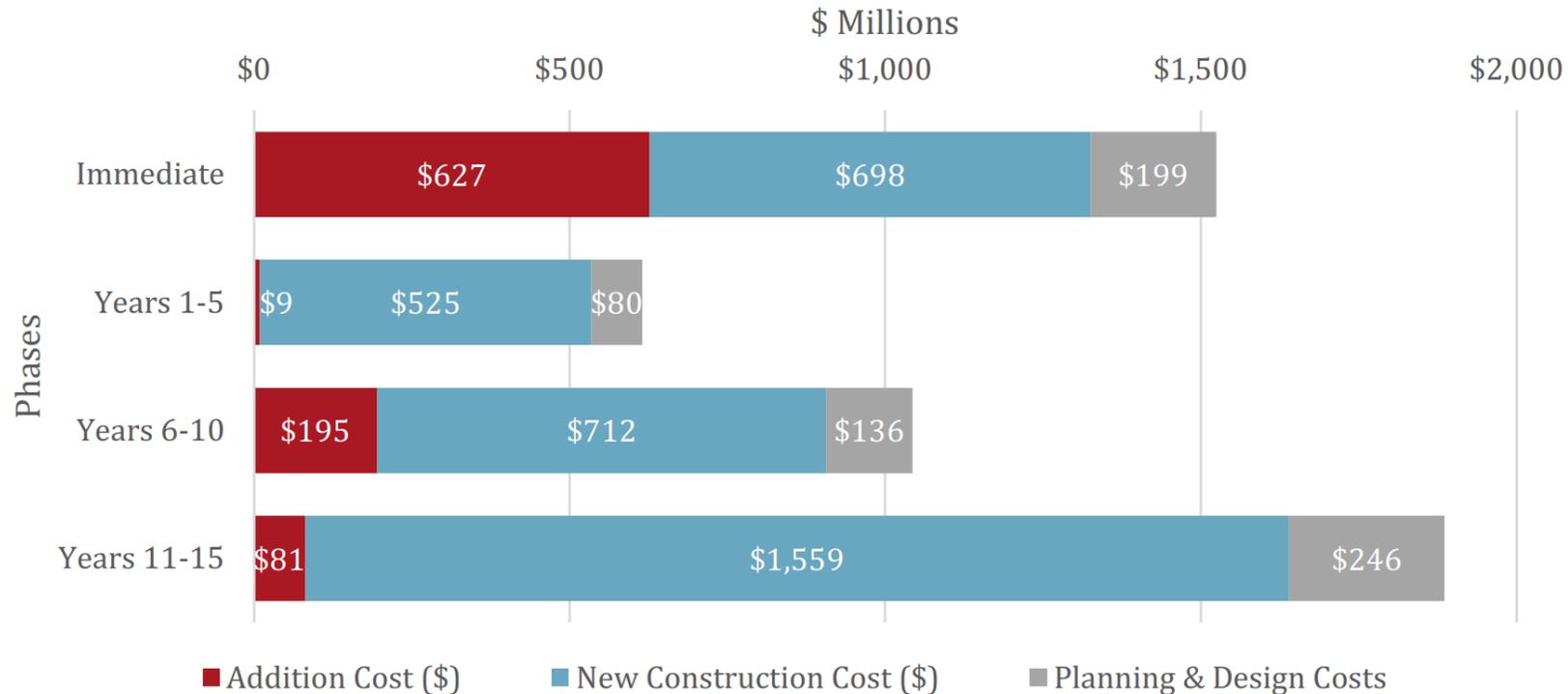
Number of On Reserve Schools Per Zone



Nationwide Education Capital Costing Results

The total capital needs for schools over the 15 year planning period is \$5.07 Billion.

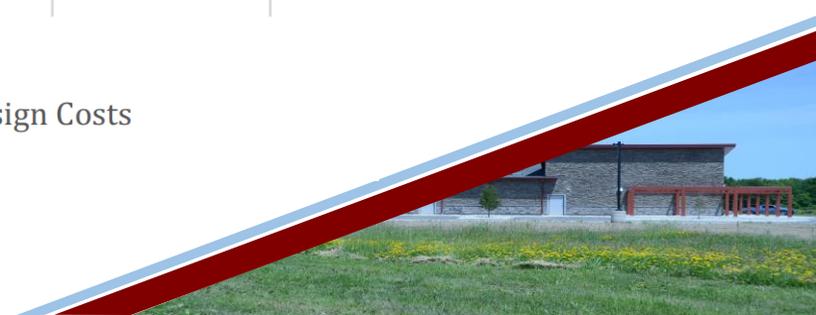
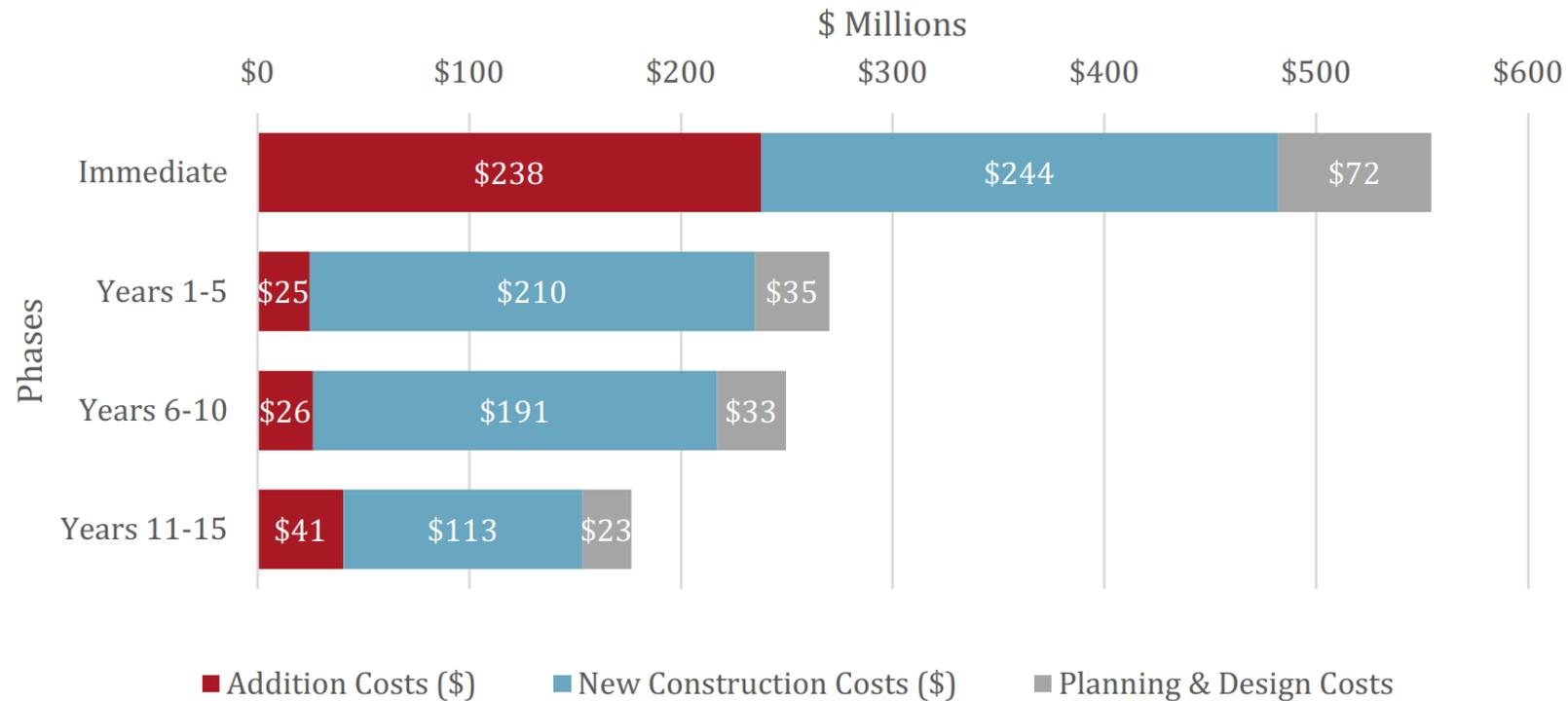
Capital Estimates for Schools



Nationwide Education Capital Costing Results

The total capital needs for teacherages over the 15 year planning period is \$1.25 Billion.

Capital Estimate for Teacherages

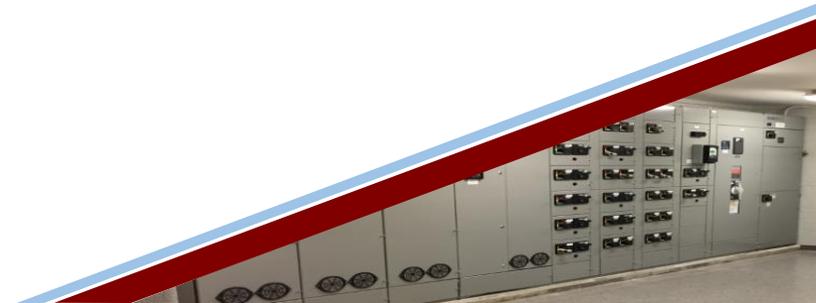


Nationwide Education O&M Assessment

The Nationwide O&M assessment is currently in progress

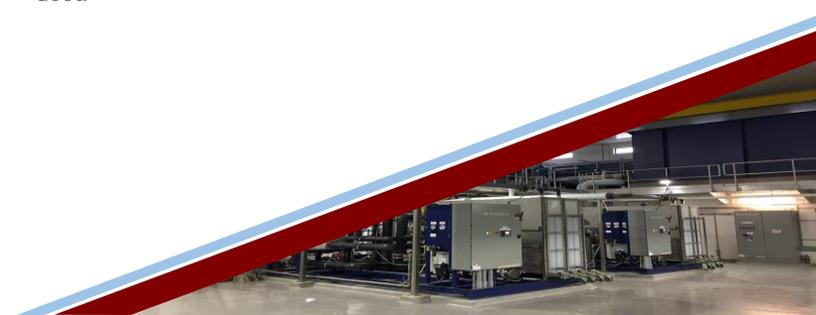
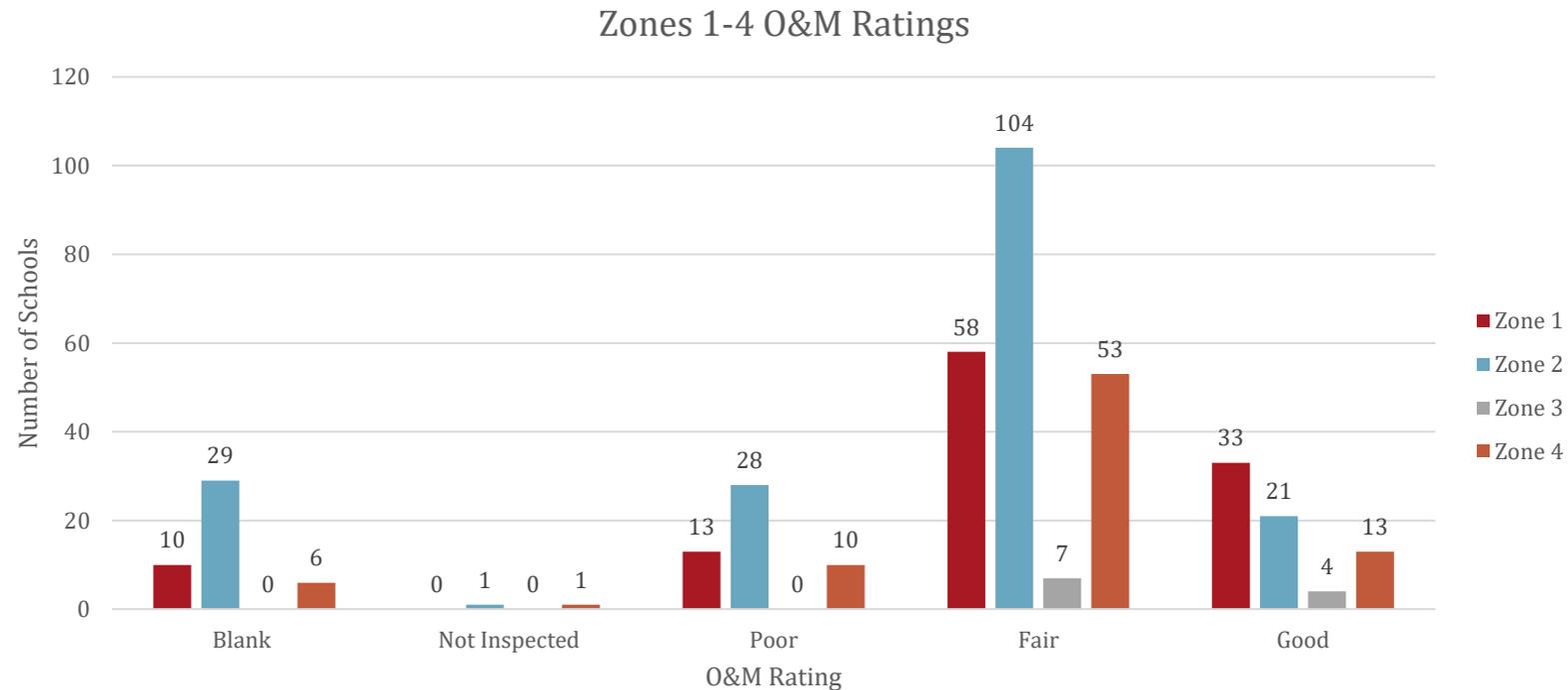
The objectives of this study are to:

- Complete detailed O&M costing for three schools,
- Develop annual O&M costing of all (approx. 391) schools on reserve in Canada,
- Develop annual O&M costing of all (approx. 1026) teacherages on reserve in Canada,
- Review of current First Nation O&M funding compared to regional O&M funding



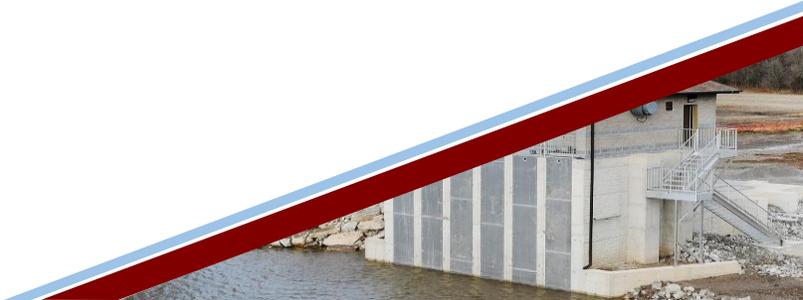
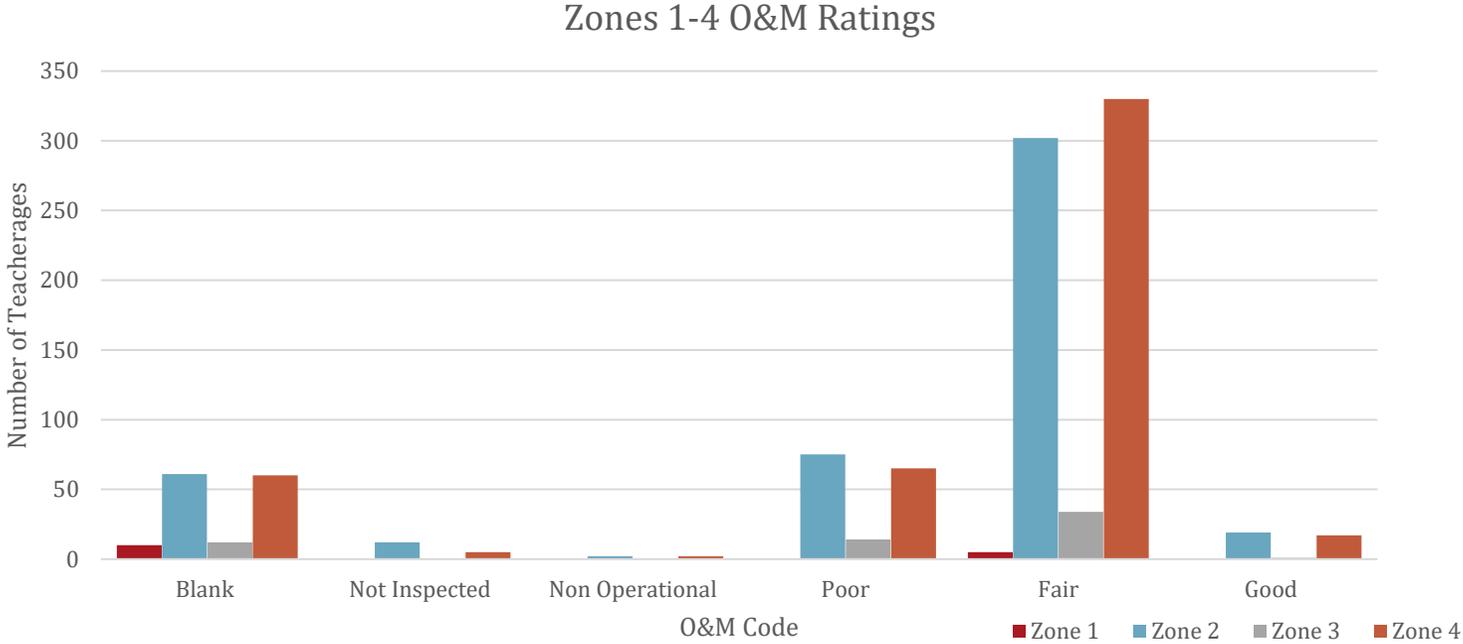
Nationwide Education O&M Results

The following table shows the average ACRS O&M ratings of schools by zone.



Nationwide Education O&M Results

The following table shows the average ACRS O&M ratings of teacherages by zone.



Nationwide Infrastructure Assessment

The AFN currently has a Request for Proposal to undertake a similar exercise for other asset classes.

The Terms of Reference specify the following asset classes are to be included:

- Water Systems
- Wastewater Systems
- Health Infrastructure
- Emergency Response Infrastructure
- Other Community Buildings
- Waste Management Infrastructure
- Utilities including power generation and transmission, telecommunications and the internet
- Roads
- Vehicles
- Grounds / Siteworks associated with the above assets



Nationwide Infrastructure Assessment

The Terms of Reference require the winning proponent to devise a method of calculating what the capital and O&M needs are for all the federally funded assets using the existing asset data possessed by ISC.

All data provided by ISC is anonymous and divided by zone. Regional data is “rolled up” and cannot be broken out separately.

The estimates are to be Class ‘D’ and a method of verifying the model must be provided.

The project is anticipated to be completed by the end of the year.

