

# New First Nations Schools Initiatives

**Building Communities**

Don Hester, FCSLA, RPP, MCIP

Don Hester, FCSLA, RPP, MCIP  
Senior Planner and Landscape Architect

42 years with AECOM, Winnipeg



Master of Landscape Architecture 1980;  
Bachelor of Environmental Studies 1973, and  
Certificate in Resource Analysis and Land Planning 1975,  
University of Manitoba

Don has worked with over 35 First Nation  
Communities in Manitoba, as well as First Nation  
Communities in Northwestern Ontario, Alberta and BC.

# Outline

- First Nations Experience: 45 years
- Context: TRC – 94 Calls to Action
- Background: ISC School Pre-design/Feasibility Studies (Basis for MSI and LWSB)
- MSI – Manitoba Schools Initiative: Project Management
- LWSB - Lake Winnipeg Schools Bundle: DB, Critical HSE Upgrades
- NWOSB – North West Ontario Schools Bundle: Design-Build Owner's Advocate, PM
- Gap Analysis Studies: beyond the school site boundaries



# 1974 Molson Lake, Manitoba

*Student: Landscape Architecture Field Study, U. of Manitoba*



Indigenous people in Northern Manitoba once had a healthy, self-sustaining life-style with their own language and culture, and trade connections...then they were moved into Reserves.



# 1975-1978 Northern Flood Agreement

*Research Assistant: Landscape Research Group, U. of Manitoba*

- Documented destruction of Rat River, which linked Southern Indian Lake (3 m rise) to the Burntwood-Nelson River system (1975).

*Community Consultation Lead: AECOM*

- Article 6.1 of the Northern Flood Agreement (1977) – Potable Water Supply
  - Locations: Norway House, Nelson House, Split Lake, Cross Lake, York Landing: water supply pail-in-lake, limited standpipes.
  - Issue: heavy sediment loads from clear-cutting; river water from across the northern Prairies.
  - Solutions: basic water treatment processes, Water Truck delivery, Sewage Truck, pump-out tanks.





***Planner & Consultation Lead: First Nation Community Capital Plans***

Difficult choices related to water and wastewater servicing in the North.



# 1983 Nelson House School

*Planner & Landscape Architect: First Nation School Site Planning,  
Pre-design and Detailed Design*



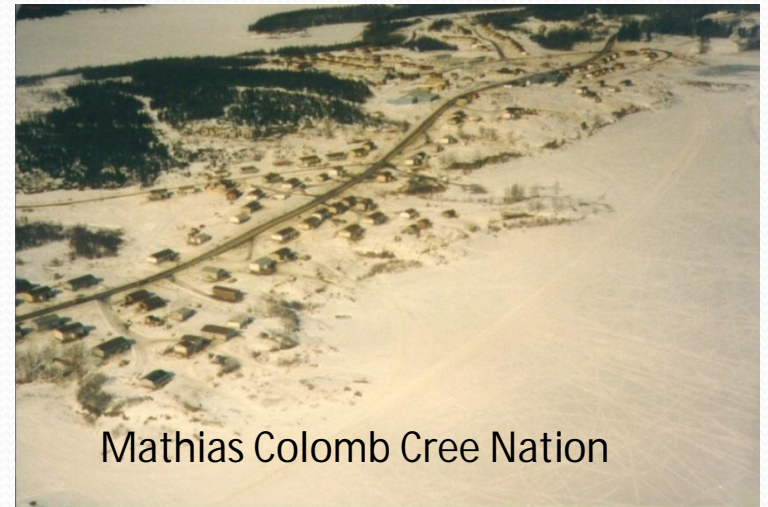
Architecture, Gaboury Architects Inc.; Planning, Land. Arch., Civil Engineering, AECOM



# 1998–2019 Community Planning - Sewer & Water Feasibility Studies

*Project Coordinator & Senior Planner: AECOM*

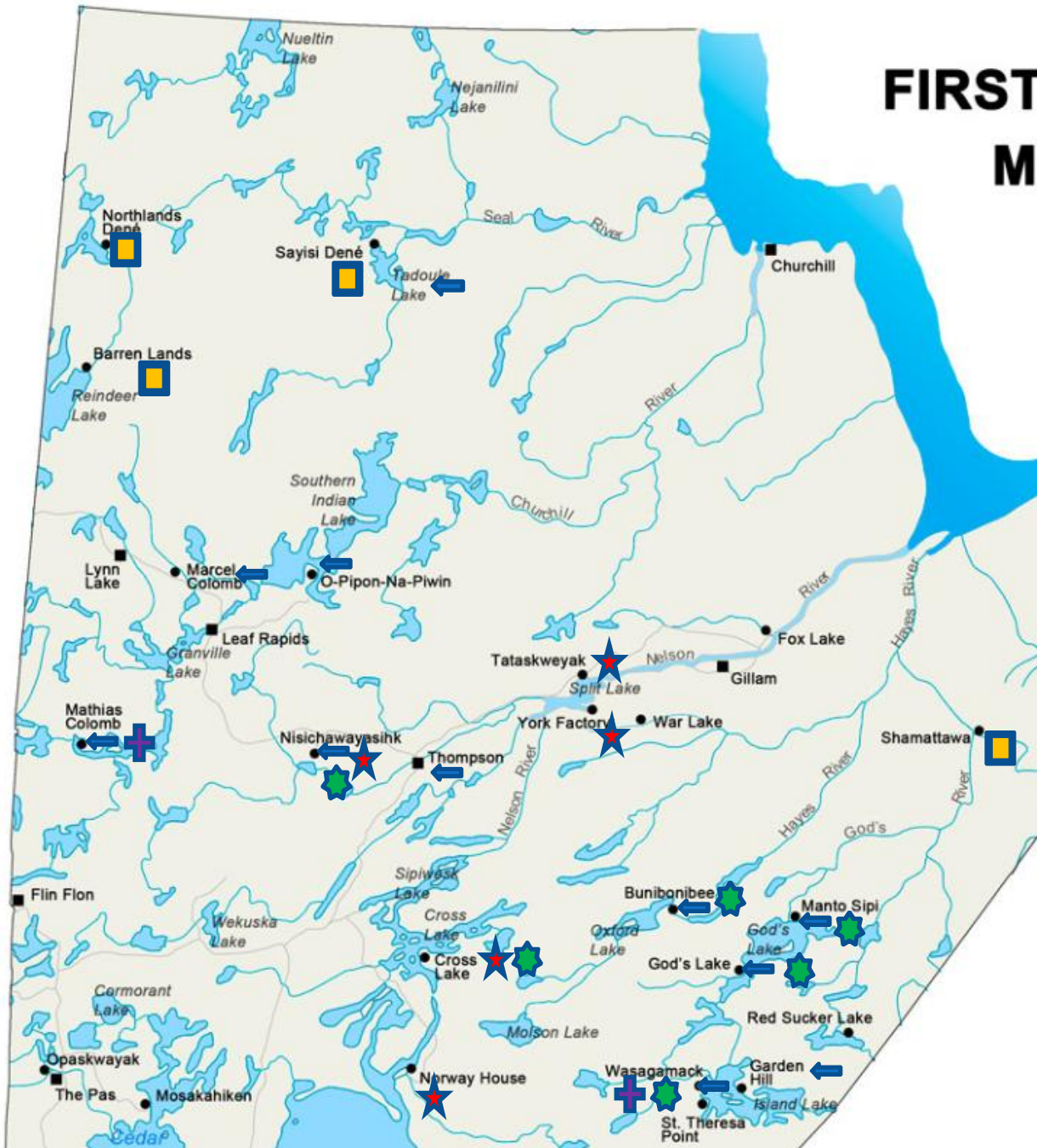
- Population and housing projections - land requirements;
- GIS terrain analysis, field studies; Community infrastructure analyses;
- Stakeholder and Community consultations, Questionnaire Surveys;
- Planning options; Community Development Plans with Development Standards;
- Infrastructure analysis - identified water and wastewater treatment and conveyance systems, and road design issues and options;
- Cost estimating and Life Cycle Cost Analyses.



Mathias Colomb Cree Nation



# FIRST NATIONS IN MANITOBA



## LEGEND:

Northern Flood Communities (5)



School Studies (22)



Greenhouse Study (4)



Planning Studies (33)



Subdivisions (2)



Environmental (3)



Flood Mitigation Studies (1)



Nursing Station Project (1)



Recreation Centre Proposal (1)





Rice River Road Consultation (3)

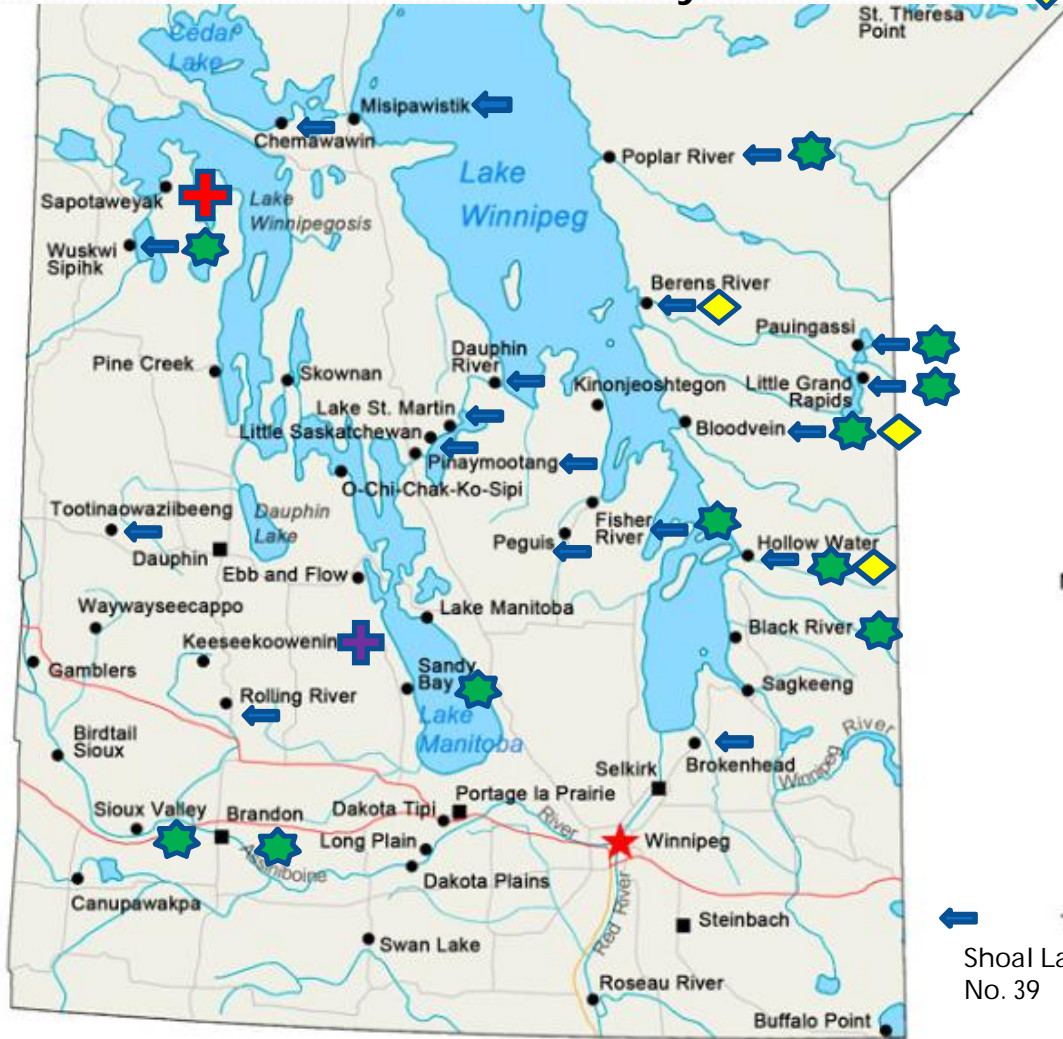





**LEGEND:**

- School Studies 
- Planning and Terrain Analysis Studies 
- Rice River Road Community Consultation 

- Nursing Station Project 
- Environmental Studies 



 Shoal Lake No. 39

**LEGEND**

- Non-Aboriginal Communities ..... ■
- First Nation Communities ..... ●

Scale / Échelle 1:3 500 000



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# Context

TRC - 94 Calls to Action  
Northern Manitoba

# TRC – 94 Calls to Action

## *New First Nation Schools Initiatives address key Calls to Action*

- **Child Welfare** – Jordan’s Principle and Special Needs Students.
  - Ensures First Nations children can access all public services. The **government of first contact pays** - resolves jurisdictional/payment disputes later.
- **Education** – Eliminate Gaps
  - Eliminate **discrepancy in federal funding** for First Nations children being educated on-Reserve: close educational achievement gaps in a generation.
  - **Culturally appropriate curricula and early childhood education** for Aboriginal families; teaching of Aboriginal languages as credit courses.
  - **Parental and community responsibility**, and participation in education.
- **Business** - Meaningful Consultation; Equitable Access to Jobs and Training
  - **Free prior and informed consent** before proceeding with economic development projects. Capacity building in Communities.



# First Nations Educational Disparities

## *Disparities between Provincial and First Nation (Federal) Schools*

- **Education budgets** per student: 30% less than Manitoba's Provincial system - some First Nations now forming School Divisions;
- **ISC School Space Allocation Standards (SSAS)**: generally provide less educational space than Provincial Schools – First Nations may add more space from already overstretched budgets;
- **Teachers' salaries** are lower - even though they pay more to travel to and live in remote locations;
- Teachers often **can't get school supplies** - some buy their own; often no space to store supplies in schools;
- **Schools are more frequently shut down** due to power failures, lack of school buses, road conditions, unsafe building conditions, flooding, local events, and
- **Significant health and safety concerns**, including: locked fire doors, lack of fire suppression infrastructure, crumbling buildings and play areas, mould, hydrocarbon contamination, wild animals, dogs, mix of age groups on the playground, lack of transportation, O&M issues.



# First Nation Schools Issues

*Remote Communities face significant issues related to the quality of their children's education*

- Sending children out to larger centers such as Winnipeg after Grade 9 - vs. quality of High School education (Gr. 10 -12) in small communities;
- Attracting and retaining qualified teachers - difficult due to isolation, condition of teacherages, low salaries and security concerns;
- High numbers of Special Needs Students - requiring special facilities and teachers; space allocations and budgets, additional teacherages;
- Need for Indigenous language and culture education – Hollow Water FN (Frontier School Division) Immersion Program to Grade 6, and
- Need for practical training - Industrial Arts, Home Economics, and Outdoor Education - require specialized teachers.



# First Nation Schools Issues

*Schools are at the center of remote Communities*

- **Community use facilities:** include Gyms, Libraries (Internet), Cafeterias/Kitchens and other;
- **Outdoor sports and playground facilities:** school yard is often the Community's only park;
- **Schools O&M:** need for trained maintenance staff and simple systems – e.g. Pauingassi's Omiishosh Memorial School;
- **Delivery of new schools:** consider Winter Road Seasons in project scheduling and costing; materials, supplies, school buses;
- **Operation and maintenance of Community infrastructure:** school buses, roads, and Community buildings, and
- **Other supporting infrastructure:** such as potable water and fire flows; 3-Phase electrical power and High-speed Internet services.



# Remote Communities - Access Challenges

## *Remote Communities - significant access challenges*

- Provincial **airports on islands**, or in adjacent communities
- **Short Winter Road season** is getting shorter
- **Float planes** for personal transport and supplies, or helicopter, boat/skidoo
- Issues with **emergency medical/evacuations; repairs and servicing.**
- **Logistics** - important part of any construction project: Winter Road season is the only time for getting materials into the Communities (without a Hercules).





# ISC Response to 94 Calls to Action

## *First Nation School Bundles: 2016 to 2022*

- **Indigenous Services Canada** (ISC) is rolling out major initiatives for new First Nation Schools in order to meet a huge backlog. The current Federal budget recognizes the need.
- AECOM is involved in the first three of these:
  - **Manitoba Schools Initiative**: five schools, including a conversion, on four Reserves – PM;
  - **Lake Winnipeg Schools Bundle**: three new schools, one renovation/upgrade (Design Build), and
  - **NW Ontario Schools Bundle**: two new schools - Shoal Lake #40 FN and Wapekeka FN – PM for Design Build.
- Most new MSI and LWSB schools are K4 to Grade 12;
- Include consideration of Special Needs - Jordan's Principal;
- Language and cultural education incorporated, and
- Budgets for action, but so much more is needed!

# ISC First Nation School Pre-design Studies



Identify School Building  
Sites and Sizes

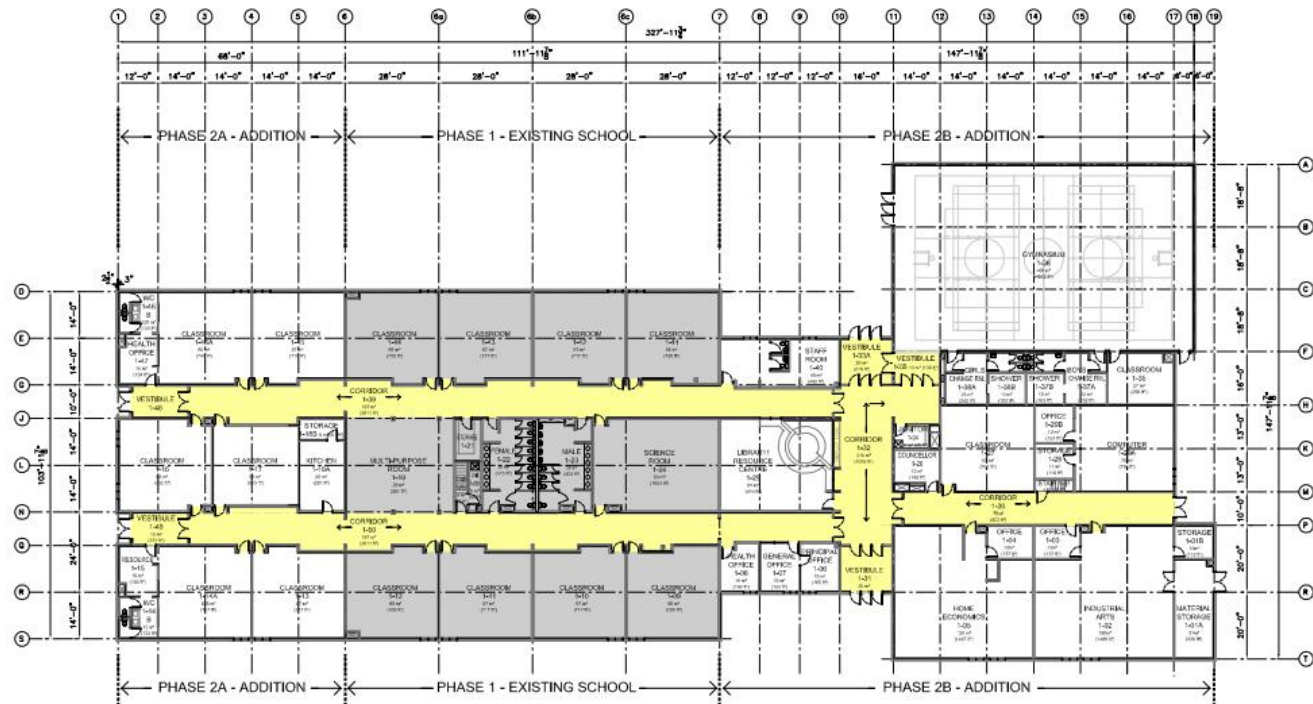


# God's Lake First Nation School Pre-design Study



## Part of MSI

School  
Condition  
Assessment  
- Architectural  
- SME  
- Land. Arch.  
Consultation  
with teachers



**MAIN FLOOR PLAN**  
SCALE: 1/16"=1'-0"

**AREAS:**

- NET AREA FOR INDIVIDUAL ROOMS (AS INDICATED ON PLAN)
- GROSS AREA (ENTIRE BUILDING INCLUDING GYM) = 3389 m<sup>2</sup> (36480 ft<sup>2</sup>)
- GROSS AREA (GYM ONLY) = 479 m<sup>2</sup> (5161 ft<sup>2</sup>)

**AECOM**

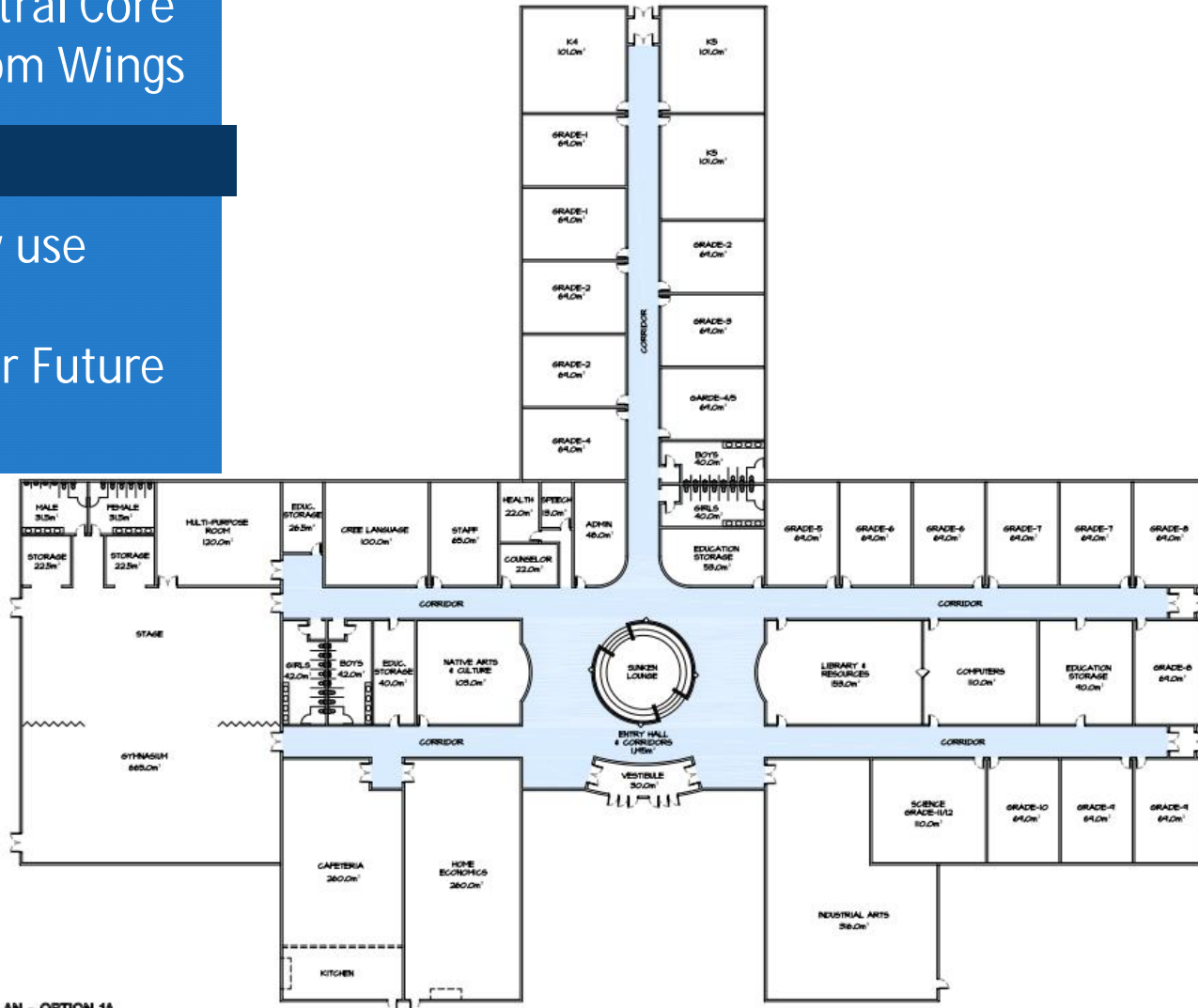


# God's Lake First Nation School Pre-design Study

Design - Central Core  
and Classroom Wings

Part of MSI

- Community use facilities
- Potential for Future Expansion



FLOOR PLAN - OPTION 1A  
SCALE: 1:200

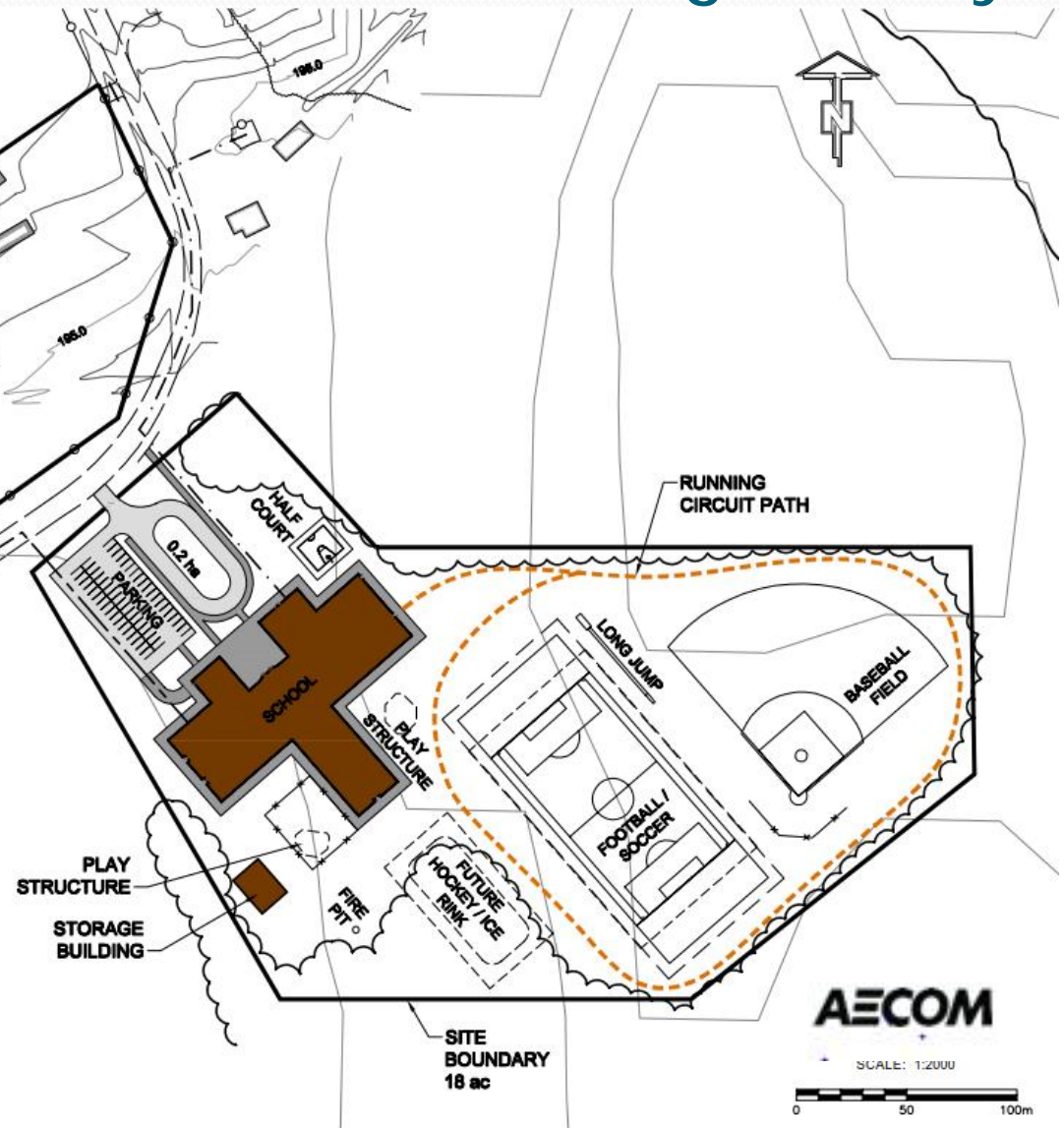


# God's Lake First Nation School Pre-design Study

Existing and Two  
Alternative Sites

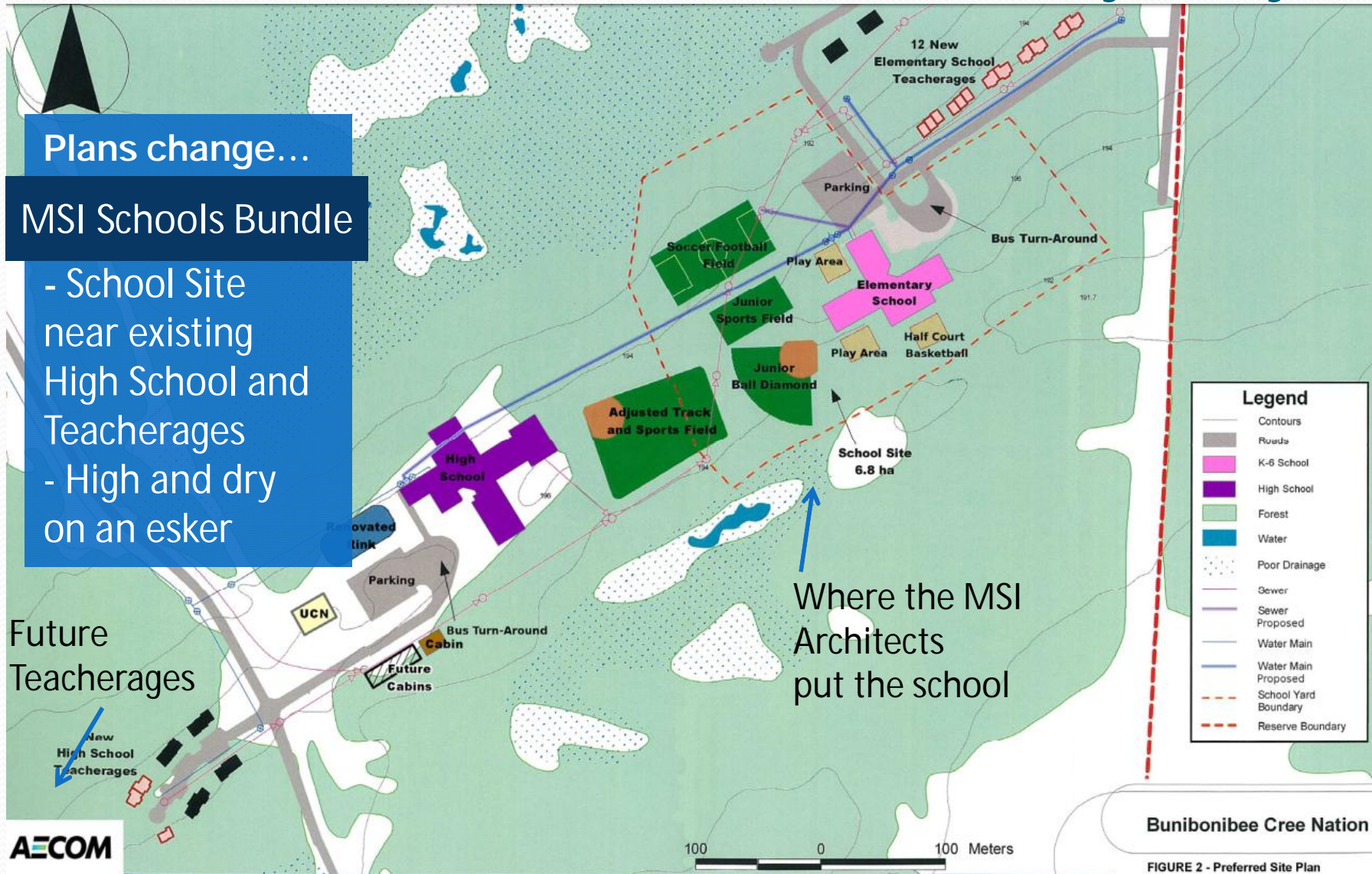
Part of MSI

- School Yard is Community's main playground and recreation area
- ISC reduced allowable hard and soft school yard areas





# Bunibonibee Cree Nation School Feasibility Study



Plans change...

MSI Schools Bundle

- School Site near existing High School and Teacherages
- High and dry on an esker

Future Teacherages

Where the MSI Architects put the school



# Bunbibonibee Cree Nation School Feasibility Study

*Local Community - educational innovations*



Involve Special Needs Students in practical endeavours as a way to learn math, writing, life skills.  
Repair of Elementary School/Yard.

**AECOM**





# Lake Winnipeg Schools Bundle Pre-design Studies

*2016 - building on previous AECOM School Feasibility Studies*

Shawano Consulting  
Services Inc.

First Nations in  
SERDC

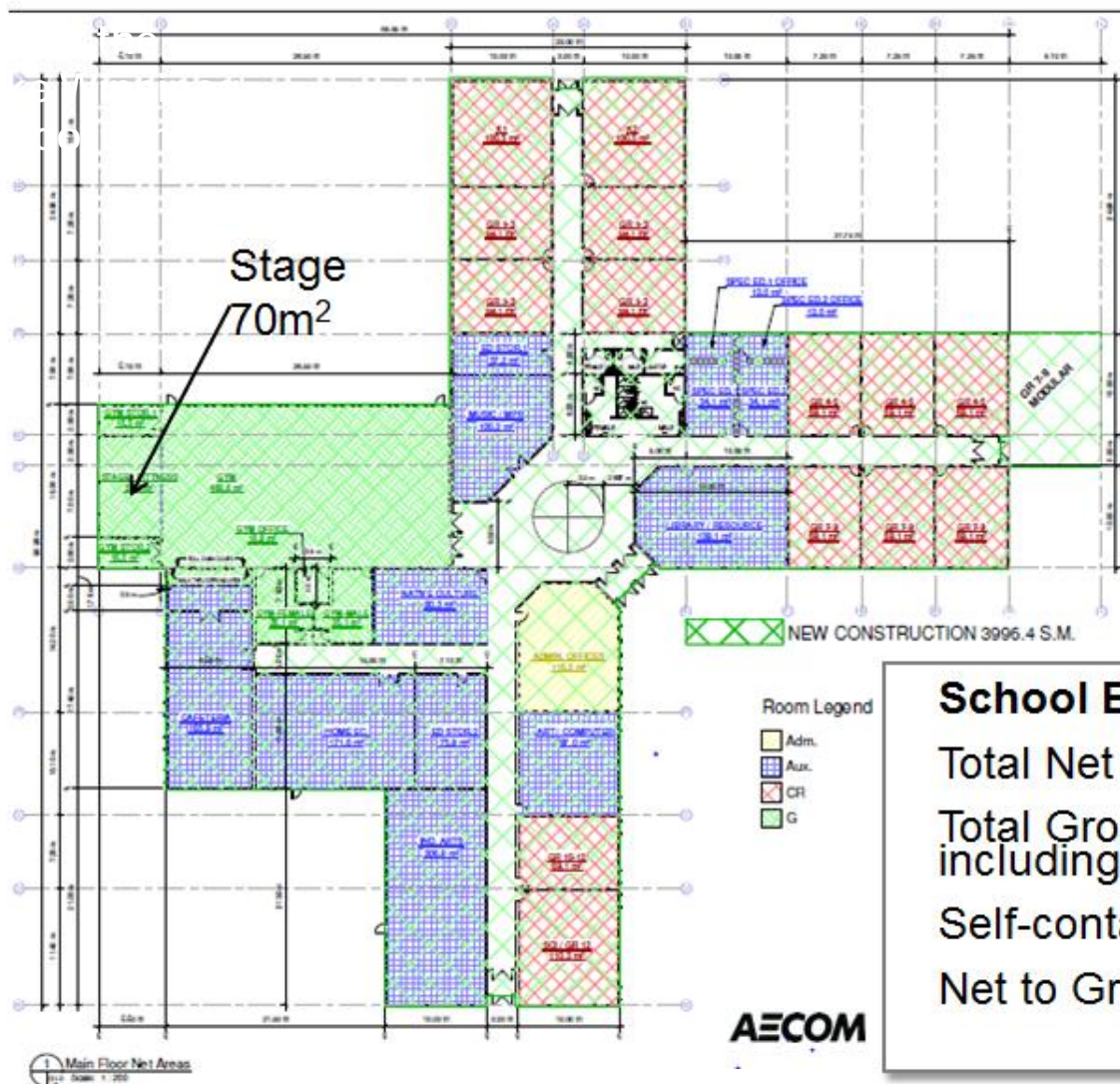
East Side Lake  
Winnipeg:  
- Poplar River  
- Bloodvein  
- Little Grand Rapids  
- Pauingassi





# Little Grand Rapids FN School Pre-design Study

## Standardized School Building Plans



Lake Winnipeg  
Schools Bundle

Central Core and  
Classroom Wings

- Community use facilities
- Potential for Future Expansion

### School Building Option 1

Total Net Area: 3003.2m<sup>2</sup>

Total Gross Area: 4,011.4m<sup>2</sup>  
including -

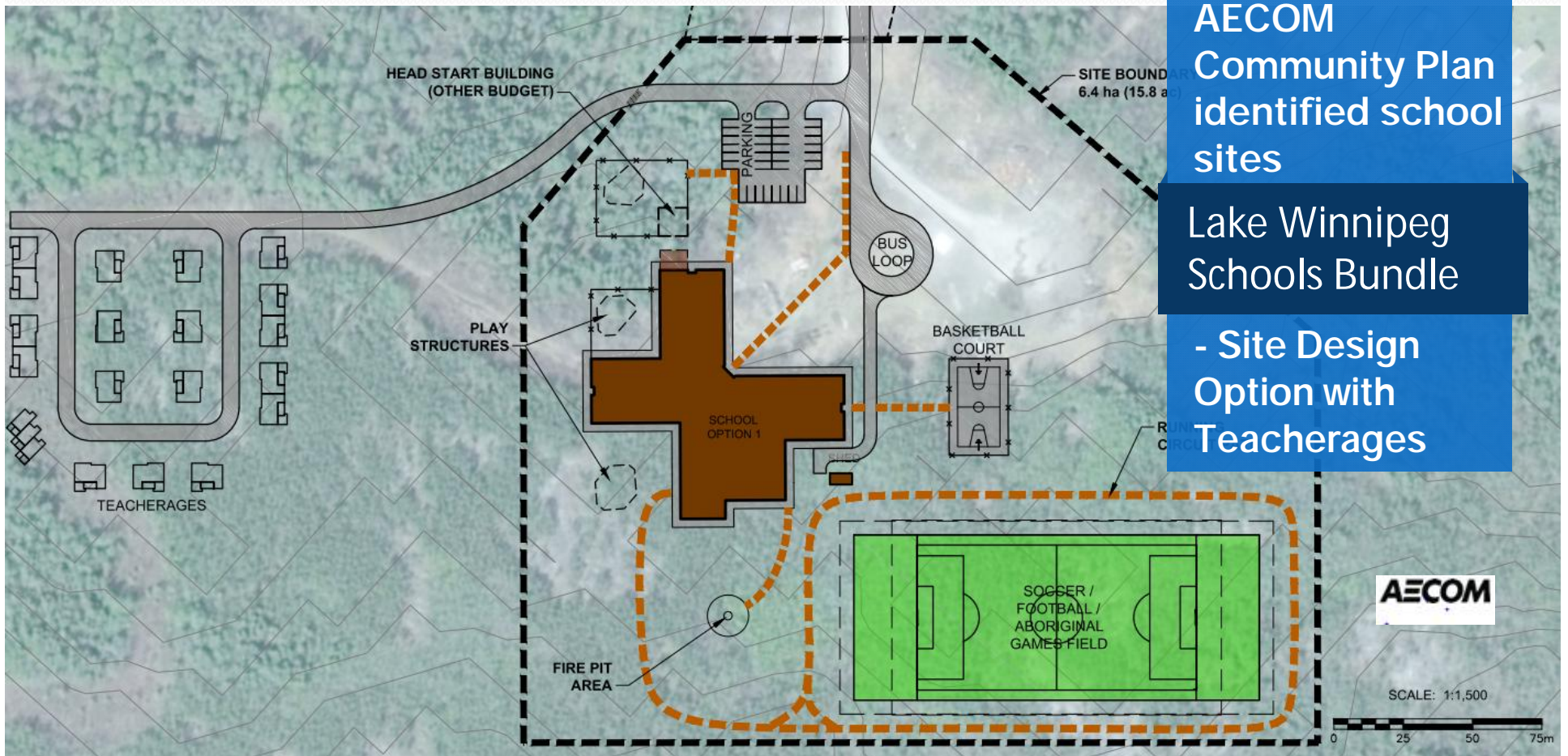
Self-contained Classroom: 90m<sup>2</sup>

Net to Gross Ratio: 0.75



# Little Grand Rapids FN School Pre-design Study

*Fewer outdoor facilities allocated to schools /Community recreation*





# Pauingassi First Nation School Pre-design Study

*Accuracy of Student Enrolment Projections – the basis of school budgets and designs*

Primarily Site Improvements  
Lake Winnipeg Schools Bundle  
School Study  
2003-2005



In 2016 only two-thirds of the classrooms were Occupied in Omiishosh Memorial School.  
High proportion of Special Needs Students Impacted projections.

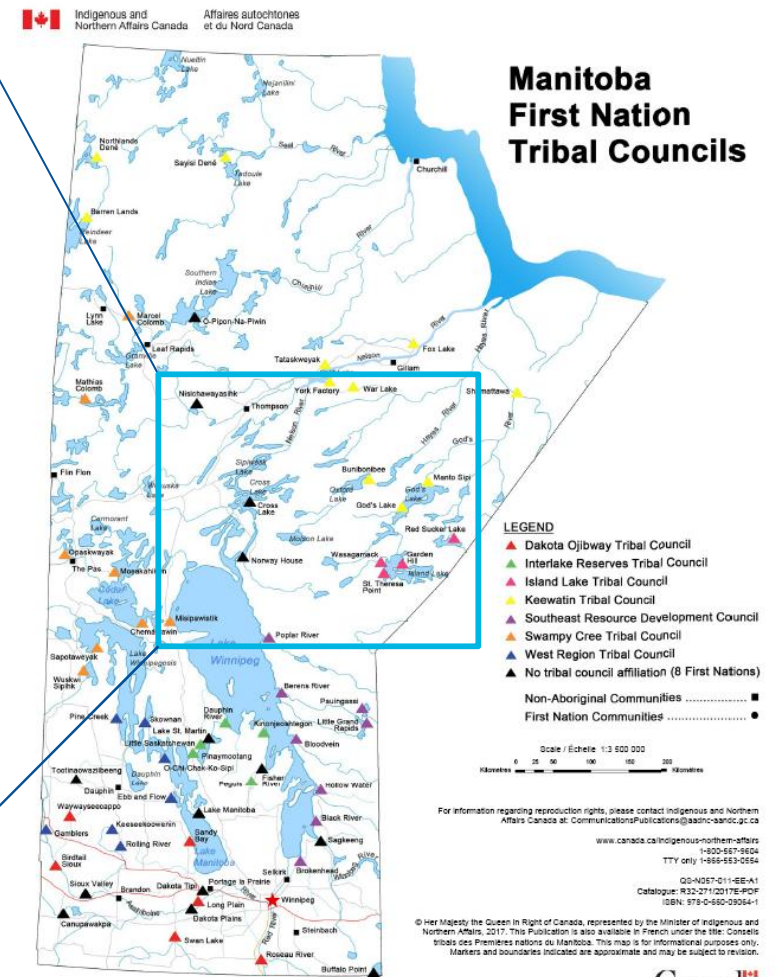
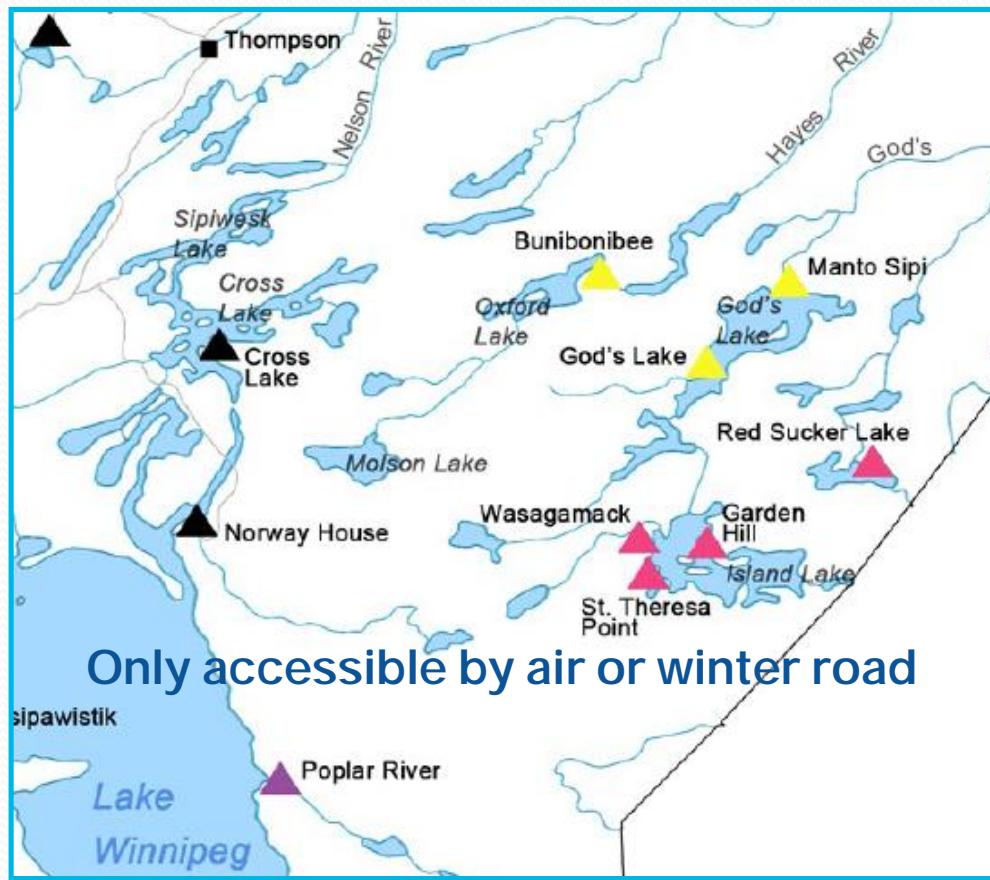


MSI

ISC Innovations



# Manitoba Schools Initiative 2016-21



Wasagamack  
First Nation

Canada

AECOM



# Manitoba Schools Initiative 2016-21

## *MSI Partners*

- Indigenous Services Canada – National and Local Personnel
- First Nation Chiefs and Councils -
  - Bunibonibee Cree Nation;
  - Manto Sipi Cree Nation;
  - God's Lake First Nation, and
  - Wasagamack First Nation
- Community Managers – Colliers
- Project Manager – AECOM:
  - Architect – Stantec Architects
  - Engineers - Stantec
  - Landscape Architects - HTFC
- General Contractor – Penn-Co Construction Canada Ltd.
- Community Needs Assessment – AECOM





# Manitoba Schools Initiative 2016-21

## Overview

Three K4-12 schools;  
one 7-12 school &  
one K4-6 renovation

Total Program \$250 MM

- Bundled Approach
- Improved Efficiency for Delivery of Schools



Stantec

AECOM

# Manitoba Schools Initiative 2016-21

## Key Features

### Partnership with Four First Nations

- Building Design - Standardized Core and Building Envelope
- Based on ISC School Space Accommodation Standards
- LEED Silver Certification
- Enhanced Risk Management Reporting



Wasagamack  
First Nation

Stantec

**AECOM**



# Manitoba Schools Initiative 2016-21

## Why Manitoba?

Northern Manitoba has biggest gap in First Nation education infrastructure

## Why AECOM?

AECOM selected by ISC and the four First Nations as the Project Manager to oversee design and construction

Based on significant relevant experience.





# Manitoba Schools Initiative 2016-21

## Timing ?

Indigenous Services  
Canada's largest single  
project.

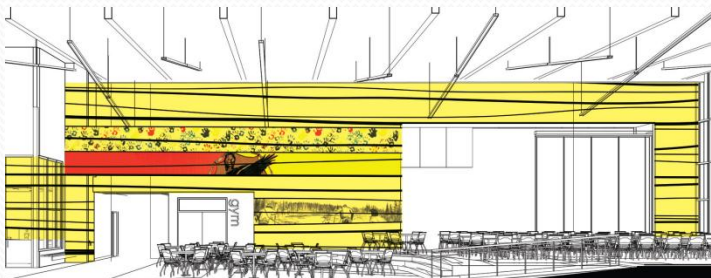
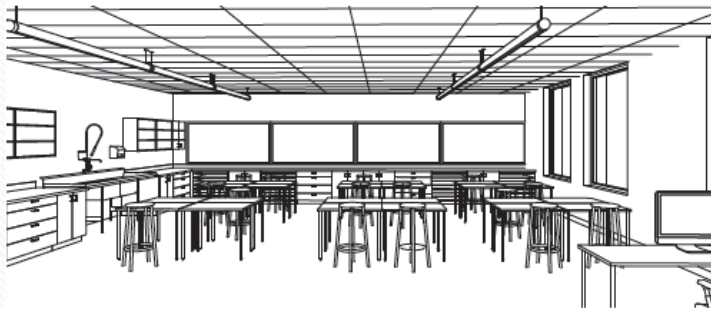
Opportunity Tracking | 2014  
Call for Proposals | Mar. 2016  
AECOM Proposal | April 2016  
Funding Agreement Signed  
\$6M (+\$12M Architecture) |  
July 2016  
Schools Open | Sept. 2020





# Manitoba Schools Initiative 2016-21

## Site Selection, Pre-design, Design Development and Construction Documents





# Manitoba Schools Initiative 2016-21

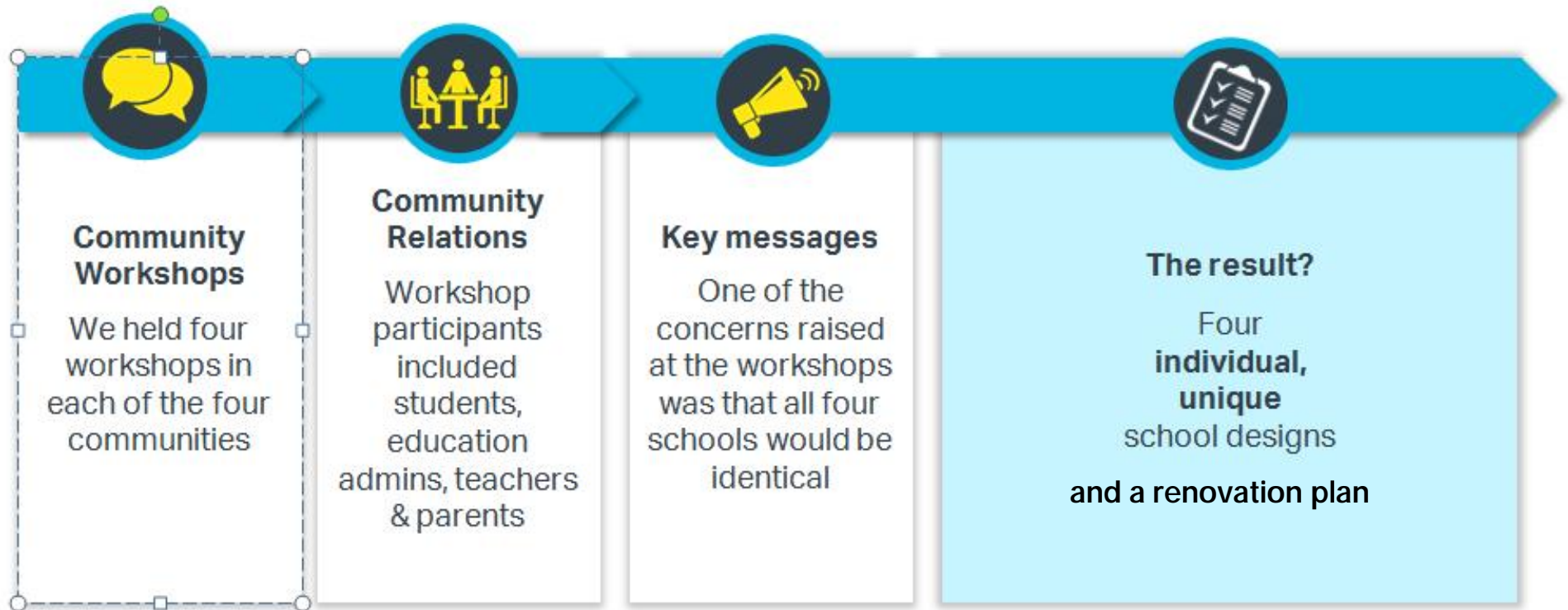
## *Community Participation*





# Manitoba Schools Initiative 2016-21

*Pro-active communications to minimize risks and delays*





# Manitoba Schools Initiative 2016-21

*Set Aside Contract for Site Preparation prepared by AECOM to salvage the 2018 Winter Road Season*

## 2017 Construction Tender

- No Award and potential loss of winter road season
- Site Preparation set-aside contracts were awarded to the First Nations





# Manitoba Schools Initiative 2016-21

*More than 800 truck loads of material will be delivered in 2019*

- Materials for delivery include hundreds of submittals for review and acceptance
- All four schools enclosed by end of 2019
- Interior finishing materials will be sent up on the 2020 winter road





# Manitoba Schools Initiative 2016-21

*Managing delivery of teacherages - to be built by the First Nations*

- One teacherage per 17 students, plus one for a Special Needs Teacher.
- Formulas - GFA allowances



1 Bedroom  
Gross Floor Area 67.0 m<sup>2</sup>



2 Bedroom  
Gross Floor Area 82.6 m<sup>2</sup>



3 Bedroom  
Gross Floor Area 109.8 m<sup>2</sup>





Poplar River School

# LWSB

ISC Innovations

Miskoosepi School, Bloodvein





# Lake Winnipeg Schools Bundle

## *Further ISC Innovations with LWSB*

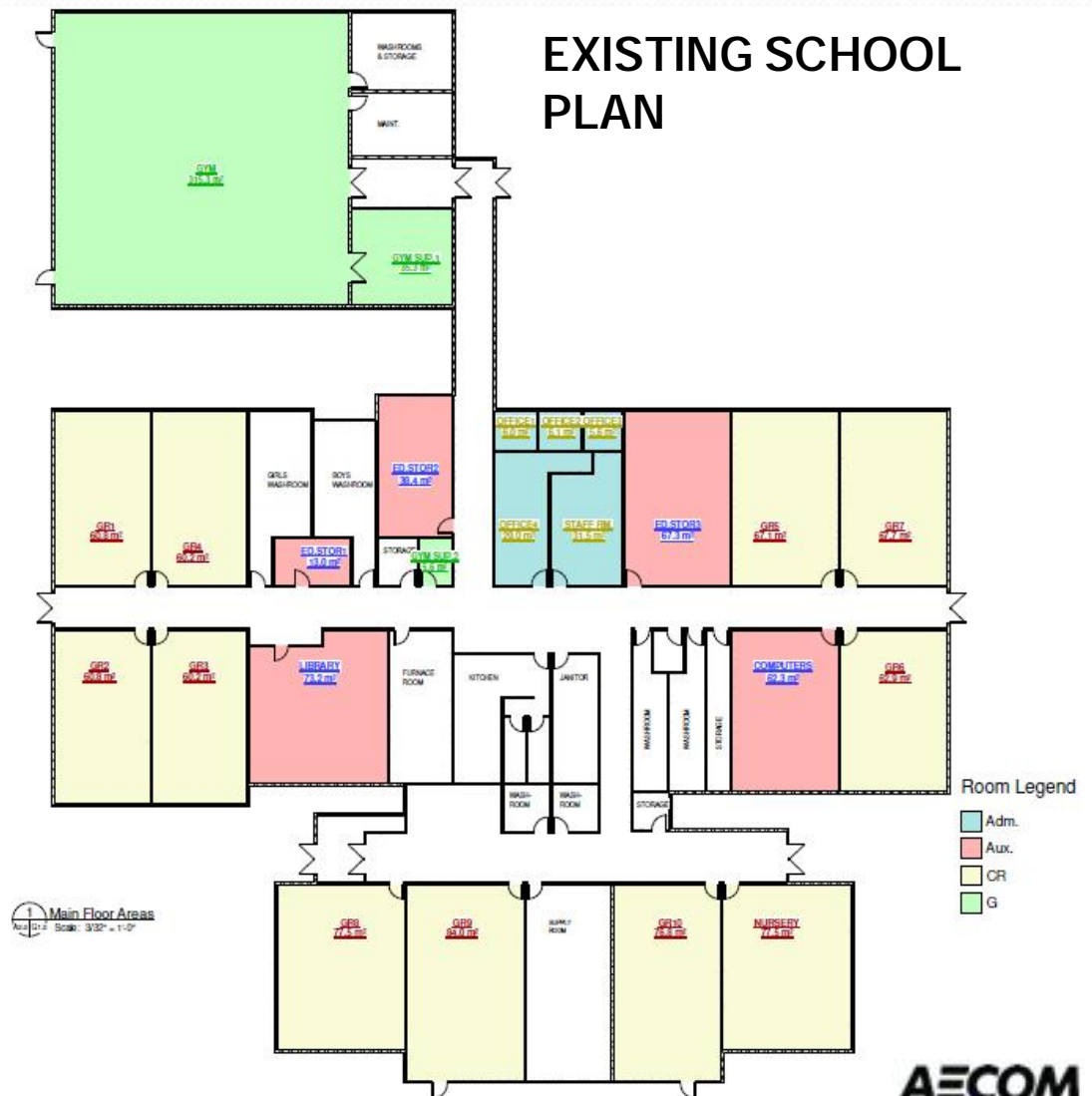
- Based on MSI - bundle approach;
- Consideration of Alternative Delivery approaches – Construction Management/Design-Build, and
- Interim Critical Health, Safety and Environment fixes for some existing schools
- Community Infrastructure Needs Assessments – substantial additional costs for the next 25 years



# Lake Winnipeg Schools Bundle

## Little Grand Rapids FN Abbalak Thunderswift Memorial School

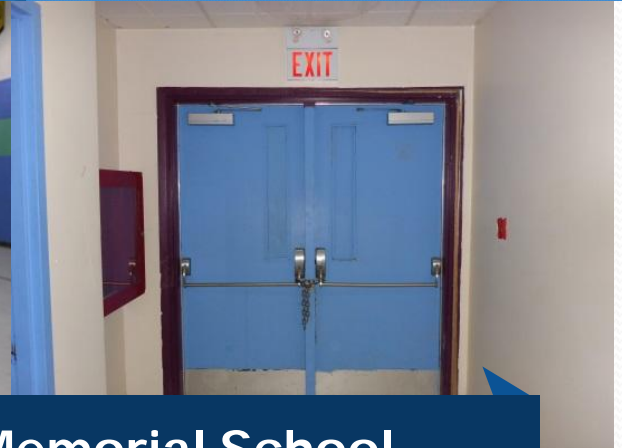
- Multiple building additions; inefficient layout
- K4 to Grade 9, only
- Classrooms and other Spaces smaller than ISC School Space Accommodation Standards
- No Cafeteria
- No Technology, Home Economics
- Significant health and safety concerns





# Lake Winnipeg Schools Bundle

*Significant health and safety concerns; contamination impacting school crawl space; site too small for a High School*



**Abbalak Thunderswift Memorial School  
Critical Health, Safety & Environment  
Upgrades**

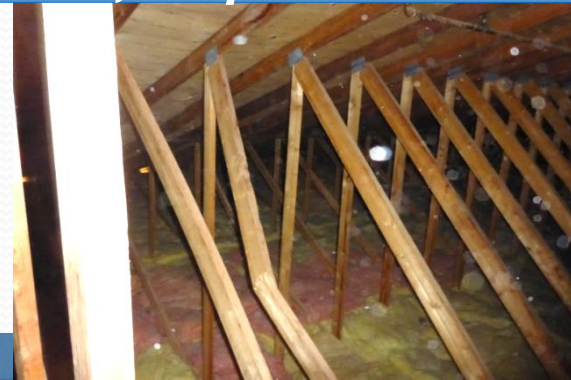




# Lake Winnipeg Schools Bundle

*Broken roof truss; falling light cages; doors chained shut; no PA system, smoke alarms or sprinkler system; no potable or hot water*

Drink OUR water. It's only  
contaminated we do and  
We are still  
= alive =



Abbalak Thunderswift Memorial School – Critical Health, Safety & Environment Upgrades

Don't Sit under the  
CAGES One almost  
fell on  
US

I WORRY I MIGHT  
NOT SEE MY  
CHILDREN AFTER  
SCHOOL

DANGER

All DOORS are CHAINED  
NO –PA System  
NO –Smoke Alarms  
NO – Sprinkler Systems

DANGER

All DOORS are CHAINED  
NO –PA System  
NO –Smoke Alarms  
NO – Sprinkler Systems



# NWOSB

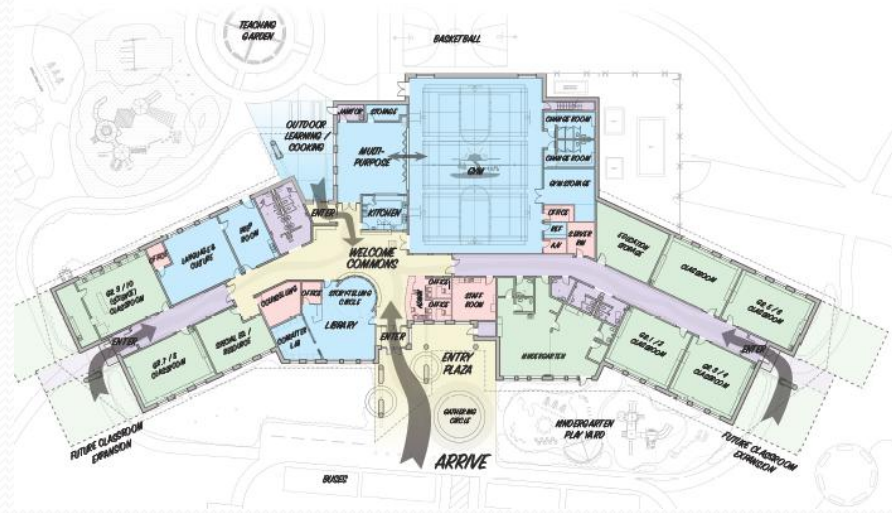
AECOM – Design-Build Project Manager

Wapekeka First Nation  
Shoal Lake #40 First Nation



# North West Ontario Schools Bundle

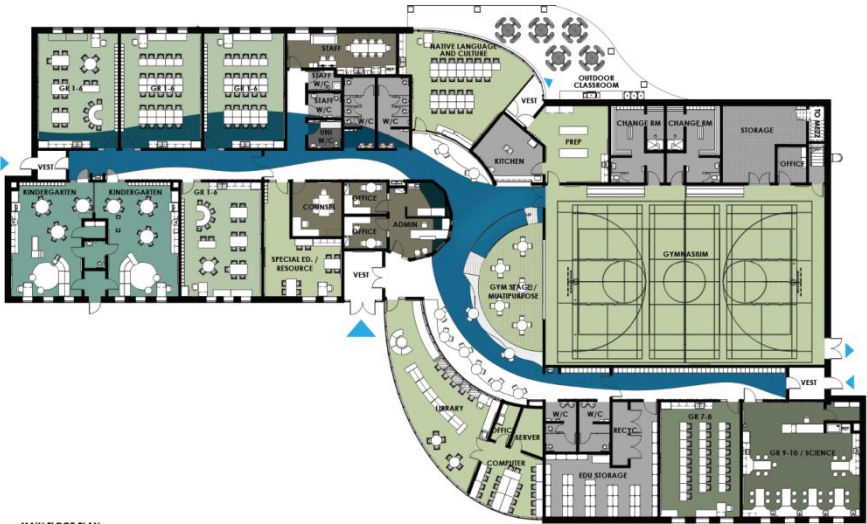
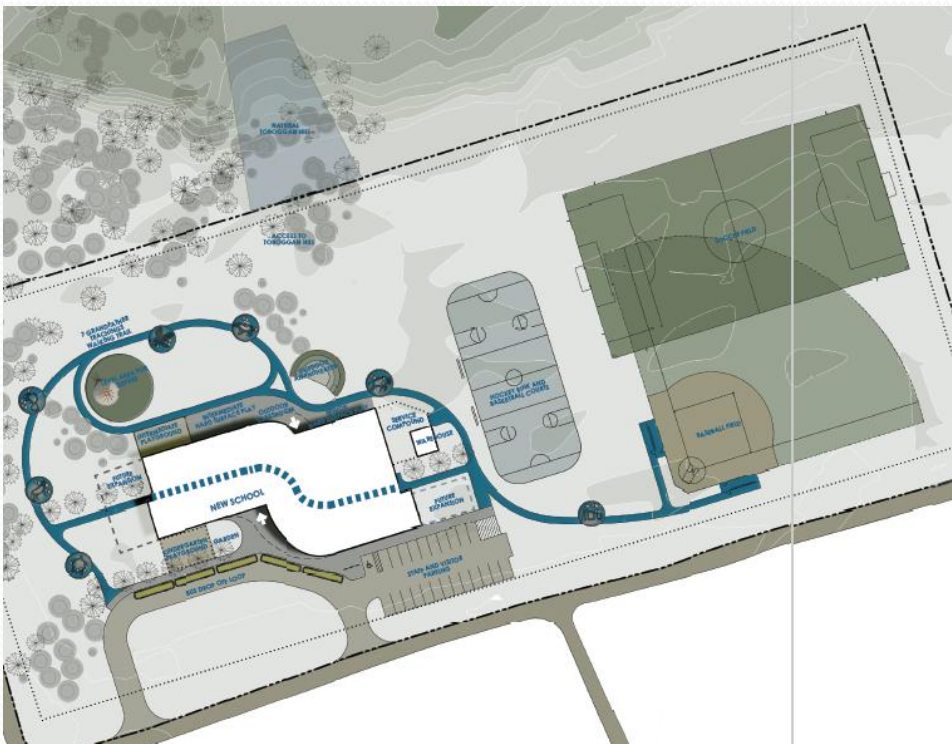
*Wapekeka First Nation School - Design-Build, 30% Design*





# North West Ontario Schools Bundle

*Wapekeka First Nation School - Design-Build, 30% Design*



MAIN FLOOR PLAN



EXTERIOR VIEW OF MAIN ENTRY



# North West Ontario Schools Bundle

*Shoal Lake No. 40 - Design-Build, 30% Design*

- LEGEND**
- LEARNING
  - CIRCULATION
  - SUPPORT
  - KITCHEN/REP
  - GYMNASIUM
  - GYMNASIUM SUPPORT
  - CANOPY/OVERHANG ABOVE





# Gap Analysis Studies

MSI Community Needs Assessment  
LWSB Community Infrastructure Needs  
Assessment



# 2017-2019 Gap Analysis Studies

*First Nations Communities - significant infrastructure deficiencies*



## Purpose

- Identify infrastructure gaps
- Ensure schools have the necessary supporting public infrastructure
- Allow ISC to prioritize funding



# 2017-2019 Gap Analysis Studies

*MSI and LWSB: What is funded for new schools vs. what is required by Communities?*

- School Funding stops at the School Site boundaries
  - Includes building(s), site work, fit-up, PM and design consultants, survey and testing, LEED, contingencies – but only within school site boundaries.
- Community Needs Assessments - Gap Analysis Studies
  - Required to identify requirements for immediate delivery and long-term recapitalization and repairs related to operating schools;
- Plus significant ongoing O&M costs over 25 years.
- Needs will increase:
  - e.g. Poplar River - Community population now 1,229; expected to grow to 2,033 by 2042.





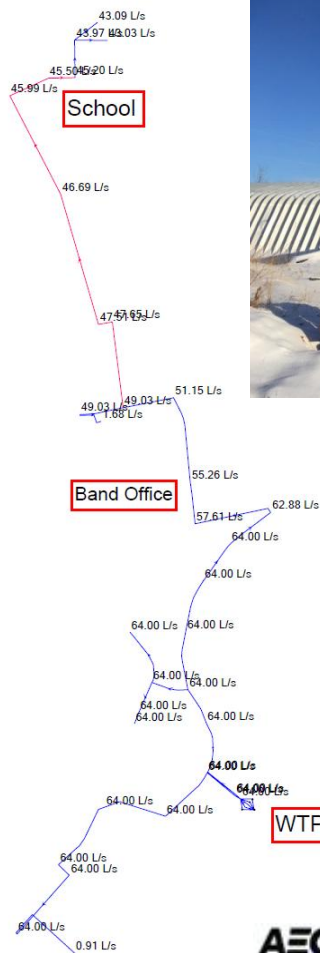
# 2017-2019 Gap Analysis Studies

*Significant additional funding required to support new schools in both the short- and long-term.*

Teacherages



Community Buildings and Vehicles



Color Coding Legend  
Pipe Diameter (mm)

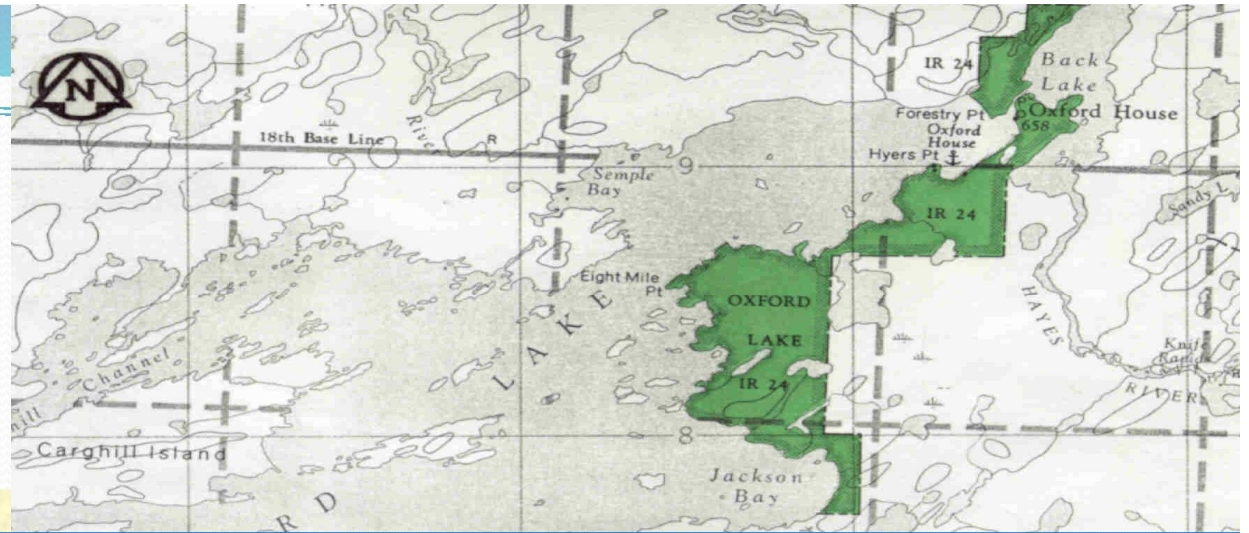
Blue line	≤ 150.0
Pink line	≤ 200.0
Red line	Other

Water System Modeling

**AECOM**



AECOM /Other:  
ACRS and  
Sewer and Water  
Feasibility Studies  
provided the basis for  
determining future  
Community needs.



***Bunibonibee Cree Nation Sewer and Water Feasibility Studies/Updates –  
Community Planning and Infrastructure Systems Recommendations***





# 2017-2019 Gap Analysis Studies

*Little Grand Rapids FN Sewer and Water Feasibility Study 2012/2017*





# 2017-2019 Gap Analysis Studies

## LWSB - Community Planning – future housing, lots, roads, servicing



Pauingassi FN Water and Wastewater Feasibility Study 2007

Community Planning and Infrastructure Assessments / Conceptual Design and Costing

- Remote community
- Rock, peat bog and landfill constraints.
- 600 people – growth projections?
- Social issues impact school planning



# 2017-2019 Gap Analysis Studies

## *Need to address Schools' Operating and Maintenance requirements*

- Provision of adequate, long-term **O&M budgets for schools**, and **trained maintenance staff**.
- Provision of adequate **electric power** and **high-speed internet** servicing essential to providing educational opportunities consistent with those in provincial systems. Regional high-speed internet services being developed for Communities involved in the MSI and LWBS initiatives.
- **School buses** and **fire trucks** are essential for operating and protecting new schools;
- **Community buildings**, such as School Bus Garages, Fire Halls, Arenas and Hockey Rinks are also important to the operation of new schools.



# 2017-2019 Gap Analysis Studies

## *Basic Community needs have to be met for schools to function*

- Poplar River FN - requires new Water Treatment Plant with expanded water reservoir, and new lagoon in order to address **potable water and fire protection** requirements, and **sewage** from new school;
- Better **roads and bridges needed for** vehicles and pedestrians.
- **Road construction and maintenance equipment** is also needed;
- **Road upgrading, repair and maintenance** programs essential to getting students to school; maintaining buses - require appropriate equipment, crushed gravel and trained workers.
- The **average life of a school bus** travelling daily on local roads in a remote community is 3 to 5 years; ability to service buses locally is limited, and **spare buses** are needed so those requiring maintenance can be sent out on the Winter Road.





# 2017-2019 Gap Analysis Studies

*Local O&M Capabilities: Water and Wastewater Operators Training*





# 2017-2019 Gap Analysis Studies

*Capacity building tied to partnering – new schools provide opportunities*

Equipment Purchase/  
“Work to Own”

Local Materials – Rock  
Crushing

Training

Project Accommodation  
Assistance





# Wrap-up

*Education is a key component of the  
TRC - 94 Calls to Action,  
and a basic right of all Canadians*



# First Nation Schools and Community Infrastructure Needs Assessments

*It's about Building Communities!*

Costs are substantial.

The investment is long-term.

New On-Reserve Schools are key to Social, Economic, Cultural, Environmental and Governance Sustainability of First Nation Communities.

Supporting design, construction and long-term O&M for new schools goes far beyond the school sites, and requires Community Building and Community Capacity Building.



# Questions?

