



Department of Public Works
Building Infrastructure Design & Construction

SITE INVESTIGATION SUMMARY GLACE BAY PP-6 SCHOOL

June 16, 2023

Glace Bay PP-6 school – Site Investigation Summary

The Department of Public Works has performed an evaluation and investigation of 7 potential sites in Glace Bay, Dominion and Reserve Mines for a new PP-6 school. A desktop study eliminated 5 of the sites and combining the remaining two sites is recommended for the new PP-6 school. The general area is known to be underlain with historic coal mines and these mines contributed to the difficulty in finding sites that are structurally sound. A summary of the conditions at each site can be found in **Appendix A**.

Following is a summary of the results of DPW's investigation of the site as well as a risk matrix for the site.

Enhancements:

Based on the information provided by the Department of Education & Early Childhood Development, DPW is proceeding with the understanding that there will be no enhancements and the school program consists of 225 students, school bus access, 30 staff/visitor parking spaces and 0 student parking spaces.

The proposed site in Reserve Mines is a combination of several adjacent land parcels currently occupied by the existing Tompkins Memorial School, plus, an adjacent parcel previously occupied by Reserve District High School, plus, portions of three other adjacent parcels. See Figure 1.

Glace Bay PP-6 school – Site Investigation Summary

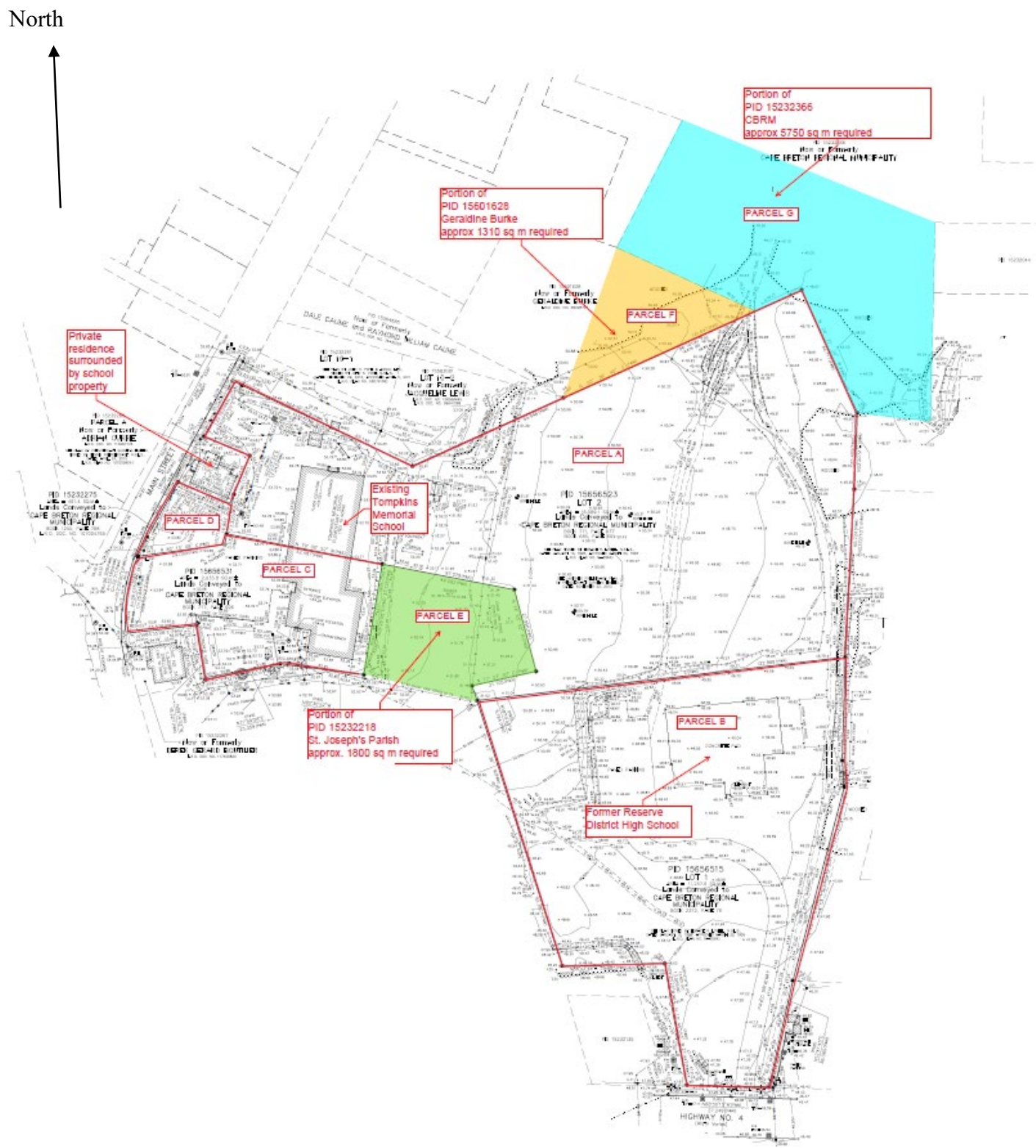


Figure 1 – Proposed Site Location; Ownership Map

Glace Bay PP-6 school – Site Investigation Summary

Parcel	PID	Address	Area	Owner	Comments
A	15656523	60 Main St.	4.2 acres	CBRM	Existing Tompkins Memorial School
B	15656515	2279 Highway 4	2.75 acres	CBRM	Former Reserve District High School
C	15656531	60 Main St.	0.8 acres	CBRM	Existing Tompkins Memorial School
D	15232275	Main St.	0.11 acres	CBRM	Forms portion of parking lot for existing Tompkins Memorial School
E	15232218	26 Main Street	2.5 acres	St. Josephs Parish	Approximately 0.45 acres required from this parcel. Owner is willing to sell.
F	15601628	Main St.	0.78 acres	Geraldine Burke	Approximately 0.35 acres required, Owner is willing to sell. Potential to purchase entire parcel.
G	15232366	Main St.	5 acres	CBRM	Approximately 1.45 acres required, Owner is willing to sell.

CBVRCE has indicated that the existing school must remain open while the new school is being constructed. If this site is selected, there will be construction coordination challenges. The existing school would remain open while the new school is constructed on either the northeast side of the site or the adjacent site to the south. (Sample Test Fit shown in Figure 2 below). Once the new school is completed, the students would be relocated to the new school and the old building would be demolished.

Advantages:

- Centrally located in the catchment area. Walking distance and bussing requirements for students remains the same.
- Minimal land purchase costs.
- Sufficient land for a bus loop.
- Sufficient land for staff and visitor parking.
- Existing infrastructure in place: 30 km/hr school zone speed limit on Main St., water, sanitary sewer, three phase power.
- Frontage on Main Street at two locations (approx. 54 metres and 21 metres of frontage)
- Frontage on Trunk 4 (approx. 27 metres)
- Currently sidewalks on Trunk 4 and Main Street.
- Students can remain in existing school during construction of new school.
- Contractor access during construction can be from Trunk 4, allowing for effective separation of students from the construction activities.
- Three phase power is currently available on Trunk 4.
- Ability to provide new full-sized sports field.

Glace Bay PP-6 school – Site Investigation Summary

Challenges:

- Mine workings restrict location of school on the site.
- New school will be built adjacent to existing occupied school.
- New school would either be located further away from Main Street or on the former Reserve District High site.
- Phasing of site elements such as parking may be required.

Opportunities Available by developing existing Tompkins Memorial site:

- Separation of bus and staff/visitor/student access driveways. There are several existing driveways currently accessing Main Street that are not well defined and have the potential for conflict between various types of vehicles entering the site.
- Opportunity to remove one of the existing access driveways on Main Street that currently has limited sight distance to approaching vehicular traffic.
- Opportunity to provide new access driveway at Trunk 4 as well as provide defined site entrance and exit points.
- Improved pedestrian and vehicle site circulation.
- Opportunity to have all the school functions within the school property. Currently the adjacent St. Joseph's Parish parking lot is used for student drop off and pick up and the existing sports field is on Parish land.

Glace Bay PP-6 school – Site Investigation Summary

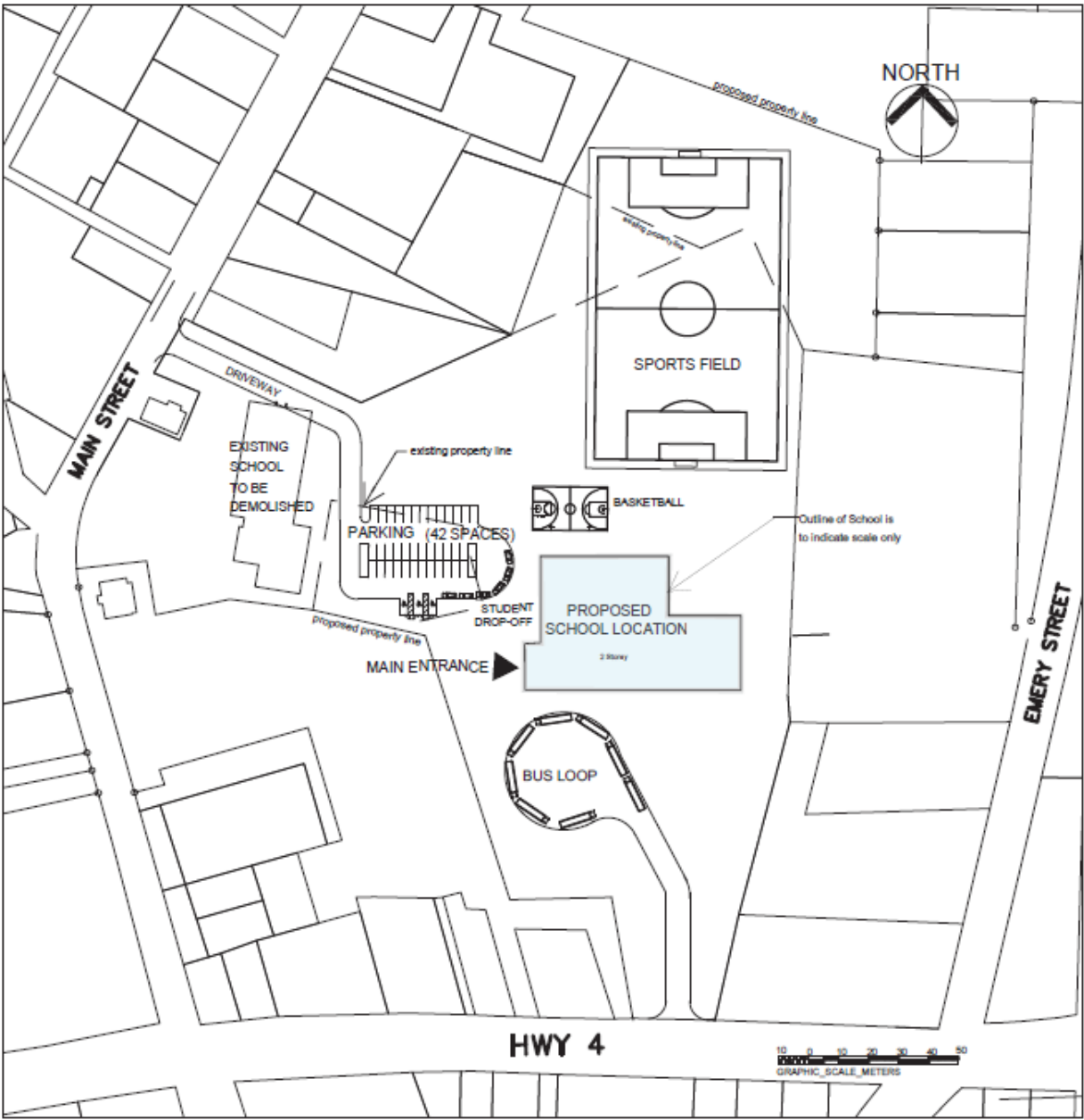


Figure 2 – Proposed Site Location; Conceptual Test Fit

Glace Bay PP-6 school – Site Investigation Summary

Constraints	Opportunities
Requires purchase of land from three adjacent landowners.	Existing school will remain in service until new school is complete.
Curvature of Main Street will impact driveway location.	Informal agreement with adjacent property owner for use of land for sports field can be removed and all school related activities will take place on school property.
Existing school will impact access to site during construction.	Replacement of existing undersized sports field with regulation sized field.
Little separation available between new and existing school during construction.	Existing use of adjacent church parking lot for student drop off and pick up can be halted with relocation of drop off to school property.
Existing ATV desire lines traverse the site. The new sports field will require fencing or other vehicle deterrents.	

Site Investigations:

Site investigations completed to date include:

- Topographic Survey of existing Tompkins Memorial School and former Reserve District High School PIDs
- Legal Survey of existing Tompkins Memorial School and former Reserve District High School PIDs
- Phase I ESA
- Phase 2 ESA at south-east corner of former Reserve District High School PID
- Geotechnical Investigation of Tompkins Memorial School and former Reserve District High School PIDs. The Geotechnical Investigation included field drilling to identify potential mine working locations.
- Transportation review by DPW Highways Group.
- Servicing review by DPW Building Design Group.
- Review of potential for underground mine workings by Natural Resources and Renewables.

Site Investigation Relevant Information:

Topographic Survey	<ul style="list-style-type: none"> • Existing sports field is relatively flat and is undersized. • There are gentle slopes and grading of approximately 2% at parking lots, driveways, and land east of the existing Tompkins Memorial School. • There is a small area with up to 8% slopes between the parking lot for the former Reserve District High School and the southern edge of the adjacent Tompkins Memorial site. This slope can be incorporated into or mitigated with renewed site grading. • Adjacent private and CBRM properties have gentle slopes of approximately 2 - 3%.
--------------------	--

Glace Bay PP-6 school – Site Investigation Summary

Legal Survey	<ul style="list-style-type: none"> • The existing Tompkins Memorial School building occupies two separate PIDs. The parking lot and driveways extend over three PIDs. • The existing sports field is located partially on school property and partially on land owned by the adjacent St. Josephs Parish. • There is currently an informal agreement between the church, the community and Tompkins Memorial School that allows the school and community to use the church land for a field. The community fenced the field in recent years to prevent off-road vehicle access. • There is a privately owned PID with frontage on Main Street that is located within the parking lot of the existing Tompkins Memorial School. • There is a minor encroachment onto school property of an adjacent private driveway.
Phase 1 ESA	<ul style="list-style-type: none"> • Phase 1 ESAs were completed for both the existing Tompkins Memorial School site and the former Reserve District High School site. • A Phase 2 ESA was recommended for the southeast corner of the former Reserve District High School site due to the proximity to an gas station with underground storage tanks. • Based on the age and construction of the original Tompkins Memorial School building, a Hazardous Building Materials Assessment should be completed prior to renovation or demolition of building. • UFFI is not expected to be present. • Radon gas testing has not been completed for this site. The NS Department of Natural Resources and Renewables indicates the risk level for radon in this area to be medium risk.
Partial Phase 2 ESA: Former Reserve District High School	<ul style="list-style-type: none"> • No exceedances for BTEX/TPH to the ECC Tier 1 EQSs were noted in the soil or water samples collected during this Phase II ESA. • Metal exceedances in soil to the ECC Tier 1 EQSs were concluded to reflect the background conditions in the Sydney Coal Field. The soil exceedances for aluminum, arsenic and iron were all noted to be within background ranges. • Soils exhibiting exceedances will need to be managed on-site to ensure worker health and safety. Soils are suitable for re-use on-site as architectural fill but may not meet geotechnical suitability requirements. • No further investigation is recommended at this time.
Transportation	<ul style="list-style-type: none"> • Both Trunk 4 (Sydney Road) and Main Street are posted at 50kph. • There is an existing sidewalk from Trunk 4 along Main Street, on the school side of the road.

	<ul style="list-style-type: none">• There is an existing sidewalk along the north side of Trunk 4 that will also service the school.• Pedestrian crossings of Trunk 4 are close, via the signalized intersection to the west, and a pedestrian actuated crosswalk at Lorway Avenue to the west.• There will be a pedestrian desire line from Main Street to the school via the Church parking lot.• There is a minor driveway encroachment by the residential units adjacent to the north boundary of the school site. The owner of the encroaching driveway should be notified. There is sufficient land on the private driveway land to remove the encroaching driveway and maintain acceptable driveway width.• A pedestrian sidewalk/pathway should be included from the frontage along Trunk 4 into the school site.• Provision for adequate student pick up/drop off can be accommodated on site, as there is insufficient width along Main Street to provide this.• There is currently an agreement between the existing Tompkins Memorial School and the adjacent church to allow parents to drop off and pick up students by using the church driveways as a drop off loop. Relying on an agreement with the Church long term is not the best way to manage pickup/drop off.• There are no anticipated infrastructure changes required to the existing public roads and intersections.• The existing Tompkins Memorial School has approximately 75 metres of frontage on Main Street in Reserve Mines. The existing Tompkins Memorial School site frontage is located on a curve in the road and has sufficient sight distance to the north. The sight distance to the south is not ideal, but it has existed for many years. There is an opportunity to design future site access to eliminate any issues with the reduced sight line to the south.• The adjacent former Reserve District High School land has approximately 27 metres of frontage on the Trunk 4 highway. There is sufficient sight distance to the west, the sight distance to the east is reasonable and has been in place for many years.• There are sidewalks on the same side of the road as the proposed school site at both the Main Street and Trunk 4 locations.• The existing student/staff/drop off and bus driveways are a very poor layout for access. There is currently a high potential for conflict between vehicles and pedestrians. There is an opportunity to design improved access and a high potential to separate bus access from parent drop off, pedestrians, and staff access.• The existing parking configuration at Tompkins Memorial School is not well defined.
--	---

Glace Bay PP-6 school – Site Investigation Summary

Servicing	<ul style="list-style-type: none">• The proposed sites are serviced by CBRM's water distribution system.• Minimal on-site storm water management will be required. Some localised ponding is currently experienced due to active ATV trails through the back portion of the site. ATV trail areas will need to be re-graded for positive drainage.• Sanitary sewage is discharged to the CBRM wastewater collection system.• Three phase power is currently available at the site with a pad mount transformer located north of the existing school.
Geotechnical	<ul style="list-style-type: none">• The fieldwork for the geotechnical investigation consisted of advancing nine (9) boreholes, with depths extending from 17.5 m to 25.1 m below existing ground surface (BGS).• In general, the site is underlain by topsoil and fill overlying native glacial till, weathered bedrock, and competent bedrock.• During this preliminary investigation, potential mine workings were encountered in a single borehole advanced within the site. The borehole with potential mine workings is located at the north east corner of the site with a void approximately 1.4 metres thick located at a depth of 13.8 metres BGS. The site test fit exercise presented in this report accommodates the found void by placing the sports field in this area.

A risk matrix can be found in **Appendix B**.

Summary

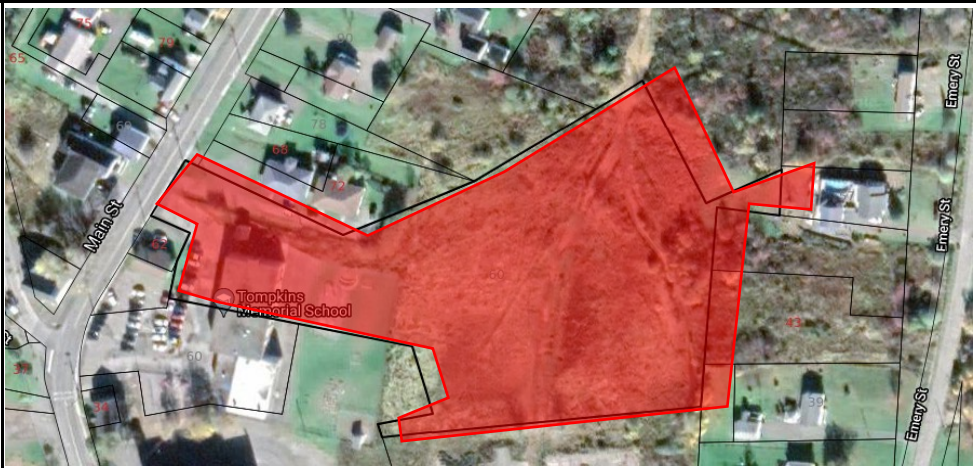


The site evaluation/investigation, site development cost and risk assessment completed for the existing Tompkins Memorial School on Main Street and the former Reserve District High School on Trunk 4 indicate that this site would be a suitable location for the new school.



It is important to note that if school programming requirements are revised or if enhancements are added, a greater land area may be required. and this may impact the project schedule and the ability to locate the new school on the existing site. Land acquisition requirements may increase proportionally.

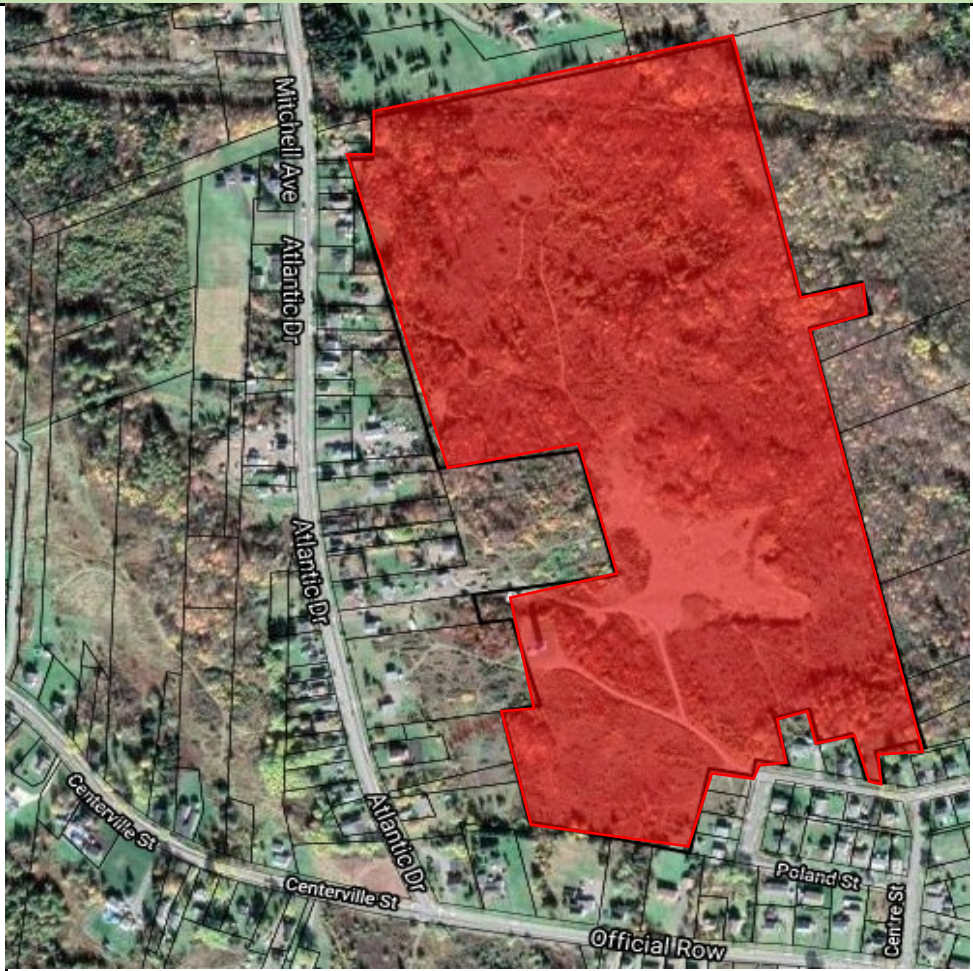
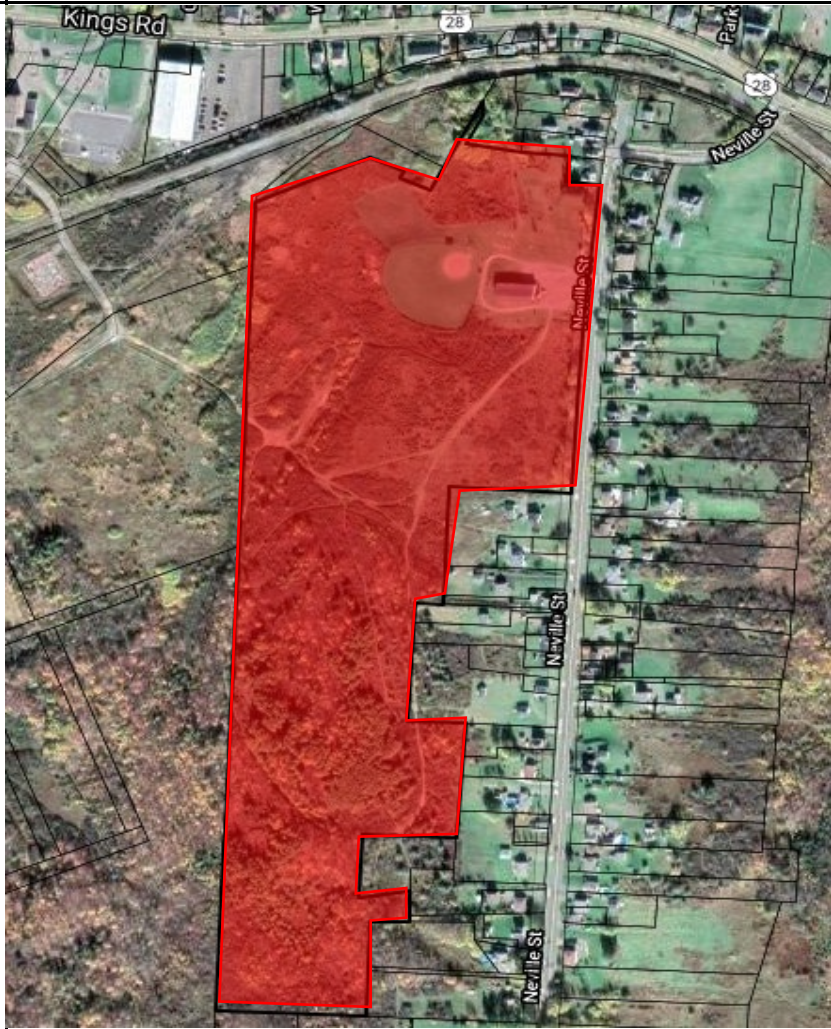
Glace Bay PP-6 school – Site Investigation Summary


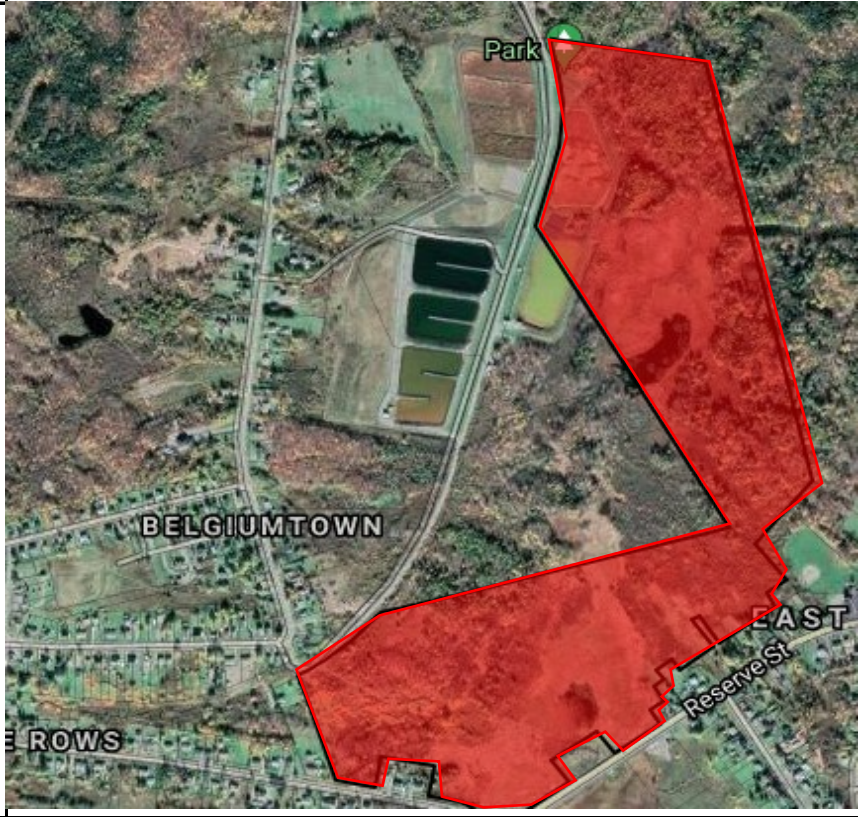
Appendix A – Summary of Sites Reviewed


Appendix A - Summary of Sites Reviewed for Glace Bay PP-6

PID	Location	Owner	Comments	Map
15656523	Tompkins Memorial School 60 Main Street, Reserve Mines	CBRM	<p>Geotechnical investigation and Phase 1 ESA complete. One borehole identified a 1.4 metre thick void at north east corner of site (mine workings expected in this area of site).</p> <p>No mine workings encountered in other boreholes.</p> <p>Geotechnical Consultant has recommended a more focused investigation if the site is selected and a concept plan identifying building location is prepared.</p> <p>4.2 acres available.</p> <p>Topography is not an issue</p>	
15656515	Former Reserve District High School 2279 Highway 4, Reserve Mines	CBRM	<p>Geotechnical investigation and Phase 1 ESA complete.</p> <p>Direct access to Hwy No 4. Site is adjacent to limits of known mine workings (similar to Tompkins Site)</p> <p>2.75 acres available.</p> <p>Topography is not an issue.</p>	
15656531	Main Street Reserve Mines	CBRM	<p>Existing Tompkins Memorial School playground and a portion of the parking lot and school building are located on this property.</p> <p>34,848 sf (0.80 acres) is available.</p> <p>Topography is not an issue</p>	

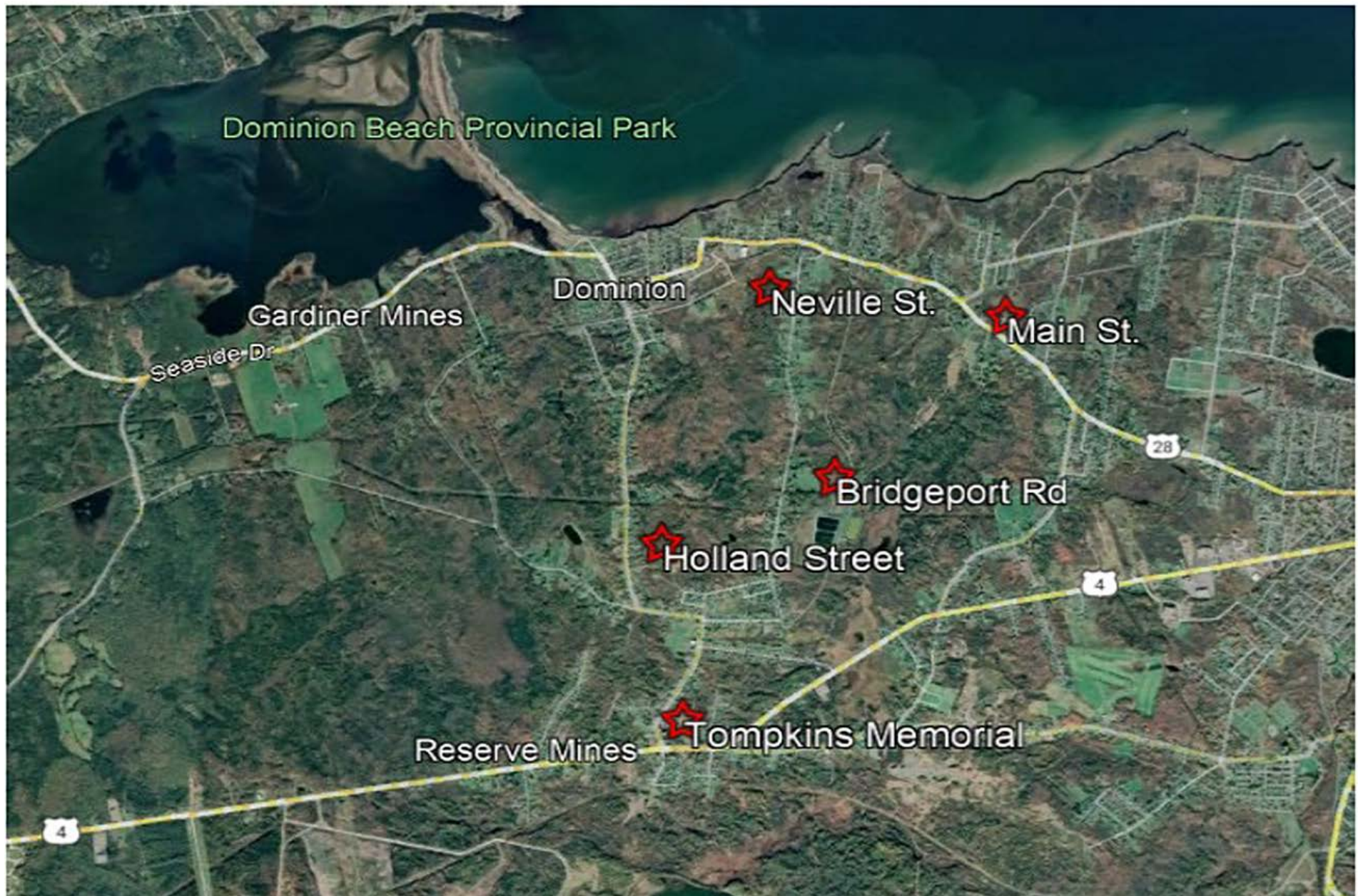
PID	Location	Owner	Comments	Map
15232275	Main Street Reserve Mines	CBRM	<p>Tompkins Memorial School, currently used as a parking lot for the school.</p> <p>4800 sf (0.11 acres) is available.</p> <p>Topography is not an issue.</p>	
15232283	62 Main Street, Reserve Mines	Privately Held	<p>Private residence, exterior recently renovated.</p> <p>Property is surrounded on 3 sides by the Tompkins Memorial School parking lots and driveways. The fourth side faces Main St.</p> <p>3261 sf (0.075 acres)</p>	

PID	Location	Owner	Comments	Map
15233877	197 Holland St., Reserve Mines	CBRM	Large site. Municipal water tower located on south west corner of site. Mine workings known to underlay entire site. Located within 1 km of mine water treatment facility.	
15381320	Dominion Legion 76 Neville St., Dominion	Royal Canadian Legion	Large site. 43 Acres. Significant topography issues. Mine workings known to underlay site. NS Energy and Mines has advised that this site is not suitable for a school due to mine workings and known issues with mine workings relatively close by.	

PID	Location	Owner	Comments	Map
15830169	Bridgeport Road, Reserve Mines	PWGSC	<p>22 acre site owned by the PWGSC.</p> <p>Occupied entirely by a mine water treatment facility. Not available for school site.</p> <p>Mine workings known to underlay entire site.</p>	
15523723	Haulage Road, Reserve Mines	PWGSC	<p>Large site owned by PWGSC, spread over three areas. Total area is approximately 140 acres.</p> <p>Appears to be 2 fairly large lakes/ponds/wetlands on the property.</p> <p>Land on the South side of Reserve St side is low lying and has several watercourses crossing the site.</p> <p>A portion of the site is occupied by mine water treatment facility, entire site is within 1 km of mine water treatment facility.</p> <p>Mine workings known to underlay entire site.</p>	

PID	Location	Owner	Comments	Map
15450349	1260 Main St., Glacé Bay (Bridgeport)	CBRM	Site of former Bridgeport School. Subsidence is known to be an issue at this location.	

Glace Bay PP-6: Location of Reviewed Sites



Appendix B – Risk Matrix

GLACE BAY PP-6 RISK MATRIX

Potential Risks	Proposed Site: Lands of existing Tompkins Memorial and former Reserve District High School	Cost	Schedule
Environmental Remediation of Site	<ul style="list-style-type: none">• potential on site contamination from former UST's	Mid	Low
Demolition of Existing School	<ul style="list-style-type: none">• regulated material removal and disposal	High	Mid
Radon Gas	<ul style="list-style-type: none">• Potential for radon gas – should test for presence/concentration to inform mechanical designers.	Low	Low
Site Access	<ul style="list-style-type: none">• Current site access at Main Street is unsafe. Redesign of access driveways is required.• Pedestrian access requires improvement for safe access to the new school.	Mid	Low
Geotechnical	<ul style="list-style-type: none">• Potential for mine workings.• Field investigations and historical mining information reviews indicate that the risk of encountering mine workings at the location proposed for the school building is low.	Mid	Mid
Property Acquisition	<ul style="list-style-type: none">• Acquisition of land from three land owners is required.• Currently all 3 land owners have agreed to sell their land but purchase is not complete.	Low	Low