



Town of Amherst
North Tyndal Wellfield Advisory Committee Meeting
Agenda

Date: **Tuesday, October 7, 2025**
Time: **4:00 pm**
Location: **Council Chambers, Town Hall**

	Pages
1. CALL TO ORDER	
1.1 Territorial Acknowledgement	
"I would like to acknowledge that our gathering today is taking place in Mi'kma'ki (MEEG-MA-GEE), the traditional, unceded and ancestral territory of the Mi'kmaw people. I would also like to acknowledge that Nova Scotia has another unique people, the people of African descent whose legacy and contributions date back over 400 years predating confederation of this land. We are all treaty people."	
1.2 Approval of Agenda	
1.3 Acceptance of Minutes - April 8, 2025	2 - 4
2. Amherst Water Utility Updates	5 - 6
3. Tyndal Road Salting	7 - 13
4. Adjournment	

TOWN OF AMHERST
North Tyndal Wellfield Advisory Committee Meeting
Minutes

Date: April 8, 2025
Time: 4:00 pm
Location: Council Chambers, Town Hall

Members Present Rob Small, Town of Amherst, Mayor, Chair
Terry McManaman, Town of Amherst, Councillor
Anthony Fromm, Cumberland County, Councillor
Keith Thompson, Town of Amherst, Citizen Representative
Daniela McKay, Cumberland County, Citizen Representative
Justin Waugh-Cress, Cumberland County, Director of Public Works

Members Absent Fred Gould, Cumberland County, Deputy Mayor

Staff Present Aaron Bourgeois, Town of Amherst, Director of Operations
Andrew Fisher, Town of Amherst, Director of Planning & Economic Development
Natalie LeBlanc, Town of Amherst, Municipal Clerk
Cindy Brown, Town of Amherst, Administrative Assistant

1. CALL TO ORDER

The Clerk called the meeting to order.

1.1 Territorial Acknowledgement

The Clerk gave the Territorial Acknowledgement.

1.2 Introduce Members

The Clerk introduced the members of the Committee.

1.3 Election of Chair and Vice Chair

The Clerk asked for nominations for the position of Chair. Councillor McManaman nominated Rob Small. The Clerk called for any further nominations, there being none, Rob Small accepted the position of Chair. The Clerk then asked for nominations for the position of Vice Chair. Rob Small nominated Councillor McManaman. The Clerk called for any further nominations, there being none, Councillor McManaman accepted the position of Vice Chair.

1.4 Approval of Agenda

Keith Thompson asked to add General Discussion to the agenda. General Discussion was added as item 5.1.

Moved By Councillor Fromm

Seconded By Daniela MacKay

That the agenda be approved with the addition of 5.1 General Discussion.

Motion Carried

1.5 Acceptance of Minutes - November 14, 2023

The Chair called for any errors or omissions in the minutes. There being none, the minutes of the November 14, 2023 meeting of the North Tyndall Wellfield Advisory Committee were accepted as included in the agenda package.

2. Terms of Reference and Role of Committee

Aaron Bourgeois reviewed the Committee Terms of Reference. Information item only.

3. Nova Scotia Department of Transportation and Infrastructure's Role

Aaron Bourgeois indicated that at the last meeting of the Committee the question was raised as to what Adam Cameron, who is with Nova Scotia Department of Transportation and Infrastructure, role is with the Committee. Aaron indicated that Mr. Cameron does not necessarily have a role unless there is an emergency along the right-of-way of route 366. The Chair asked what was the genesis of the question raised at the previous meeting, Aaron replied that it was around sanding of the road.

Information item only, no direction given or action required.

4. Tyndal Road Sanding vs Salting

Andrew Fisher indicated that when the Protection Strategy was last renewed the issue of sanding versus salting along this particular section of the Tyndal Road came up and that it was recommended by the Hydrologist Colin Walker to not introduce salting along this area. Andrew added this issue came up again 2018 as a safety issue. At that time staff reached out to the RCMP requesting accident statistics in the area, the RCMP responded that accidents in the area were no more significant than along any other stretch of that highway. Aaron Bourgeois will forward a copy of this report to the Committee. Andrew added that in light of the RCMP report that staff are of the opinion to follow the hydrologists recommendation and continue to use sand to protect the water supply.

Daniela McKay stated that she travels the Tyndal Road daily and does have concerns with the continued use of sand noting that it significantly decreases the speed of traffic along this area and has caused damage to her windshield annually. The Chair asked if there are other options to use other than sand or salt. Mr. Bourgeois replied that there could potentially be other options however these have not been recommended or explored, adding that Nova Scotia Department of Transportation strictly uses salt and sand in Nova Scotia, and if there are other options he is not sure of what the environmental repercussions to using something else would be.

Councillor Fromm asked if the Committee has access to the hydrologists report where salting is recommended. Aaron replied staff would look into this. He also asked how far the actual wellfield is from the highway. This can be answered during the tour.

Daniela further asked why salt is permitted after this particular section of the highway, as the residents there are all on private wells. Staff could not speak to this.

5. Wellfield Tour Date

A tour of the wellfield was scheduled for Thursday, April 17th at 1:00 p.m.

5.1 General Discussion

Mr. Thompson asked about the Irving Forest Management Plan and if it's just on their holdings? Aaron confirmed yes. Mr. Thompson asked if there are any other forestry plans or is it "hands-off? Aaron replied it is mostly hands-off. Mr. Thompson is wondering if this is something the Committee should look at, he is concerned about mature trees in the area and what could happen as a result of a potential hurricane or forest fire, and suggested that a risk analysis be conducted. He added water is an asset however sometimes it doesn't get the attention it should.

Moved By Keith Thompson

Seconded By Councillor Fromm

That the North Tyndal Wellfield Advisory Committee recommend staff conduct a risk analysis of the wellfield area outside of the Irving Management Plan and further recommend a plan if required to mitigate any risks.

Motion Carried

Mr. Thompson also asked about wellfield boundary lines and if they are delineated on the ground by zone or drawn on a map? Aaron Bourgeois said he is not sure, could be a little of both, he will get an answer.

Mr. Thompson further asked about property ownership around the wellfield. Andrew Fisher answered that in looking at the map, all of Zone 1 is owned by the Town of Amherst, that a good 3rd of Zone 2 is Crown owned land, and the rest is Town of Amherst and private ownership. Mr. Thompson asked if private property owners have to submit anything or if there is any procedure they need to follow before doing any work on their land. Andrew Fisher replied that he believes that to the south of the road they have to submit any plans for work on their land to this Committee.

Mr. Thompson asked if Irving has submitted an annual plan or if they are required to do so? Aaron Bourgeois said no, they haven't submitted a plan, adding that Nova Scotia Department of Environment (NSDoE) has asked the same question recently, and that he believed that NSDoE may currently be seeking a plan from them.

6. Next Meeting Date

The next meeting of the North Tyndal Wellfield Advisory Committee was scheduled for Tuesday, October 7, 2025 at 4:00 p.m. in Town Hall Council Chambers.

7. Closed Session

Moved By Councillor McManaman

Seconded By Councillor Fromm

That the Committee go into Closed Session.

Motion Carried

8. ADJOURN

There being no further business, the Chair adjourned the meeting.

Natalie LeBlanc
Municipal Clerk

Rob Small
Chair

MEMORANDUM

To: North Tyndal Wellfield Advisory Committee
From: Aaron Bourgeois, Director of Operations
Date: October 3, 2025
Subject: Amherst Water Utility – Wellfield Update

Since the last meeting of the North Tyndal Wellfield Advisory Committee, the Amherst water utility have completed or are working on the following projects related to the wellfield.

SCADA SYSTEM UPGRADES

The 2025/26 water utility capital budget included funding to upgrade the Supervisory Control and Data Acquisition (SCADA) system at the wellfield. The SCADA system monitors and controls the pumps, chlorine residual, and other parameters by collecting real-time data. It also sends automated alarms and permits operators to use remote commands.

Current Status

- Raytech Electrical is replacing obsolete programmable logic controllers (PLCs) at the chlorination building and within the well pits with new, modern units. Work is progressing to plan.
- We are transitioning SCADA communications from legacy data phone lines to Starlink internet. Field testing is underway.

Expected Benefits

- Modern PLC hardware and satellite internet will reduce downtime associated with aging equipment and copper-based lines.
- The new architecture supports current cybersecurity practices (e.g., segmented networks, encrypted tunnels/VPN, hardened endpoints) and eliminates vulnerabilities associated with legacy dial-up/data lines.

Ongoing

- Complete PLC installation, I/O verification, and functional testing.
- Commission Starlink connectivity and finalize secure networking (VPN/firewall rules, whitelisting).
- Execute staged cutover from data lines to Starlink.
- Perform end-to-end SCADA controls and alarm testing.
- We anticipate completing the communications cutover and final commissioning in early December.

SURFACE AND GROUNDWATER SAMPLING

GHD Limited (Environmental Scientists) completed quarterly surface and groundwater sampling in June and September. The sampling program includes sampling from 6 monitoring wells for groundwater quality as well as sampling from 7 surface water sampling sites.

There were no issues with the June sampling, but the recently completed September sampling had some complications as 6 of the 7 surface water sampling locations were “dry”. However, the static water levels in the groundwater monitoring wells were consistent with previous years.

WATER LEVELS – PRODUCTION WELLS

With the drought conditions we have been experiencing all summer and fall staff have been closely monitoring water levels in the 4 production wells. The wells are equipped with level transducers that measure the water level above the pump. At rest there is typically 40m of water above the pump and when in operation the water is drawn down to approximately 25m of water above the pump. This drawdown is consistent with historical pumping data, indicating our water supply is stable.

WELLFIELD RISK ANALYSIS

At the April 8, 2025, meeting, the Committee passed the following motion.

That the North Tyndal Wellfield Advisory Committee recommend staff conduct a risk analysis of the wellfield area outside of the Irving Management Plan and further recommend a plan if required to mitigate any risks.

Staff have been in contact with Ken Newcombe, a forestry technician with the Department of Natural Resources and Renewables in Oxford. The plan is to work with Ken over the winter to complete a risk analysis for the wellfield with respect to post hurricane and drought conditions.

Project Name:	Town of Amherst Source Water Protection	Project No.:	250851.00
Date:	October 2, 2025		
Subject:	Road Salting in a Protected Water Area		
To:	Aaron Bourgeois, Director of Operations, Town of Amherst		
From:	Colin Walker		
Copies to:			

Background

The Source Water Protection committee for the Town of Amherst well field has enquired whether road salting could be resumed on Tyndal Road. CBCL has reviewed the Town of Amherst’s Source Water Protection (SWP) Plan (June 2016). The North Tyndal Well Field was developed as part of a multimillion-dollar project in the early 1990s, after the Town’s original well field was contaminated by dry cleaning chemicals. Once affected by a contaminant, aquifers are rarely if ever capable of supplying potable water in the future.

The Amherst SWP Plan includes the following information:

- ▶ Mapping of the Source Water Protection Area (SWPA), an outer boundary defined by groundwater flow paths and a maximum travel time of 25 years. Mapping from the SWP Plan is provided in Attachment A.
- ▶ Rainwater that infiltrates in this area enters a regional aquifer and flows to the Town’s municipal wells, where drinking water is produced.
- ▶ The SWPA is subdivided to include two smaller zones, corresponding to shorter travel times.
- ▶ Land use protections and restrictions are increased in zones closer to the municipal wells, where travel times are shorter, and risk is increased.
- ▶ Tyndal Road is on the boundary between Zone 1, and Zone 2. Groundwater travel times in this area could be as low as 2 years, defining the highest-risk zone.

Amherst’s well field is a designated Protected Water Area (PWA) under the Nova Scotia Environment Act and consequently measures and land use restrictions that protect Amherst’s municipal water are enforceable as legislated by the Province of Nova Scotia (*subsection 106(5) and (6), S.N.S. 1994-95, c 1. September 16, 1992, N.S. Reg. 200/92*). The Act provides the following instruction concerning chemical melters, including road salt:

“Ice control restrictions

14 (1) Ice control on any road situated in the Protected Water Area shall be accomplished by spreading with a minimum salt content.

(2) Subject to subsection (1), no person shall use any material or chemical for ice control on a road in the Protected Water Area unless that person has the prior written approval of the Minister or the Administrator.”

In order to obtain permission to use road salt in the SWPA, the entity providing this service would need to demonstrate to the Minister that the potential for drinking water to be affected is minimal or absent.

Discussion

Salt can be a threat to drinking water because elevated concentrations of chloride and sodium render it non-potable. At concentrations above 250 mg/L, chloride imparts an undesirable taste, and the water becomes increasingly corrosive to municipal infrastructure and household piping. Concentrations of sodium exceeding 200 mg/L are not safe for sodium-restricted diets. At concentrations above 1000 mg/L salty water is considered brackish and unsuitable for most practical uses. Road salt also affects aquatic environments at moderate concentrations.

Examples of groundwater sources that were rendered non-potable by road salt are numerous and well documented. Persistent use of road salts can compromise groundwater quality for timeframes on the order of decades, as flushing by natural processes is slow, and techniques for remediation are cost prohibitive. As icy roads pose a serious hazard, the use of alternative ice melters and friction enhancers has become common practice. Examples include sanding-only zones, reduced speed limits, sand-salt blends, brine spraying, and the use of beet juice.

The behaviour of road salt in groundwater systems has been characterised extensively. Salt is used as a conservative tracer in many groundwater investigations and is the first detectable indicator of impacts related to many contaminant sources such as landfills, sewage, agriculture, seawater intrusion, and other industrial activity. Sodium and chloride are transported at the groundwater velocity, do not break down chemically, and are not absorbed or attenuated by aquifer material.

Whereas road salting is typically restricted in the entirety of a Source Water Protection area (25 yr travel time), Tyndal Road is directly adjacent to Zone 1 of the SWPA. Groundwater travel times in this zone could be as short as 2 years, indicating that activity in this corridor poses an immediate and high risk to the municipal well field. CBCL is unaware of any published studies, reports, or guidance documents that would recommend or allow for road salting in Zone 1 of a Source Water Protection Area.

If road salting were to resume on this stretch of Tyndal Rd, the risk to the well field would be increased and new monitoring programs would be required, with associated costs. Should the water supply be affected by salting, the replacement cost has been demonstrated to be on the order of millions of dollars, if a viable replacement option exists.

Example References (Health Canada)

Health Canada Guidelines for Canadian Drinking Water Quality. *Chloride*. April 1979 (Updated 1987).

Hutchinson, F.E. Effects of highway salting on the concentration of sodium chloride in private water supplies. *Res. Life Sci.*, Fall: 15 (1969).

Murray, D.M. and Ennst, V.F.W. An economic analysis of the environmental impact of highway de-icing salts. National Technical Information Service Publication 253, U.S. Department of Commerce, Springfield, VA. p. 268 (1976).

Pollock, J.J. and Toler, L.G. Effects of highway de-icing salts on groundwater and water supplies in Massachusetts. U.S. Geological Survey, Boston, MA (1972).

Ralston, J.G. De-icing salts as a source of water pollution. Ontario Ministry of the Environment, Toronto (197).

Terry, R.C. Road salt, drinking water and safety. Ballinger, Cambridge, MA (1974).

Attachment A

Source Water Protection Zone Mapping

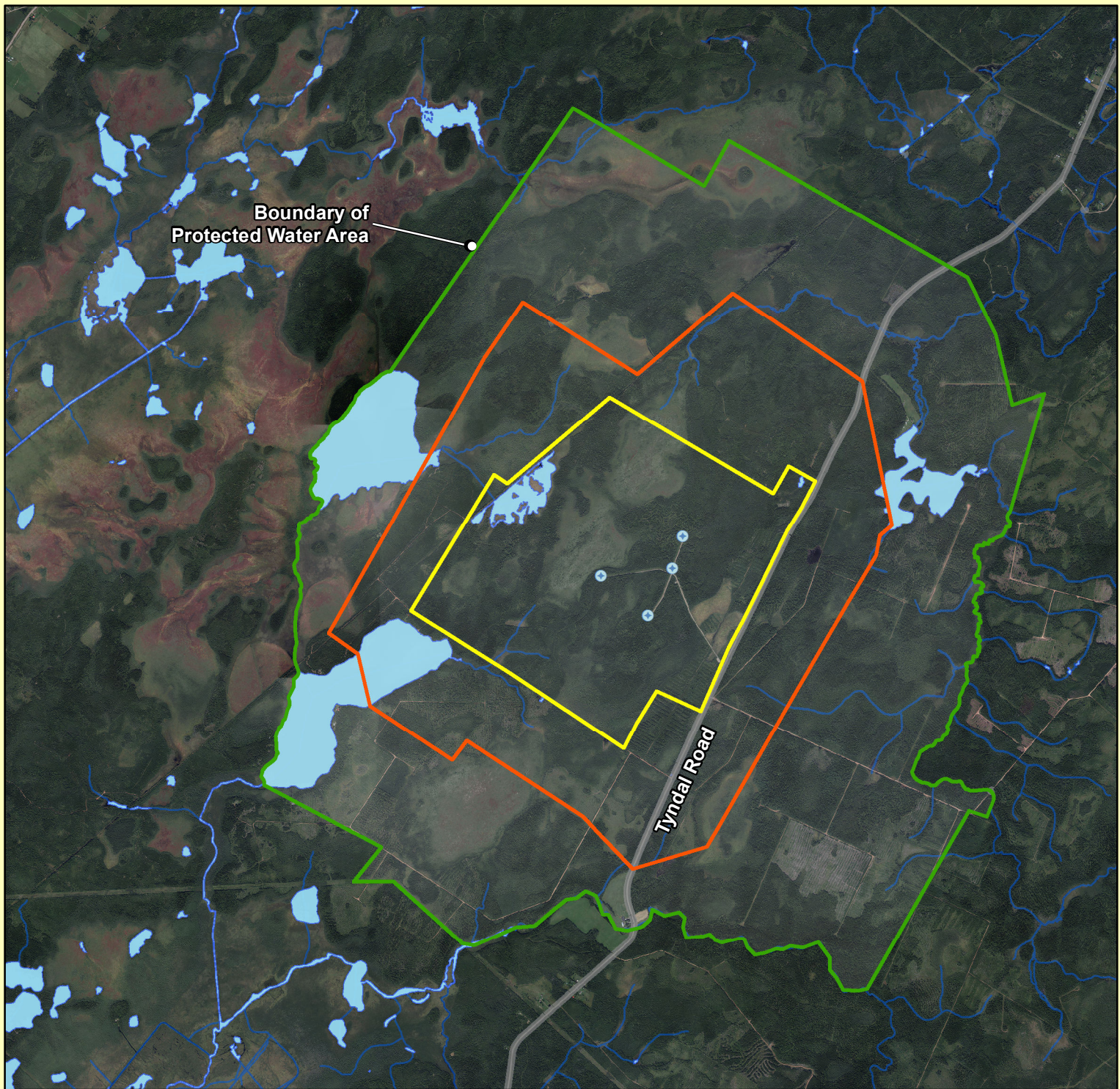


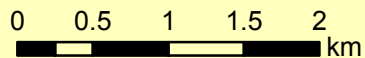
Figure 2.1.
Source Water Protection Zones

**North Tyndal Wellfield
Groundwater Protection Evaluation
Town of Amherst**



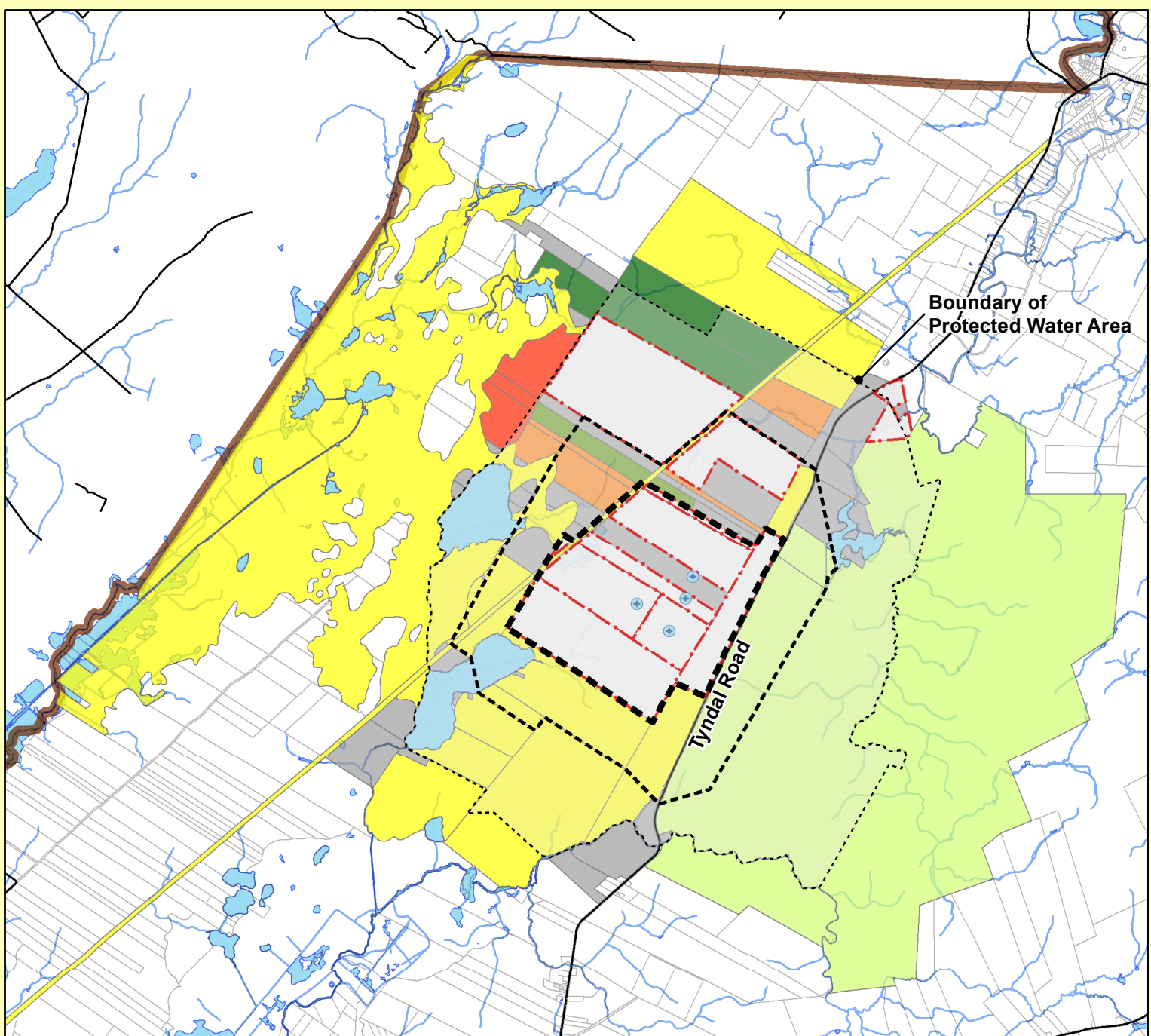
1:50,000 @ 8.5 x 11

Coordinate System: NAD 1983 UTM Zone 20N
Projection: Transverse Mercator
Datum: North American 1983



Legend

- North Tyndal Zone 1
- North Tyndal Zone 2
- North Tyndal Zone 3
- + Production Well



**Figure 2.2.
Property Mapping**

**North Tyndal Wellfield
Groundwater Protection Evaluation
Town of Amherst**



1:75,000 @ 8.5 x 11

0 2 km

Coordinate System: NAD 1983 UTM Zone 20N
Projection: Transverse Mercator
Datum: North American 1983

Legend

Property Owner	Delco	Crown Land	Other Properties	Production Well
Private	Irving	DNR	NT1	Stream
Bragg	Irving	Nature Conserv. of Canada	NT2	Water body
	Town of Amherst	NT3	Provincial Border	

MEMORANDUM

To: North Tyndal Wellfield Advisory Committee
From: Andrew Fisher, Manager, Planning & Strategic Initiatives
Date: February 5, 2018
Subject: Tyndal Road Safety

At the May 31, 2017 meeting of the North Tyndal Wellfield Advisory Committee the following motion was passed:

That staff investigate the alternatives to using sand, and further that staff contact the RCMP for accident statistics along the Tyndal Road in the Wellfield area.

Corporal David Baldwin of the local RCMP detachment provided vehicular accident statistics for that section of the Tyndal Road between the Route 6 intersection (near Roymac Homes), and the Tidnish Bridge area:

2014-15	1
2015-16	2
2016-17	2
2017-18	3
Average:	2

The above represents the period October 1 to April 30th of each year only. Corporal Baldwin indicated that the accident rates were not significantly different from other roads in the region. It was also his opinion that the sanding-only section of the road did not represent a significantly higher safety risk compared to sections that receive salt, and that the majority of the driving public are familiar with the road, and adjust their speed according to the conditions.

Respectfully submitted: Andrew Fisher
