Presentation – July 14, 2025 Town Hall Meeting

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Thank you for taking the time to be here this evening. I know these meetings can be a little technicl I will do my best to provide an update based on the review conducted by Hutchinson Environmental Sciences Ltd. in relation to this project.

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Back on April 15, 2025, our Township received substantial amount of reports and technical data from the Ministry of Mine including a Human Health and Ecological Risk Assessment (HHERA) and Conceptual Site Model (CSM), prepared by Ecometrix in 2024 and other Ministry monitoring reports. This information package is literally 1000 of pages and this was intended to address community and Council's concerns around the plan to transport the niobium tailings.

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In light of our limited internal capacity and the highly technical nature of the material we received from the province, the Township retained the services of Hutchinson Environmental Sciences Ltd., a well-respected consulting firm with expertise in hydrogeology, environmental chemistry, and ecological risk assessment to provide us with an independent technical review. This included a review of human and ecological health risks, the adequacy of environmental monitoring, the presence of contaminants in water, soil, sediment, and air, and an assessment of how well the site is being managed overall.

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Summary of the Technical Review

So What did they find. The Ministry's reports say, basically "don't worry, the risks are low"

But The Hutchinson review came to a different conclusion…it does not conclude that the project is safe. It concludes that there is not enough evidence to say it is safe, and there's a big difference between the two. They flagged a number of major concerns – missing data, outdated testing methods, and assumptions that haven't been proven in the field. One of the biggest red flags is that no cumulative effects assessment was done. That means that the Ministry hasn't looked at what happens when you put the new niobium tailings over the old uranium tailings. How do we know how these two types of waste interact?

There are incomplete hydrogeological models, as well as the lack of biological monitoring also undermine the credibility of the risk conclusions presented. But we will discuss that later on in the presentation.

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So What's in the Niobium Tailings?

These tailings, originating from the Nova Beaucage Mine, aren't harmless. They are not just sand and "gravel" like they have been telling us. They contain radioactive elements such as Uranium-238 and its decay products (e.g., uranium-234, thorium-230, radium-226), there is Lead-210, Polonium-210

These radionuclides are harmful in different ways:

- **Uranium** is chemically toxic to kidneys. Long-term exposure through drinking water can cause kidney dysfunction and damage.
- **Radium-226** has a half-life of 1,600 years and decays into radon-222, a radioactive gas. Radon exposure is a known cause of lung cancer, particularly in enclosed environments and is toxic to burrowing animals.
- **Polonium-210** and **lead-210** emit alpha radiation. Alpha particles can cause severe damage to internal organs if inhaled or ingested.

In addition to radionuclides, the tailings also contain elevated concentrations of the following **toxic heavy metals**:

- **Cadmium** – a highly toxic metal that affects the kidneys, liver, bones, and is classified as a human carcinogen. Even low levels in water can cause bioaccumulation in aquatic species.
- **Arsenic** – a well-documented carcinogen affecting skin, lungs, and the immune system. Arsenic readily binds to sediments and can remobilize under certain pH and redox conditions.
- **Selenium** – an essential trace nutrient in small quantities but toxic at higher concentrations. In fish and birds, selenium bioaccumulation can lead to reproductive failure and developmental deformities.
- **Silver and Manganese** – toxic to aquatic organisms at relatively low concentrations and capable of altering gill function, growth, and survival rates.

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Leachability Concerns and Inadequate Testing

The only leach testing submitted by the Ministry was based on a 2020 study that used a method that isn't really meant for sites like this one. It is designed for landfills and waste sites, not for environments with a lot of water. Also the detection limits used in that test were too high to catch levels of metals like cadmium, arsenic, selenium, and silver. that matter in real-world environmental settings.

And while the Ministry says they're redoing the leach testing, we haven't seen any new results or time lines.

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Groundwater Pathways and Fault Line Risk

Another key issue is the incomplete understanding of how water moves beneath and around the tailings management site. The Ministry's risk model assumes that groundwater beneath the site flows consistently eastward, but even the Ecometrix study done back in 2024 recommended that the drainage interpretations needed to be verified on-site to understand the site conditions and confirm potential pathways.

The Hutchinson review has flagged that Deep wells are absent. Hydrogeologic cross-sections have not been provided. In other words, we do not know with certainty how or where groundwater is moving.

The risk associated with this knowledge gap is compounded by the presence of a known geologic fault under the TMA. Fault zones can act as preferential pathways for groundwater flow, and in this case, may allow deep migration of radionuclides and metals toward Agnew Lake or even Georgian Bay over time. Without knowing how the water moves underground, we cannot predict where these contaminants might end up.

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Surface Water and Sediment Exceedances

In 2023, the Ministry's own date showed that this site is already in crisis, with elevated levels of uranium, radium and cyanide in water and sediments around the site. They of course are down playing it, calling it "near-field" and saying that everything returns to normal downstream. The problem is, they haven't explained what "normal" means, or how they are measuring it.

The water quality memo they submitted contained statements unsupported by referenced data and Hutchinson's review emphasizes that these conclusions cannot be trusted without rigorous baseline and long-term monitoring data.

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The Township is pleased to report that the Canadian Nuclear Safety Commission (CNSC) has taken our concerns seriously and responded by conducting a Special Water Sampling Project earlier this spring. At our request, the CNSC collected samples from approximately 12 locations that the Township had identified as key areas of concern, including sites along Agnew Lake, the Spanish River, John Creek, and Ministic Creek. While May is not an ideal time for sampling due to elevated water levels and runoff conditions during spring melt, we appreciate the CNSC's willingness to act on our recommendations and it is a step in the right direction.

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Ecological Exposure and Missing Data

Moving on to ecological health, the review points out a serious lack of biological monitoring in the site assessment. The Ministry's risk assessment did not include fish tissue sampling, aquatic vegetation uptake studies, or macroinvertebrate assessments—despite the fact that these are routine components of an ecological risk evaluation.

This omission is particularly problematic because:

- **Cadmium and selenium** bioaccumulate, meaning they build up over time.
- Fish and invertebrates serve as prey for birds and mammals.
- Selenium toxicity has been documented in the niobium tailings.
- Macroinvertebrate populations are very sensitive indicators of ecosystem stress.

Hutchinson has strongly recommended that future monitoring include the following biological endpoints:

- Seasonal fish tissue samples from John Creek, Ministic Creek, and the Spanish River.
- Aquatic vegetation chemistry at multiple locations.
- Macroinvertebrate surveys to assess species richness and abundance.

The Ministry also claims that with the natural wetland surrounding the sites, this is an effective mitigation strategy. However Hutchinson warns that this is an unreliable strategy for radioactive contaminants. Wetlands can help remove metals, but they are not proven to

reduce concentrations of radium, uranium, or thorium in a predictable or safe way without engineered systems and active maintenance.

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Radon Gas and Burrowing Animals

One specific concern raised that had been ignored in the Ministry's reports is radon exposure to burrowing mammals. Radon-222 is a radioactive decay product of radium-226, both of which are found in the tailings. While the risk to the public is low given the lack of development on the site, animals that tunnel into the cover soil could be exposed to radiation that was not modeled or assessed. This exposure pathway was discussed in earlier studies, but was ignored in the most recent risk assessment.

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Construction Oversight and Unavailable Plans

The review also identifies a troubling lack of detail on how the construction phase will be managed. No full construction plan has been provided to the Township. We do not know the exact locations of tailings placement. The Ministry has said that a geogrid and granular buffer layer (only 6 inches deep) will applied to cap the site, but they have not shared those plans publicly.

The Ministry has promised a range of plans to mitigate construction-phase risks—these include a Dust Management Plan, Soils Management Plan, Health and Safety Plan, and construction sequencing documents. However, none of these have been provided to the Township.

The construction period represents the highest risk for airborne dust generation. Both humans and animals may be exposed to windblown particulates. Without access to these plans, the Township cannot verify that dust suppression methods will be effective.

Similarly, we have not received erosion and sediment control measures, or confirmation that surface water diversions will be in place. Without these plans we can't assess whether the construction please – the highest risk period – will be properly managed.

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Lack of Baseline and Far-Field Monitoring

We also do not have a complete set of baseline data. This is needed to compare pre- and post-construction environmental quality.

Hutchinson recommends baseline sampling of:

- Surface water and sediment at the Middle Dam, West Dam, John Creek, and Ministic Creek.
- Soil samples near placement areas.
- Groundwater at new and existing wells, including at least one deep well per quadrant of the site.
- Biotic indicators such as fish, aquatic plants, and macroinvertebrates.

They also note that far-field receptors—specifically the Spanish River downstream of Ministic Creek and Agnew Lake near Sand Bay—must be monitored, as these are critical community resources.

Without this information we cannot track changes in the water, sediment of biological health, we also won't be able to respond – or hold anyone accountable – if things go wrong later.

Closure and Long-Term Monitoring Plan

Right now, the Ministry has committed only to "a minimum of 5 years" of post-construction monitoring. But some of the radioactive materials involved here have half-lives of over 1,600 years. Five years of monitoring is just not enough.

Hutchinson recommends that the Ministry develop a formal closure and long-term monitoring plan that includes:

- Inspection and maintenance protocols for the tailings cover.
- Trigger thresholds and response plans for exceedances.
- Ongoing sampling of water, sediment, and biota.
- Radiological decay tracking, including radon testing.
- A commitment to continue monitoring beyond 5 years, with no fixed end date unless data supports it.

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Final Recommendations to Council and Residents

So several weeks ago we have received an important update from the Ministry of Transportation (MTO). According to a recent email, the existing stockpile of niobium tailings currently stored at Nipissing First Nation lands will not be going to the Agnew Lake site but it will be transported to the Clean Harbors facility near Sarnia, Ontario.

Clean Harbors is a licensed hazardous waste treatment facility. This development raises a serious and obvious question: If the stockpiled tailings are being sent to a site specifically designed to manage hazardous waste, why wouldn't all of the niobium tailings be handled the same way? If they can be safely transported and managed at Clean Harbors, it simply makes sense that the remainder of the material should be sent there as well.

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As we mentioned earlier in the presentation that the Ministry's conclusion that this project is "low risk" is based on assumptions not properly supported by adequate field.

Based on Hutchinson's findings, the Township submitted a formal information request to the Ministry of Mines, and MTO with a requested response by July 14, 2025. These are:

1. **Cumulative Effects Risk Assessment** – A full assessment is needed to evaluate how uranium and niobium tailings together may affect environmental and human health.
2. **Updated HHERA Work** – The Ministry must complete leach testing with accurate detection limits, confirm drainage and groundwater pathways, and revisit the exclusion of radon exposure to wildlife.
3. **Construction Plans and Monitoring** – The Township has not received the Dust Management Plan, Soils Management Plan, Health and Safety Plan, or Tailings Placement Design. A special effects monitoring program is also needed during the 4-month construction phase.
4. **Baseline Environmental Monitoring** – Data must be collected for surface and groundwater, soil, sediment, fish tissue, aquatic vegetation, and macroinvertebrates. This should include both near-field and downstream locations.
5. **Closure and Long-Term Monitoring** – A formal closure plan must include long-term monitoring commitments, cover maintenance, radon testing, far-field testing near drinking water sources in the Spanish River/Agnew Lake and clear triggers for remedial action.

So we have not received any of the requested information, the Ministry has requested an extension to provide these to us.

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Our position is clear, there is just not enough data to justify moving forward with transported to the Agnew Lake Tailings Management Area. The risks are too great to proceed with only assumptions, and we will not be a dumping ground for incomplete science.

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I would like to close with a statement from David Suzuki from a news article posted on July 2, 2025. And I quote, " The foundation of our existence, is nature, clean air, pure water, rich soil, food and sunlight. That's the foundation of the way we live and, when we construct legal, economic and political systems, they have to be built around protecting those very things, but they're not…I'm urging local communities to get together, citizens are going to have to be at the front lines.